

DISCUSSION PAPER

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THE DATA BASE AND DOCUMENTATIONS FOR KOREA
INDUSTRIAL LOCATION POLICIES RESEARCH PROJECT

by

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The views presented herein are those of the author(s), and they should not be interpreted as reflecting those of the World Bank.

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for Urban Deconcentration

Abstract

The author describes the data files used in the research project, shows the steps taken to prepare the data for analyses, and provides in detail the information needed for future use of the data files.

The data base consists of three main data files: the Mining and Manufacturing Surveys, 1973-1981, National Bureau of Statistics; the Location Census of Manufacturing Establishments, 1978, Ministry of Trade and Industry; and the Project Establishment Survey.

The technical information necessary for accessing the data files are in Chapter IV supplemented by appendixes.

TABLE OF CONTENTS

	<u>Page</u>
I. Introduction.....	1
II. Data File Descriptions.....	3
1. Mining and Manufacturing Survey, 1973-1980.....	3
2. Mining and Manufacturing Survey, 1981.....	4
3. Project Sample Establishment Survey.....	5
4. Location Census of Manufacturing Establishments.....	7
III. Data Preparation.....	10
1. Mining and Manufacturing Survey, 1973-1980.....	10
2. Mining and Manufacturing Survey, 1981.....	13
3. Project Sample Establishment Survey.....	22
4. Location Census of Manufacturing Establishments.....	26
Annex III.1: A Fortran Program -- Stratified Random Sampling.....	29
Annex III.2: Consistency Verification Table.....	31
IV. File Documentation.....	32
1. Tape Directory.....	32
2. Technical Memorandum.....	33
Annex IV.1: Tape Directory	
Annex IV.2: Record Layout	
Appendix 1: Coding Instructions for Open Questions, Project Sample Establishment Survey	
Appendix 2: The Geocode System	
Appendix 3: The Standard Industry Classification Codes	
Appendix 4: Cross Reference Matrix	
Appendix 5: Questionnaires	
* Appendix 6: One-Way Frequency Distributions	

* Available upon request.

List of Tables

	<u>Page</u>
1. Annual Manufacturing Subfiles.....	11
2. Firm-Type Subfiles of Mergefile (1977-1980).....	12
3. Twenty-Variable Subfiles (1977-1980).....	12
4. Replacement of 1977 Geocodes in Seoul.....	14
5. Replacement of 1977 Geocodes in Gyeonggi.....	15
6. Improper Relocation Years.....	17
7. Invalid Geocodes and Corrections.....	18
8. Unspecified Previous Location.....	19
9. Unspecified Relocation Classifications.....	20
10. Stratified Subfiles.....	21
11. Stratification of Establishments in the Population.....	23
12. Sample Composition.....	23
13. Conversion of KID Geocode to NBS Geocode.....	27

I. INTRODUCTION

This paper describes the data base used for the Korea industrial location policy research project 1/ and provides documentations and guidelines for future users. The data base consists of a sample survey of 500 manufacturing establishments conducted as part of the project and two existing data sets, the Mining and Manufacturing Establishments Survey for 1973-1981 collected by the Korean National Bureau of Statistics (NBS) and the Location Census of Manufacturing Establishments conducted by the Ministry of Trade and Industry in 1978.

NBS conducts the Mining and Manufacturing Survey annually covering all manufacturing establishments with five or more employees. It takes the census of manufacturing establishments every five years including a sample of firms with less than five employees; 1973 and 1978 were such census years.

In response to our request made during a mission in February 1982, the NBS included in the 1981 survey conducted in April 1982 six questions on location history of establishments including the date of foundation, the frequency of relocation, the date of relocation, previous location, and reasons for relocation. This data set was used to summarize moving patterns of relocation firms and served as the sample frame for selecting 500 sample firms.

1/ "An Evaluation of Industrial Location Policies for Urban Deconcentration." RPO 672-58/91.

The survey instrument for the Project Sample Establishment Survey was designed by Kyu Sik Lee, Project Director, and was executed by the local project team in Korea during August-October 1983. The survey was the project's major data collection effort. The survey interviews were completed for 499 firms in the Seoul region.

In 1978, under the auspices of the Ministry of Commerce and Industry (MOCI), the Korea Industrial Development Research Institute (KID) conducted a national location survey, the Location Census of Manufacturing Establishments. The census focused on location characteristics including information on pollution, electricity and water use, and future plans to move.

This paper consists of four chapters. Chapter II describes the information available in the data files; Chapter III documents how the data sets were prepared for various research tasks; finally, Chapter IV provides technical information needed for using these data files.

II. DATA FILE DESCRIPTIONS

1. Mining and Manufacturing Survey, 1973-1980

The annual survey covers all mining and manufacturing establishments with five or more workers and the census which is taken every five years (including 1973 and 1978) includes a sample of establishments with less than five workers. As shown in the survey questionnaires in the Appendix 5, the following information is covered by the survey:

- (1) Identification and establishment characteristics:
establishment identification number, goecode for present location, year of foundation, major products by SIC codes;
- (2) Establishment size: lot size, ground floor space, and total floor space;
- (3) Employment and annual wage bill: the number of production and office workers by sex, and annual wage bills for the two groups;
- (4) Output: value of annual shipments;
- (5) Tangible fixed assets: values of land area, buildings, machinery equipments and facilities, and transportation equipments;
- (6) Annual production costs: raw materials, fuels, purchased electricity and water, and repair and maintenance;

- (7) Value of inventories: value of products, raw materials, and fuels stored at the beginning and end of the year.

The original questionnaires, record layout, and one-way frequency distribution are attached in the Appendix 5 and 6 for detailed information.

2. Mining and Manufacturing Survey, 1981

As indicated earlier the 1981 survey contained the firm relocation module prepared by the research team. The questions included those listed as follows.

QUESTIONNAIRE FOR LOCATION HISTORY OF
MANUFACTURING ESTABLISHMENTS

1. Has your plant been located at the present site since your establishment was funded?
Yes or No. If NO, go to the next question.
2. Where was your previous plant located? Six digit geocode
3. How many years have you been operating at the present site?
_____ years.
4. Did you change the line of production after you relocated to the present site?
SIC code
5. If YES, what was the line of production at the previous location?
SIC code
6. Did you relocate to the present site because of certain government measures?
 - a. Incentive schemes
 - b. Government order to relocate
 - c. None of the above

Information in the 1981 Survey File

NBS provided to us only a limited amount of information besides the relocation information. The file contains the following information:

- (1) Identification and establishment characteristics:
identification number, six-digit geocode for present location, major products represented by the SIC code, and year of foundation.
- (2) Location history: four-digit geocode for previous location, date of relocation, and reasons for relocation.
- (3) Employment: the number of employees by sex and work type.

This 1981 "mover" file was essential for our research. This data set made it possible to summarize moving patterns of relocating firms and to verify the extent of policy implementation. The mover file served as the sample frame for drawing a random sample of 500 firms for the project's establishment survey. Even though the mover file had a limited number of variables, it was the only data of its kind available and provided key stratification variables. The sample was stratified by types of location tenure (e.g., births, movers, and non-movers), firm size defined by employment, industry type, and location. The information on reasons for relocation made it possible to oversample those firms that were influenced by the government policy instruments such as incentive systems or relocation orders.

3. Project's Sample Establishment Survey

This project's establishment survey was a major data collection effort to obtain the new data necessary for empirical

studies. The survey was carried out by the local research team during August-October, 1983. The survey interview was successfully completed for 499 manufacturing establishments in the Seoul region.

As stated above, the establishments in the 1981 manufacturing survey were stratified by the following four categories: (1) location tenure (non-movers, movers, and births); (2) the type of industry defined by two-digit SIC codes; (3) firm size by employment; and (4) location defined by subareas in Seoul and Gyeonggi. We chose the textile industry and the fabricated metal industry as the industries to be studied.

In order to study location decisions in recent years, the sample firms were confined to those founded or relocated in 1979 or thereafter. Movers who relocated in response to government policy actions were oversampled. Large establishments were also oversampled. Regarding the location stratification, the sample allowed equal probabilities among subareas defined by the four-digit geocode, within Seoul and Gyeonggi respectively.

Although the sampling had been completed from the 1981 survey file, we needed logistical support from NBS to execute the actual survey in Korea. The 1981 file had only identification numbers and geocodes without the name and address of establishments. The NBS staff provided the name and address of our sample firms by matching their ID's with those of the NBS master file.

The realized sample of 499 consists of 221 mature firms (i.e., non-movers), 141 movers, and 137 births. The sample covered all seventeen Gu's (districts) in Seoul, all four Gu's in Incheon, seven of eight satellite Si's (cities), and fifteen of twenty Gun's (counties)

in Gyeonggi. The textile industry had 217 firms (43.49%) and 273 (54.71%).

The establishment survey questionnaire contains about 150 questions divided into the following five parts (see Appendix 5):

- Part 1 - A set of comprehensive questions for all establishments: It includes the firm's present location, location history with year of foundation, and plant characteristics such as industry type, lot size, floor space, and land price. It also asks type of workers, shipments of inputs and outputs, public utility services, and government incentive schemes.
- Part 2 - A set of questions to movers about their previous location, reasons for relocation, government policies intended to influence relocation, and site characteristics.
- Part 3 - Questions about future plans for expansion or relocation for all establishments.
- Part 4 - For birth firms: A set of questions about important factors considered in choosing the location including incentive schemes.
- Part 5 - Questions to non-movers about their on-site expansions.

4. MOCI Location Census of Manufacturing Establishment

In 1978, under the auspices of the Ministry of Commerce and Industry (MOCI), the Korean Industrial Development Research Institute (KID) conducted the Location Census of Manufacturing Establishments. The census was intended to cover all manufacturing industry establishments in the entire country as of December 31, 1978.

Unlike the NBS census or surveys which had been regularly conducted to obtain data on the level of production and the industrial structure of the manufacturing sector, this census was designed for a special purpose -- to obtain data necessary for a study of industrial location.

A copy of the MOCI Census data was released to us on December 20, 1982. It contained 18,661 establishments in Seoul-Gyeonggi. Of these, the number of small firms with less than 5 employees is only 878. It was obvious that the MOCI Location Census did not cover all establishments in the manufacturing sector.

According to the Address Coding Manual of the MOCI Census, the goecode system that was developed by the KID was different from the NBS standard system. The goecode consists of six digits for each administrative district as follows:

- (1) the first two-digits denote Seoul (01) or Gyeonggi (02);
- (2) the next two-digits denote Gu, Si, or Gun;
- (3) the final two-digits denote Dong, Eup, or Myeon (except for Incheon, where the final two-digits are for Gu).

The fact that the MOCI census used its own geocode system makes it impossible to compare the MOCI census directly with the NBS manufacturing census at the four-digit geocode level. To overcome this problem, the KID code has been converted into the NBS standard geocode. (See section 4 of the next chapter for more details.)

As shown in Appendix 5, the questionnaire for the MOCI Location Census asks 19 questions consisting of 40 variables.

The following information is included:

- (1) The name and address of the establishment, major products, value of capital, annual shipment, the number of employees by type of work;
- (2) The zone of establishment location, lot size, and building space;
- (3) The amount of electricity, water, and fuel consumed;
- (4) The total volume of raw materials used, and of goods produced, the means of shipment, and destination of shipment;
- (5) Types of pollution generated, the facilities to prevent pollution, and whether the establishment received government orders to move due to pollution;
- (6) Reasons for selection of the present location;
- (7) Information on future plans to move or expand, such as desired type of location, lot size required, and distance from the present location.

III. DATA PREPARATION

1. Mining and Manufacturing Survey, 1973-1980

Creation of Subfiles

Each annual file for the 1973-1980 period was processed by a Fortran program to extract the records for Seoul and Gyeonggi. From these files mining establishments were eliminated. Diane Reedy used the SYSTEM/SORTMERGER utility to merge these annual subfiles to create a masterfile for 1977-1980. The records were sorted first by firms' ID, then by year for the period.

This merged data file was further divided by the firm type and created subfiles for births, movers, deaths, and mature firms. The birth firms were those first appeared in the file in any year, deaths were those disappeared from the file, and movers were those firms with different geocodes between two years during the 1977-1980 period. The mature firms were those appeared in all years with the same address. Particular attention was given to movers because the 1977 survey file had goecodes different from other years. After the 1977 goecodes were replaced by those corresponding to 1980 (as explained below), the new 1977 files were merged with the 1978-1980 annual subfiles, then a subfile for mover firms was created.

Table 1 and Table 2 provide information about those subfiles created by year and by firm type, respectively. Table 3 shows a subfile with 20 key variables needed for production function estimations.

Table 1: ANNUAL MANUFACTURING SUBFILES

<u>File Name</u>	<u>Number of Records</u>	<u>Mining Firms (Excluded)</u>
D/REEDY/MFG73/SEOUL3	5832	23
D/REEDY/MFG74/SEOUL3	5848	22
D/REEDY/MFG75/SEOUL3	5542	18
D/REEDY/MFG76/SEOUL3	6137	18
D/REEDY/MFG77/SEOUL3	7282	25
D/REEDY/MFG78/SEOUL3	7752	19
D/REEDY/MFG79/SEOUL3	8246	15
D/REEDY/MFG80/SEOUL3	7652	14
<hr/>		
D/REEDY/MFG73/GYEONGGI	2437	235
D/REEDY/MFG74/GYEONGGI	2386	208
D/REEDY/MFG75/GYEONGGI	2763	240
D/REEDY/MFG76/GYEONGGI	3329	245
D/REEDY/MFG77/GYEONGGI	2959	242
D/REEDY/MFG78/GYEONGGI	5229	253
D/REEDY/MFG79/GYEONGGI	5680	243
D/REEDY/MFG80/GYEONGGI	5860	234

Table 2: FIRMTYPE SUBFILES OF MERGEFILE (1977-1980)

<u>First Name</u>	<u>Number of Records</u>	<u>Number of Establishments</u>
D/REEDY/SEOUL/MATURE	12914	3231
D/REEDY/SEOUL/BIRTH	8798	4235
D/REEDY/SEOUL/DEATH	4097	1716
D/REEDY/SEOUL/MOVERS	296	97
D/REEDY/GYEONGGI/MATURE	9576	2394
D/REEDY/GYEONGGI/BIRTH	6541	3258
D/REEDY/GYEONGGI/DEATH	1953	809
D/REEDY/GYEONGGI/MOVERS	149	40

Table 3: Twenty-VARIABLE SUBFILES (1977-1980) a/

<u>File Name</u>	<u>Number of Records b/</u>		
	<u>Seoul</u>	<u>Gyeonggi</u>	<u>Total</u>
D/CHUN/MFG73/SF20	5832	2437	8269
D/CHUN/MFG74/SF20	5848	2386	8234
D/CHUN/MFG75/SF20	5542	2763	8305
D/CHUN/MFG76/SF20	6137	3329	9466
D/CHUN/MFG77/SF20	7282	2959	10241
D/CHUN/MFG78/SF20	7752	5229	12981
D/CHUN/MFG79/SF20	8246	5680	13926
D/CHUN/MFG80/SF20	7652	5860	13512

a/ See record layout in Annex IV.2 for the descriptions of 20 variables.

b/ Manufacturing establishments only.

Geocode System in Survey Files

The Korean government revised the geocode system in 1980. Because the original survey files for 1978 and 1979 had only the first two digits of the geocodes, NBS staff entered the 1980 six-digit geocodes to replace the two-digit codes appearing in the original 1978 and 1979 files to produce a consistent geocode system. But the 1977 file still had old geocodes.

Replacement of Geocodes in 1977 Files

In 1980 Seoul had 17 Gu's, an increase of four new Gu's over 1977. Replacing the 1977 geocodes by those of 1980 required identifying those Dong's in the four new Gu's and assigning the new geocodes to them. Those affected Gu's were:

1117 split into 1118 and 1119,

1120 split into 1122 and 1123,

1121 split into 1124 and 1125,

1122 split into 1126 and 1127.

A similar change occurred in Gyeonggi. In 1980 Gyeonggi gained one Gun over 1977, resulting from the breakup of Gun 3131 into two, 3131 and 3132. Tables 4 and 5 show the details of the replacement work done.

2. Mining and Manufacturing Survey, 1981

The preparation of the 1981 manufacturing survey data needed extra attention for the following reasons: Since the survey file was released to us before it was finalized, we first had to go through a data cleaning process. Particularly, we concentrated on identifying consistencies existing between variables in the relocation module, a set of information on firm's relocation history. Next, for the purpose of

Table 4: REPLACEMENT OF 1977 GEOCODES
SEOUL

<u>Former Geocode (1977)</u>	<u>Replacement Geocode (1980)</u>
1111nn	1111nn
1112nn	1112nn
1113nn	111400
1114nn	1114nn
1115nn	111600
1116nn	111700
111701-111706	111900
111707-111708	111800
1118nn	112000
1119nn	111300
112001-112012, 112014	112300
112013, 112015-112029	112200
112101-112105	112500
112101-112103, 112106	112400
112201	112600
112202-112206	112700
1123nn	112100

Table 5: REPLACEMENT OF 1977 GEOCODES
GYEONGGI

<u>Former Geocode (1977)</u>	<u>Replacement Geocode (1980)</u>
3101nn	3101nn
3102nn	3102nn
3103nn	3103nn
3104nn	3104nn
3111nn	3111nn
3112nn	3112nn
3113nn	3113nn
3114nn	3114nn
3115nn	3115nn
313101	313101
313102-313104	313200
3132nn	313300
3133nn	313400
3134nn	313500
3135nn	313600
3136nn	313700
3137nn	313800
3138nn	313900
3139nn	314000
3140nn	314100
3141nn	314200
3142nn	314300
3142nn	314400
3144nn	314500
3145nn	314600
3146nn	314700
3147nn	314800
3148nn	314900
n.a. (Banweol)	(31500)

using this file as the sample frame we prepared various subfiles according to the stratification criteria. The steps taken for data cleaning and creating the subfiles were as follows.

Relocation Classification (RC)

Relocation classification code is a variable which identifies whether a firm is a mover or not. RC takes values of 0, 1, or 2 as follows:

- (1) If the RC value is 0, then the firm is a non-mover. Consequently, the previous location and the date of relocation are coded as zero;
- (2) If the RC value is 1, the firm is a mover who has relocated within the Si, Gu, or Gun where the firm is currently located. Thus, the first four digits of the present location are equal to those of the previous location. The date that the firm relocated is represented in MMDDYY;
- (3) If the RC value is 2, then the firm is a mover, who has relocated from one Si, Gu or Gun to another. Therefore, the four digit location code has changed. The date of relocation is also given as MMDDYY.

Data Editing

Data cleaning was the first task required in order to process the 1981 manufacturing survey data. For this purpose, a Fortran program was written to verify coding and conduct consistency checks. The coding verification was focused on the relocation years and the geocodes of previous location and present location. The consistency check was done by examining the previous location and the present location based on the

Table 6: IMPROPER RELOCATION YEARS

<u>Firm ID</u>	<u>Present Location</u>	<u>SIC</u>	<u>Date of Relocation</u>
3101588	311420	35113	<u>830331</u>
1115567	112220	35299	<u>831000</u>
2104706	211821	37103	<u>840000</u>

relocation classification (RC). In validating the geocodes, the 1980 NBS geocode system served as the base.

The following summarizes the results found from the verification and consistency check. The obvious errors, given below, were corrected on a copy file created for back-up:

1. Three firms in Table 6 having '83 or '84 as the year of relocation are removed from the file.
2. Table 7 lists twelve firms which have invalid geocodes representing the previous location or the present location. One of them (ID:2202352) has 215 for its present location. The 215 has been changed to 2215 so that the first two digits of the geocode (22), denoting Si or Do, are consistent with the first two digits of the firm ID. Two of them (ID's 1116431 and 1116447) which are mover firms (RC=2) have invalid geocodes in their previous location (1612, 1515 respectively). These firms are left in the file unchanged. Particular care should be paid to them when they are actually encountered. Finally, the rest of the firms (nine firms) have the previous location geocodes

of which the first two digits indicating Gu or Gun are valid but the next two indicating Gu or Gun are not. Since these firms are useful at two-digit geocode level, the first two valid digits have been saved, but the next two invalid ones have been replaced by "00" (uncertain Gu, Si or Gun).

Table 7: INVALID GEOCODES AND THE CORRECTIONS

<u>Firm ID</u>	<u>Present Location</u>	<u>SIC</u>	<u>RC</u>	<u>Previous Location</u>	<u>Date of Relocation</u>	<u>Corrections</u>
3701441	374212	32132	2	2205	810501	2200
2203352	221519	33111	0	0	0	221519
3800684	381232	35302	2	2300	790000	unchanged
1116431	112233	35599	2	1612	790510	remained
1115446	112218	35609	2	2300	790310	unchanged
3106884	315033	36996	2	2303	810329	2300
3801255	381519	38120	2	1143	801104	1100
1116447	112233	38192	2	1515	801010	remained
1120858	112322	38196	2	2300	810430	unchanged
1100702	111122	38293	2	3123	800108	3100
1112906	111818	38321	2	1129	740601	1100
1118153	112323	38525	2	2300	770310	unchanged

3. As explained earlier, if the RC value is 1, then the previous location should be the same as the present location. Although the thirteen firms listed in Table 8 have an RC value of 1, the date relocated and their previous location were unspecified (value of 0). Thus, the previous location has been replaced by the first four digits of the present location.

Table 8: UNSPECIFIED PREVIOUS LOCATION

<u>Firm ID</u>	<u>Present Location</u>	<u>SIC</u>	<u>RC</u>	<u>Previous Location</u>	<u>Date of Relocation</u>
1114263	112121	32135	1	0	810410
1106466	111427	32135	1	0	810310
1114419	112128	33132	1	0	811010
2103045	211724	34193	1	0	800311
1101066	111124	34212	1	0	800210
3600455	360228	35113	1	0	810818
3801540	381812	35302	1	0	811210
2102760	211639	35592	1	0	781201
3107527	311522	35609	1	0	811020
3107464	311520	35609	1	0	790928
2200610	221228	36991	1	0	820218
1106838	111432	39010	1	0	800308
2103021	211724	39097	1	0	731020

4. Twelve firms in Table 9 had zeros as the values of the relocation classifications. However, they specified their previous location and the date of relocation as in the table. Since they should certainly be regarded as movers, their RC values were revised as 2 according to the RC definition.

Table 9: UNSPECIFIED RELOCATION CLASSIFICATIONS

<u>Firm ID</u>	<u>Present Location</u>	<u>SIC</u>	<u>Previous Location</u>	<u>Date of Relocation</u>	<u>RC Values Revised</u>
2202808	221515	32163	2213	810615	2
2105370	211875	34119	2215	790714	2
2204411	221622	34199	2212	820329	2
1119073	112532	34213	1111	790412	2
3402474	344411	35116	3131	801210	2
3402548	344441	34116	1114	810510	2
2105411	211825	35291	2113	731295	2
2105358	211825	35592	2115	760809	2
2105357	211825	35609	2114	780710	2
2105455	211825	38239	2115	770610	2
2105196	211825	38235	2115	740325	2
2105461	211825	38432	2116	810107	2

Creation of Subfiles

According to the sampling strategy described earlier, a number of subfiles (Table 10) were created to perform stratified random sampling. Three subfiles were first created according to the location history -- mature (non-movers), movers, and births. Then each of them was divided by employment size. The movers were further divided into three subgroups according to the reasons for relocation -- voluntary, government incentives, and government orders. It should be noted here that all subfiles prepared above contained only the establishments in the textile and the fabricated metal industries to be studied. More details of the sampling procedures are described in the next section.

Table 10: STRATIFIED SUBFILES

<u>File Name</u>	<u>Records</u>	<u>Comments</u>
D/PAHK/MFG81/SAMPLE/RCTMVR/RSN1L	371	Recent Movers-Large Voluntary
D/PAHK/MFG81/SAMPLE/RCTMVR/RSN1S	425	Recent Movers-Small Voluntary
D/PAHK/MFG81/SAMPLE/RCTMVR/RSN3	84	Recent Movers by Government Incentives
D/PAHK/MFG81/SAMPLE/RCTMVR/RSN4	72	Recent Movers by Government Orders
D/PAHK/MFG81/SAMPLE/BIRTH/LARGE	733	Birth-Large
D/PAHK/MFG81/SAMPLE/BIRTH/SMALL	1744	Birth-Small
D/PAHK/MFG81/SAMPLE/MATURE/LARGE	1726	Mature-Large
D/PAHK/MFG81/SAMPLE/MATURE/SMALL	2115	Mature-Small

3. The Project Sample Establishment Survey

This section describes sample stratification, random sampling algorithm, and data cleaning done for the establishment survey.

Sample Stratification

The sample stratification criteria were described before. Table 11 shows that a total of 7,297 establishments in two industries were stratified by those criteria. Table 12 shows the planned sample composition resulted from the stratification with the following controls: (1) Three strata by firm type have equal shares; (2) over-sample large size firms with movers and mature firms; and (3) for births over-sample small firms in Seoul. The actual drawing of sample firms however was performed for 750 firms to maintain reserves for possible replacement of firms that would fail to respond to the survey.

Sample Algorithm

The final step for sampling was to develop an algorithm to perform the random sampling with strata defined above.

The following algorithm receives a stratum of N firms (input size) as an input and produces a set of M sample firms (output size) as an output. For convenience, this algorithm uses Fortran intrinsic function RANDOM to generate random numbers:

- A1. Generate a random number R by using RANDOM in such a way that $R = \text{RANDOM}(X)$, where X is a seed and $0 \leq R < 1$;
- A2. Convert the random number R to random observation S of n -digit integer by multiplying 10^n , i.e., $S = R \times 10^n$, where n is the number of digits of the input size N ;

Table 11: STRATIFICATION OF ESTABLISHMENTS IN THE POPULATION

<u>Strata</u>		<u>Region</u>		
<u>Firm Type</u>	<u>Size</u>	<u>Seoul</u>	<u>Gyeonggi</u>	<u>Total</u>
Births:	small	1,195	549	1,744
	Large	394	339	733
Mature:	Small	1,532	583	2,115
	Large	981	745	1,726
Movers: Voluntary	Small	304	148	425
	Large	190	181	371
Incentives		4	80	84
Orders		13	59	72
Total		4,613	2,684	7,297

Table 12: PLANNED SAMPLE COMPOSITION

<u>Strata</u>		<u>Region</u>		
<u>Firm Type</u>	<u>Size</u>	<u>Seoul</u>	<u>Gyeonggi</u>	<u>Total</u>
Births (168):	Small	56	28	84
	Large	42	42	84
Mature (168):	Small	37	19	56
	Large	56	56	112
Movers (168): Voluntary	Small	12	6	18
	Large	12	26	38
Incentives		56 ^{a/}		56
Orders		56 ^{a/}		56
Total				504

^{a/} Firms relocated by government policy actions were targeted without controlling the distribution between Seoul and Gyeonggi.

- A3. If $1 \leq S \leq N$ and $POPSZ(S)=0$, then take out Sth firm from the stratum being processed and leave a mark indicating the Sth firm has been selected, where POPSZ is defined as an array of size N;
- A4. Repeat A1 - A3 until the sample of M would have been obtained.

In the above algorithm, we assumed that establishments had sequential numbers from 1 through N in the input stratum. When coding it in Fortran, the Fortran conventional array served as a sequential number generator. The executed Fortran program is attached as Annex III.1.

Data Cleaning

Much effort was expended on the data cleaning task, especially to computerize the process systematically from error detection through editing. For this purpose, we divided the data cleaning process into the five steps listed below and prepared a Fortran program for each step:

Fundamental Check — A firm in the original file had 18 input cards of 80 columns. Each card had a card serial number (1 through 18) and a firm ID number for the convenience of data entry and the management of the cards. This step examined those serial numbers and ID numbers. The program S/PAHK/SURVEY/IDCHECK served to check whether each card number was properly positioned and whether each firm ID number on each of the 18 cards fully identified the firm. As a result, we found five invalid firm ID numbers, three missing cards (blank cards), two identical card serial numbers, and eighteen improper firm type codes.

Coding Verification -- Coding errors and outliers were verified by a one-way frequency distribution which was produced by STATJOB, a cross-tab program. A one-way frequency distribution revealed all data values coded for the entire 427 variables. There were 1,728 coding errors and outliers. They were listed by firm ID number and by variable number to be corrected in Seoul.

Consistency Check -- As shown in Annex III.2, a total of 13 consistency checks were made between value-related variables such as annual wage bill and employment, annual shipment and cost, etc. Also, each firm type was checked by the year of foundation, and the year of relocation was validated. As a result, we found 18 firm type errors and 754 inconsistencies.

Error Correction -- All errors found by the above checking procedure were separated into two groups of errors: those correctable in Washington and those to be corrected in Seoul. Those corrected in Washington were further confirmed by Seoul. For the latter group of errors, the local project team in some cases had to revisit the firms in order to make corrections.

Data Editing -- The local project team sent us an error correction table; 2,408 corrections had been made. Soon after, a long Fortran program of 4,000 lines performed editing and produced a final data set named D/PAHK/SURVEY499/FINAL. As an additional step, we ran the coding verification program and the consistency check program again. The one-way distribution reproduced on the final data set showed only 370 errors or error assumed values including outliers on all of 427 variables of 499 establishments.

4. MOCI Location Census of Manufacturing Establishments

As mentioned earlier, KID used its own geocode system (KID Code) for the MOCI location census. This section describes the procedure followed for replacing the KID geocodes by those of NBS. It also presents the subfiles which were created for the study of location characteristics using the MOCI data.

The 1977 NBS geocode system was entered into the MOCI census file according to the code conversion table (see Table 13). It should be noted that during the process, the record format or file attribute was unaltered from that of the original file, but the 1977 NBS geocodes were additionally stored into empty disk space at the end of the records.

Subfiles and other Outputs

- (1) Created subfiles by employment size;

<u>File Name</u>	<u>Number of Records</u>	<u>Comments</u>
D/PAHK/MOCI/GE5	17,783	5 or more workers
D/PAHK/MOCI/LS5	878	less than 5 workers
D/PAHK/MOCI/GE5LS10	5,295	5 or more and less than 10
D/PAHK/MOCI/GE10LS20	4,583	10 or more and less than 20
D/PAHK/MOCI/GE20LS50	4,048	20 or more and less than 50
D/PAHK/MOCI/GE50LS100	1,803	50 or more and less than 100
D/PAHK/MOCI/GE100	2,054	100 or more

- (2) Produced one-way frequency tables for each of subfiles created above;
- (3) Produced standard cross-tabs for the original MOCI file and D/PAHK/MOCI/GE5 which includes employees with 5 or more;
- (4) Produced cross-tabs by zone and industry for public sector variables and electricity, water and pollution;

Table 13: Conversion of KID Geocode to NBS Geocode

<u>Name</u>	<u>KID Code</u> *	<u>NBS Code</u> *
Seoul		
Jonglo	011200	1111
Jung	011300	1112
Dongdaemun	010500	1113
Seongdong	010800	1114
Seongbug	010900	1115
Dobong	010400	1116
Seodaemun	010700	1117
Mapo	010600	1118
Yeongsan	011100	1119
Yeongdeungpo	011000	1120
Gwanag	010300	1121
Gangnam	010100	1122
Gangseo	010200	1123
Gyeonggi		
Incheon Jung	020602	3101
Dong	020601	3102
Nam	020603	3103
Bug	020604	3104
Suweon	020300	3111
Seongnam	020200	3112
Euijeongbu	020500	3113
Anyang	020400	3114
Bucheon	020100	3115
Yangju	021400	3131
Yeoju	021600	3132
Pyeongtaeg	022200	3133
Hwaseong	022400	3134
Siheung	021200	3135
Paju	022100	3136
Goyang	020900	3137
Gwangju	021000	3138
Yeongcheon	021700	3139
Pocheon	022300	3140
Gapyeong	020700	3141
Yangpyeong	021500	3142
Icheon	022000	3143
Yongin	021900	3144
Anseong	021300	3145
Gimpo	021100	3146
Ganghwa	020800	3147
Ongjin	021800	3148
Banweol	022401	3150

* KID (Korea Industrial Development) code was used for MOCI Census in 1978.

** NBS (National Bureau of Statistics) code was used for 1977 MFG Survey.

(5) Produced cross-tabs by zone and industry for the following ratios

(a) production workers per building space (Pyeong)

(b) annual shipments per total workers

(c) annual shipments per production workers

All of the above cross-tabs are available upon request.

```

100 ?JOB SAMPLING/PAHK/D100/75770; % SAMPLE FIRMS FOR BIRTHS 00000100
110 DESTNAME=RJE2; 00000110
120 PRIORITY=3; 00000120
130 OPTION=XEROXALL; 00000130
140 BEGIN 00000140
150 COMPILE OBJECT/PAHK/SAMPLING FORTRAN GO; 00000150
160 FILE FILE6(XEROX,XEROXCOPIES=2); 00000160
170 DATA 00000170
180 FILE 7(TITLE="D/PAHK/MFG81/MV5/BIRTHSG/SSF",KIND=DISK, 00000180
190 * MAXRECSIZE=130,BLOCKSIZE=1300,UNITS=CHARACTERS) 00000190
200 FILE 8(TITLE="D/PAHK/MFG81/SAMPLE/BIRTHSG/SSF",KIND=DISK, 00000200
210 * MAXRECSIZE=130,BLOCKSIZE=1300,UNITS=CHARACTERS) 00000210
220 C 00000220
230 C THIS IS FOR SAMPLING FIRMS FROM BIRTH _ SMALL 00000230
240 C GENERATE RANDOM NUMBER RN BY USING INTRINSIC FUNCTION. 00000240
250 C CONVERT RN TO INTEGER RANDOM OBSERVATION N. 00000250
260 C RETRIEVE N TH RECORD FROM THE BIRTH-SMALL FILE 00000260
270 C 00000270
280 C ARRAY POPSZ IS PREPARED FOR FLAGS THAT INDICATE N TH 00000280
290 C RECORD HAS BEEN SELECTED OR NOT AS A SAMPLE. ARRAY POPSZ IS 00000290
300 C INITIALLY CLEAR WITH ZEROS, IF N TH RECORD IS MATCHED BY 00000300
310 C GENERATED RANDOM OBSERVATION, POPSZ(N) HAS VALUE OF N. OTHERWISE, 00000310
320 C IT HAS VALUE OF 0 00000320
330 C 00000330
340 INTEGER V(21),POPSZ(2200) 00000340
350 DATA POPSZ/2200*0/ 00000350
360 C 00000360
370 C DEFINE POPULATION SIZE AND SAMPLE SIZE OF SEOUL AND GYEONGGI 00000370
380 C 00000380
390 M=1744 % POPULATION SIZE 00000390
400 MS=1195 % SEOUL POPULATION 00000400
410 MG=549 % GYEONGGI POPULATION 00000410
420 N=126 % SAMPLE SIZE 00000420
430 NS=84 % SEOUL SAMPLE 00000430
440 NG=42 % GYEONGGI SAMPLE 00000440
450 C 00000450
460 X=25.8 % SEED 00000460
470 C 00000470
480 C GENERATE N (NS+NG) RANDOM NUMBERS 00000480
490 C 00000490
500 C FOR SEOUL SAMPLING 00000500
510 C 00000510
520 DO 10 I=1,NS 00000520
530 15 RN=RANDOM(X) 00000530
540 IRN=IFIX(RN*10000) % CONVERT TO RANDOM OBSERVATION 00000540
550 IF((IRN.EQ.0).OR.(IRN.GT.MS))GO TO 15 % IF NOT IN PROPER RANGE 00000550
560 IF(POPSZ(IRN).NE.0)GO TO 15 % IF ALREAD SELECTED 00000560
570 POPSZ(IRN)=IRN % SET FLAG INDICATING A SAMPLE 00000570
580 10 CONTINUE 00000580
590 C 00000590
600 C FOR GYEONGGI SAMPLING 00000600
610 C 00000610
620 DO 20 I=1,NG 00000620
630 25 RN=RANDOM(X) 00000630
640 IRN=IFIX(RN*10000) 00000640

```

650		IF((IRN.LE.MS).OR.(IRN.GT.M))GO TO 25	00000650
660		IF(POPSZ(IRN).NE.O)GO TO 25	00000660
670		POPSZ(IRN)=IRN	00000670
680	20	CONTINUE	00000680
690	C		00000690
700	C	IF POPSZ IS NOT ZERO, COPY CORRESPONDING DATA TO FILE 8	00000700
710	C		00000710
720		DO 100 I=1,MS % SEUL AREA	00000720
730		READ(7,30)V	00000730
740	30	FORMAT(I2,I7,I6,I5,I1,I4,I2,I6,I1,I2I8)	00000740
750	C		00000750
760		IF(POPSZ(I).EQ.O)GO TO 100 % IF ZERO, NOT SELECTED, SO SKIP	00000760
770		WRITE(8,30)V % COPY DATA OF SELECTED RECORD	00000770
780	100	CONTINUE	00000780
790	C		00000790
800		DO 200 I=MS+1,M % GYEONGGI AREA	00000800
810		READ(7,30)V	00000810
820		IF(POPSZ(I).EQ.O)GO TO 200	00000820
830		WRITE(8,30)V	00000830
840	200	CONTINUE	00000840
850	C		00000850
860		LOCK 8	00000860
870		STOP	00000870
880		END	00000880
890		?END JOB	00000890

Annex III.2: Identitites for Consistency Check [V: Variable]

- Check #1. Sum of male workers:
Office workers(V48) + skilled workers(V50) + unskilled workers(V52)
= total male workers(V54)
- Check #2. Sum of female workers:
Office workers(V49) + skilled workers (V51) + unskilled workers(V52)
= total female workers(V54)
- Check #3. Annual wage bill:
Skilled worker's salary(V59) x 12 x number of skilled workers (V50+V51)
+ unskilled worker's salary(V60) x 12 x number of unskilled workers
(V52+V53) \leq total annual wage bill (V184) x 10⁶
- Check #4. Office workers' residence location sum:
V63 + V65 + V67 + V69 + V71 = 100%
- Check #5. Production workers' residence location sum:
V64 + V66 + V68 + V70 + V72 = 100%
- Check #6. Commuting mode sum:
V73 + V74 + V75 + V76 + V77 + V78 + V79 + V80 = 100%
- Check #7. Product shipment mode sum:
V81 + V82 + V83 + V84 + V85 + V86 = 100%
- Check #8. Raw material shipment mode sum:
V87 + V88 + V89 + V90 + V91 + V92 = 100%
- Check #9. Product destination sum:
V101 + V102 + V103 + V104 = 100%
- Check #10. V119 + V120 + V121 + V122 = 100%
- Check #11. Waste disposal methods sum:
V151 + V152 + V153 + V154 = 100%
- Check #12. Wasre water treatment methods sum:
V 156 + V157 + V158 + V159 + V160 = 100%
- Check #13. Annual Shipment:
V181(export) + V182(domestic shipment) \geq V183(cost of raw materials)
+ V184(Total annual wage bill) + V185(transportation cost) + V186(cost of
electricity) + V187(cost of water)

IV. FILE DOCUMENTATION

All files collected for the project were copied into tape files for back-up purposes. The tape files which are residing in the Joint Computer Center (JCC) were created by using the Burroughs System Convention. The system convention which is made of system softwares requires particular knowledge on the part of the potential user in accessing the back-up tapes. In addition, every back-up file has its own attributes and record format which the user must specify when attempting to retrieve data. Thus, this final section is prepared for users to provide the following: (1) The tape directory, (2) An example of how to retrieve a back-up file, and (3) The record layout and format.

1. Tape Directory

This tape directory, as shown in Annex IV.1, consists of twenty back-up tapes. It should be noted that the first ten tapes for the mining and manufacturing survey with tape title "BPSCZX" have been merged into five tapes with the tape title "B67258". Therefore, for convenience the merged tapes should be used instead of the ten original tapes.

Tape Identification

Each back-up tape has a unique serial number and a title for identification. The serial number and title help easy access to the tape. The serial number is a six-digit integer generated by the system and the title is a name given by the person who creates the tape. The title consists of two parts: the security code and the name. The security code consists of six characters followed by one digit tape track indicator. The name is an option by which one can give a file

name of ten characters or less. For the convenience of tape maintenance, only nine-track tapes are used for back-up. For example, the first part of the title, for example, B672589, has two parts: B67258 for the security code and 9 for tape task indicator.

Tape Attributes

In particular, users who want to use back-up tapes created by others should pay attention to the attributes of the tapes. Any mistake in the attributes will not allow the user to retrieve the exact file desired. The following are some of the useful ones to know:

KIND	The storage unit where data set is stored in. eg., KIND=PETAPE, KIND=DISK.
MAXRECSIZE	Maximum logical record, length.
BLOCKSIZE	The block length, i.e., physical record size.
UNITS	Unit in which the record or block size is given. Either one of characters or words.
SAVEFACTORS	The number of days the file saved.
DENSITY	The recording density of magnetic tape. 6250 BPI used for backing-up.

The Security Policy

All of our tapes have private security which protects data on the disk or tape from being accessed by other users. Users can release the private security to public only with the user code holder's approval.

2. A Technical Memorandum -- Tape File Access

The Burroughs 7000 series computer, one of the main Bank-Fund computer systems, provides a system convention entitled COPY so that end-users may conveniently create back-up files and retrieve them. The COPY moves data from one storage to another by allowing the end-user to specify only the data files and storage units to be copied. As far as I

know, the convention is accurate, reliable, and very easy to use. However, the convention requires users to follow exactly the syntax the system provides.

An Example

Now suppose that we want to retrieve file D/PAHK/SURVEY499/MOVER from our data base. Looking for this file in the directory given as Annex IV.1, we would find that the file is on tape B672589SURVEY499 and that the serial number of the tape is H05876. Using this information, we present a small program which copies the file D/PAHK/SURVEY499/MOVER from the back-up tape onto disk.

```
? JOB COPY/PAHK/N-858/61200;
  DESTINAME = RJE5;
  PRIORITY = 3;
  PRELIST TAPE (B672589SURVEY499, H05876);
  BEGIN
  COPY D/PAHK/SURVEY499/MOVER
      FROM B672589SURVEY499 (KIND = PRETAPE)
      TO DISK;
  ? END JOB
```

More conveniently, we can copy as many files as we want by specifying all file names at the COPY statement we desire. If we want to copy all files on a back-up tape to disk, we may simply write "COPY D/PAHK =" instead of all file names. It is important to understand that even though we did not specify file attributes above, the file D/PAHK/SURVEY499/MOVER which is now on disk has exactly the same attributes as the original file.

Annex IV.1: Tape Directory

This tape directory provides information on the original and back-up tapes which include all data files collected for the research project. On the first page, the name of the data set, tape title, serial numbers, and creation dates are listed. The following pages show the attributes of data files included in individual tapes marked with asterisks, which are compactly packaged tapes recreated for use in the project.

The Tape Directory

<u>Data Sets</u>	<u>Original Tape</u>	<u>Back-up Tape Title</u>	<u>Serial Number</u>	<u>Creation Date</u>	<u>Files INcluded</u>
Mining & Manufacturing Survey, 73-80	F1498	BPSCZX9MFG173	24995 23870	3/26/82	1973 Small Firm Survey, 1978 Small Firm Survey, and 1973-1979 Mining & Manufacturing Survey Reel 1
	F1499	BPSCZX9MFG273	13220	3/29/82	1979-1980 Mining & Manufacturing Survey Reel 2
		BPSCZX9MFG73	25568	3/05/82	1973 Manufacturing Survey
		BPSCZX9MFG74	26168	3/05/82	1974 Manufacturing Survey
		BPSCZX9MFG75	25812	3/05/82	1975 Manufacturing Survey
		BPSCZX9MFG76	25955	3/05/82	1976 Manufacturing Survey
		BPSCZX9MFG77	20083	3/05/82	1977 Manufacturing Survey
		BPSCZX9MFG78	25408	3/05/82	1978 Manufacturing Survey
		BPSCZX9MFG79	12577	3/05/82	1979 Manufacturing Survey
		BPSCZX9MFG80	28805	3/05/82	1908 Manufacturing Survey
		* B672589MFG73TO76	H07332	9/10/85	1973-1976 Manufacturing Survey
		* B672589MFG77TO80	H06375	4/03/85	1977-1980 Manufacturing Survey
		* B672589MFGSF20	H06390	4/03/95	Subfiles of Annual Manufacturing Survey
	B672589MFG173	H01260	9/06/85	A copy of BPSCZX9MFG173	
	B672589MFG273	H01543	9/06/85	A copy of BPSCZX9MFG273	
Mining & Manufacturing Survey, 1981	F1960	* B672589MFG81	H05837	3/28/85	with 20 variables, 1973-1980 1981 Manufacturing Survey, Firm-type subfiles, and sample firms for Project Sample Establishment Survey
Project Sample Establishment Survey	F7086	* B672589SURVEY499	H05876	3/06/85	Project Sample Survey, 1st & 2nd editions Subfiles with 95 variables
		B672589SV499FINAL	H03119	7/30/85	The Final edition of Project Sample Survey
Location Census and Manufacturing Establishments, MOCI	F1887	* B672589MOCI	H05649	4/01/85	MOCI Location Census, Employment size subfiles, A bacu-up with 1977 NBS geocode system
Basic Statistics		* B672589STATICS	H02825	4/19/85	Distance, population, area, and households. Number of establishments and employees by industry in Seoul Region, 1977-1981.

Note: 1. Star marks indicate those tapes in which files are presented on the following pages.

2. The tapes that were created by D. Reedy using the old usercode BPSCZX are not accessible through the current usercode B67258. They are available only with the approval of DRD withholding the BPSCZX and password. For convenience, two tapes B672589MFG173 and B672589MFG273 have been re-created using the current usercode.

Mining and Manufacturing Survey, 1973-2980

(1) Mining and Manufacturing Survey, 1973-1976

Serial Number: H07352
Tape Title: B672589MFG73T076
Creation Date: September 10, 1985
Save Factor: 999

<u>Files Included</u>	<u>Number of Records</u>	<u>Maxrecsize</u>	<u>Blocksize</u>	<u>Comments</u>
D/REEDY/MFG73	24,881	500	3000	1973 Mining & Manufacturing Survey
D/REEDY/MFG74	24,215	500	3000	1974 Mining & Manufacturing Survey
D/REEDY/MFG75	24,229	500	3000	1975 Mining & Manufacturing Survey
D/REEDY/MFG76	26,565	500	3000	1976 Mining & Manufacturing Survey

(2) Annual Manufacturing Survey, 1977-1980

Serial Number: H06375
Tape Title: B672589MFG77T080
Creation Date: April 3, 1985
Save Factor: 365

<u>Files Included</u>	<u>Number of Records</u>	<u>Maxrecsize</u>	<u>Blocksize</u>	<u>Comments</u>
D/REEDY/MFG77/SEOUL3	7,282	500	3000	1977 Manufacturing Survey for Seoul
D/REEDY/MFG77/GYEONGGI	3,959	500	3000	1977 Manufacturing Survey for Gyeonggi
D/REEDY/MFG78/SEOUL3	7,752	500	3000	1978 Manufacturing Survey for Seoul
D/REEDY/MFG78/GYEONGGI	5,229	500	3000	1978 Manufacturing Survey for Gyeonggi
D/REEDY/MFG79/SEOUL3	8,246	500	3000	1979 Manufacturing Survey for Seoul
D/REEDY/MFG79/GYEONGGI	5,680	500	3000	1979 Manufacturing Survey for Gyeonggi
D/REEDY/MFG80/SEOUL3	7,652	500	3000	1980 Manufacturing Survey for Seoul
D/REEDY/MFG80/GYEONGGI	5,860	500	3000	1980 Manufacturing Survey for Gyeonggi

Note: UNITS = CHARACTERS

(3) Twenty Variable Subfiles, 1973-1980

Serial Number H06390
Tape Title B672589MFGSF20
Creation Date April 3, 1985
Save Factor 365

<u>Files Included</u>	<u>Number of Records</u>	<u>Maxrecsize*</u>	<u>Blocksize*</u>	<u>Comments</u>
D/CHUN/MFG73/SF20	8,269	240	1200	1973, Seoul and Gyeonggi
D/CHUN/MFG74/SF20	8,234	240	1200	1974, Seoul and Gyeonggi
D/CHUN/MFG75/SF20	8,305	240	1200	1975, Seoul and Gyeonggi
D/CHUN/MFG76/SF20	9,466	240	1200	1976, Seoul and Gyeonggi
D/CHUN/MFG77/SF20	11,241	240	1200	1977, Seoul and Gyeonggi
D/CHUN/MFG78/SF20	12,981	240	1200	1978, Seoul and Gyeonggi
D/CHUN/MFG79/SF20	13,926	240	1200	1979, Seoul and Gyeonggi
D/CHUN/MFG80/SF20	13,512	240	1200	1980, Seoul and Gyeonggi

* UNITS = CHARACTERS

MINING AND MANUFACTURING SURVEY, 1981

Serial Number H05837
Tape Title B672589MFG81
Creation Date March 28, 1985
Save Factor 365

<u>Files Included</u>	<u>Number of Records</u>	<u>Maxrecsize</u> **	<u>Blocksize</u> **	<u>Comments</u>
D/PAHK/MFG81/M100	775	80	3200	All firms with 100 or more workers
D/PAHK/MFG81/BACKUP	33,428	130	1300	1981 MFG Survey, 5 or more workers
D/PAHK/MFG81/CLEAN	33,425*	130	1300	Clean data set of above
D/PAHK/MFG81/ALLSG	15,119	130	1300	All firms in Seoul and Gyeonggi
D/PAHK/MFG81/MOVER	5,305	130	1300	All mover firms
D/PAHK/MFG81/NONMOVER	28,120	130	1300	All non-mover firms
D/PAHK/MFG81/MOVERSG	2,881	130	1300	Mover firms in Seoul and Gyeonggi
D/PAHK/MFG81/NONMOVERSG	12,238	130	1300	Non-movers in Seoul and Gyeonggi
D/PAHK/MFG81/BIRTHSG	4,352	130	1300	Birth firms in Seoul and Gyeonggi
D/PAHK/MFG81/MATURESG	7,896	130	1300	Mature firms in Seoul and Gyeonggi
D/PAHK/MFG81/RECENTMOVER	1,975	130	1300	Recent movers in Seoul and Gyeonggi
D/PAHK/MFG81/SAMPLE/BIRTH/LARGE	733	130	1300	Sample firms, Birth-large
D/PAHK/MFG81/SAMPLE/BIRTH/SMALL	1,744	130	1300	Birth-small
D/PAHK/MFG81/SAMPLE/MATURE/LARGE	1,726	130	1300	Mature-large
D/PAHK/MFG81/SAMPLE/MATURE/SMALL	2,115	130	1300	Mature-small
D/PAHK/MFG81/SAMPLE/RCTMVR/RSN1L	371	130	1300	Large recent movers by reason 1
D/PAHK/MFG81/SAMPLE/RCTMVR/RSN1S	452	130	1300	Small recent movers by reason 1
D/PAHK/MFG81/SAMPLE/RCTMVR/RSN3	84	130	1300	Recent movers by reason 3
D/PAHK/MFG81/SAMPLE/RCTMVR/RSN4	72	130	1300	Recent movers by reason 4
D/PAHK/MFG81/SAMPLE/ALL745	745	130	1300	All sample firms with 50% extra

* Three firms which were relocated after 1983 and 1984 have been removed. See page 31 for more information.

** UNITS = CHARACTERS

PROJECT'S SAMPLE ESTABLISHMENT SURVEY

Serial Number H05876
Tape Title B672589SURVEY499
Creation Date March 6, 1985
Save Factor 365

<u>Files Included</u>	<u>Number of Records</u>	<u>Maxrecsize*</u>	<u>Blocksize*</u>	<u>Comments</u>
D/PAHK/SURVEY499/ORG	8,982	80	800	Back-up of the original survey data
D/PAHK/SURVEY10/EDIT1	180	80	800	10 bad data firms
D/PAHK/SURVEY489/EDIT1	8,802	80	800	489 firms edited at 1st stage
D/PAHK/SURVEY499/EDIT1	8,982	80	800	499 firms having 1st editing
D/PAHK/SURVEY499/EDIT2	8,982	80	800	499 firms having 2nd editing
D/PAHK/SURVEY499/FINAL	499	1101	6606	Clean data set, 1 firm 1 record image
D/PAHK/SURVEY499/BIRTH	137	1101	6606	Birth firms
D/PAHK/SURVEY499/MOVER	141	1101	6606	Mover firms
D/PAHK/SURVEY499/MATURE	221	1101	6606	Mature firms
D/PAHK/SURVEY499/SUBFILE95	2,495	80	2400	Subfiles with 95 variables Each firm has five 80-column records

* UNITS = CHARACTERS

1
5
1

LOCATION CENSUS OF MANUFACTURING ESTABLISHMENT

Serial Number H05649
Tape Title B672589MOCI
Creation Date April 1, 1985
Save Factor 365

<u>Files Included</u>	<u>Number of Records</u>	<u>Maxrecsize</u> *	<u>Blocksize</u> *	<u>Comments</u>
D/PAHK/MOCI/BACKUP	18,661	160	1600	Back-up
D/PAHK/MOCI/GE5	17,783	160	1600	5 or more workers
D/PAHK/MOCI/LS5	878	160	1600	Less than 5 workers
D/PAHK/MOCI/GE5LS10	5,295	160	1600	5 or more and less than 10
D/PAHK/MOCI/GE10LS20	4,583	160	1600	10 or more and less than 20
D/PAHK/MOCI/GE20LS50	4,048	160	1600	20 or more and less than 50
D/PAHK/MOCI/GE50LS100	1,803	160	1600	50 or more and less than 100
D/PAHK/MOCI/GE100	2,054	160	1600	100 or more workers

* UNITS = CHARACTERS

BASIC STATISTICAL DATA FILE

Serial Number H02825
Tape Title B672589STATICS
Creation Date April 19, 1985
Save Factor 365

<u>Files Included</u>	<u>Number of Records</u>	<u>Maxrecsize</u> *	<u>Blocksize</u> *	<u>Comments</u>
D/PAHK/POP/AREA/DIST66**	31	84	2400	1966 population,area, distance
D/PAHK/POP/AREA/DIST70**	31	84	2400	1970 Population, area, distance
D/PAHK/POP/AREA/DIST75**	36	84	2400	1975 Population, Area, distance
D/PAHK/MFG77/SGEMP	44	84	2400	1977 employment by industry
D/PAHK/MFG78/SGEMP	46	84	2400	1978 employment by industry
D/PAHK/MFG79/SGEMP	46	84	2400	1979 employment by industry
D/PAHK/MFG80/SGEMP	46	84	2400	1980 employment by industry
D/PAHK/MFG81/SGEMP	46	84	2400	1981 employment by industry
D/PAHK/MFG77/SGEST	44	84	2400	1977 number of firms by industry
D/PAHK/MFG78/SGEST	46	84	2400	1978 number of firms by industry
D/PAHK/MFG79/SGEST	46	84	2400	1979 number of firms by industry
D/PAHK/MFG80/SGEST	46	84	2400	1980 number of firms by industry
D/PAHK/MFG81/SGEST	46	84	2400	1981 number of firms by industry
D/PAHK/DISTANCE80	45	50	1000	1980 distance from CBD
D/PAHK/STATISTICS	48	100	1000	1980 area, population, households etc.

* UNITS = CHARACTERS

** In the order of appearance, region, population, area, distance in the format(A12,2X,I7,2F7.2)

Annex IV.2 : Record Layout

1. Mining and Manufacturing Survey, 1973-1980
2. Mining and Manufaxturing Survey, 1973-1980
(For Twenty-Variable Subfiles)
3. Mining and Manufacturing Survey, 1981
4. Mining and Manufacturing Survey, 1981
(For Statified Sample files)
5. Project Sample Establishment Survey
6. Location Census of Manufacturing Establishments

1. MINING AND MANUFACTURING SURVEY, 1973-1980

<u>Var. No.</u>	<u>Format</u>	<u>Columns</u>	<u>Variable Description</u>	<u>Code or Range</u>
1.	I2	1 - 2	Year of survey.	73-80
2.	I6	3 - 8	Geocode (Administrative Units: Special City or Province = cols 3, 4; City, Gu, or Gun = cols 5, 6; Dong, Eup, or Myeon = cols 7, 8).	1100nn-3932nn (See the publication on the Classification of Administrative Units.)
	IX	9	Blank.	
3.	I5	10 - 14	Establishment ID number.	1 - n
4.	I5	15 - 19	Industry code.	210nn-390nn (See the published Standard Industrial Code
5.	I2	20 - 21	Year founded.	0 - 99
6.	I13	22 - 34	Lot size in planned district (Pyung). <u>1/</u>	0 - 3,000,000
7.	I13	35 - 47	Lot size in unplanned district (Pyung). <u>2/</u>	0 - 3,000,000
8.	I13	48 - 60	Building space (Pyung). <u>1/</u>	0 - 500,000

1/ Information of lot size and building space is available only for 1977 - 1980.

2/ The distinction between planned and unplanned districts was made for the 1978 census only.

For other years, information of total lot size is stored in columns 22-34; accordingly, columns 35-47 are blank for these years.

<u>Var. No.</u>	<u>Format</u>	<u>Columns</u>	<u>Variable Description</u>	<u>Code or Range</u>
9.	I13	61 - 73	Amount of capital investment (1000 Won)	0-100,000,000+
10.	I7	74 - 80	Total number of owners and unpaid workers at the end of December.	0 - 60
11.	I7	81 - 87	The number of male owners and unpaid workers at the end of December.	0 - 40
12.	I7	88 - 94	The number of female owners and unpaid workers at the end of December.	0 - 19
13.	I7	95 - 101	Total number of production workers	
14.	I7	102 - 108	The number of male production workers at the end of December.	0 - 5000+
15.	I7	109 - 115	The number of female production workers at the end of December.	0 - 5000+
16.	I7	116 - 122	Total number of office and other workers at the end of December.	0 - 5000
17.	I7	123 - 129	The number of male office and other workers at the end of December.	0 - 4000
18.	I7	130 - 136	The number of female office and other workers at the end of December.	0 - 2000
19.	I7	137 - 143	Monthly work days of production workers in December.	0 - 31

<u>Var. No.</u>	<u>Format</u>	<u>Columns</u>	<u>Variable Description</u>	<u>Code or Range</u>
20.	I7	144 - 150	Average monthly labor input of production workers (minutes). <u>1/</u>	0 - 6000
21.	I13	151 - 163	Annual wage bill of production workers (1000 Won)	0 - 100,000,000
22.	I13	164 - 176	Amount of annual bonus paid to the production workers (1000 Won). <u>2/</u>	0 - 100,000,000
23.	I13	177 - 189	Annual wage bill of office and other workers (1000 Won).	0 - 100,000,000
24.	I13	190 - 202	Amount of annual bonus paid to the office and other workers (1000 Won). <u>2/</u>	0 - 3,000,000
25.	I13	203 - 215	Value of annual shipment of products (1000 Won).	0 - 100,000,000+
26.	I13	216 - 228	Value of finished goods inventory at the beginning of the year (1000 Won).	0 - 100,000,000
27.	I13	229 - 241	Value of finished goods inventory at the end of the year (1000 Won).	0 - 100,000,000
28.	I13	242 - 254	Amount of annual purchase of electricity (KWH). <u>3/</u>	0 - 3,000,000
			<u>Variables of Fixed Tangible Assets at the end of the year. <u>4/</u></u>	
29.	I13	255 - 267	Value of the lot (1000 Won).	0 - 100,000,000
30.	I13	268 - 280	Value of the building (1000 Won). <u>5/</u>	0 - 100,000,000

1/ Available only for 1977 - 1979.

2/ Available only for 1980. For other years, wage bill includes bonus paid.

3/ Not available for 1977, 1979, and 1980.

4/ Available only for 1977 - 1980.

5/ The distinction between building and structure was made for the 1978 census only. For other years, information of total value of the building and structure is stored in columns 268-280; accordingly, columns 281-293 are blank for these years.

<u>Var. No.</u>	<u>Format</u>	<u>Columns</u>	<u>Variable Description</u>	<u>Code or Range</u>
31.	I13	281 - 293	Value of the structure (1000 Won).	0 - 1,000,000
32.	I13	294 - 306	Value of machinery and facilities (1000 Won).	0 - 100,000,000+
33.	I13	307 - 319	Value of tools and other equipment (1000 Won). ^{1/}	0 - 100,000,000+
34.	I13	320 - 332	Annual amount of self-generated electricity (EWH). ^{2/}	0 - 100,000,000+
			<u>Variables of water used by source of water. ^{3/}</u>	
35.	I13	333 - 345	Amount of industrial water used per day (m ³).	0 - 15,000+
36.	I13	345 - 358	Amount of piped water used per day (m ³).	0 - 15,000+
37.	I13	359 - 371	Total amount of water used per day (m ³).	
38.	I13	372 - 384	Total value of production (1000 Won).	0 - 100,000,000+
39.	I13	385 - 397	Total value (1000 Won).	0 - 100,000,000+
40.	I1	398	Type of production ^{4/}	1=production for market 2=production by order 3=production by export

^{1/} Available only for 1978. For other years, machinery and facilities includes tools and equipment.
^{2/} Available only for 1978.
^{3/} Available only for 1978.
^{4/} Available only for 1979.

<u>Var. No.</u>	<u>Format</u>	<u>Columns</u>	<u>Variable Description</u>	<u>Code or Range</u>
			<u>Types of Pollution Generated.</u> ^{1/}	
41.	I1	399	Air	0=pollution not generated 1=air pollution generated
42.	I1	400	Water	2=water pollution generated
43.	I1	401	Noise	3=noise pollution generated
44.	I1	402	Bad smell	4=bad smell generated
45.	I1	403	Not applicable	5=not applicable
			<u>Facilities to Prevent Pollution.</u> ^{1/}	
46.	I1	404	All facilities	0=not applicable
47.	I1	405	Some facilities	1=has all facilities
48.	I1	406	No facilities	2=has some facilities 3=no facilities
49.	I9	407 - 415	Amount of investment for the facilities (1000 Won).	0-1000,000,000+

^{1/} Available only for 1979.

<u>Var. No.</u>	<u>Format</u>	<u>Columns</u>	<u>Variable Description</u>	<u>Code or Range</u>
50.	I1	416	Size categories of the establishment. <u>1/</u>	1=large 2=small and medium
<u>Variables of Employment of Skilled Workers. <u>2/</u></u>				
51.	I9	417 - 425	Total number of production workers.	0 - 5000+
52.	I9	426 - 434	Number of skilled workers.	0 - 3000
53.	I9	435 - 443	Number of technicians with license.	0 - 3000
54.	I9	444 - 452	Number of technicians without license.	0 - 5000+
55.	I9	453 - 461	Number of apprentices.	0 - 5000+
56.	I9	462 - 470	Others.	0 - 5000+
<hr/>				
57.	I9	471 - 479	Total value of annual export (1000 dollars). <u>3/</u>	0 - 4000,000
58.	I13	480 - 492	Number of average employees	0 - 5000+
		493 - 500	Blank	

1/ Available only for 1979 - 1980.

2/ Available only for 1979.

3/ Available only for 1979 - 1980.

2. MINING AND MANUFACTURING SURVEY, 1973-1980

(For Twenty Variable Subfiles)

<u>Var.No</u>	<u>Format</u>	<u>Columns</u>	<u>Variable Description</u>	<u>Code and Range</u>
1	I2	1-2	Year of survey	73 - 80
2	I6	3-8	Geocode(present location)	1100nn - 3932nn
3	I5	9-13	Establishment ID number	
4	I5	14-18	Industry code	3lenn - 39enn
5	I2	19-20	Year founded	
6	I13	21-33	Lot size in planned district	In Pyeong
7	I13	34-46	Lot size in unplanned district	In Pyeong
8	I13	47-59	Building space	In Pyeong
9	I7	60-66	Total number of owners and unpaid workers	
10	I7	67-73	Number of production workers	
11	I7	74-80	Number of office workers	
12	I13	81-93	Annual wage bill of production workers	In 1000 Won
13	I13	94-106	Annual wage bill of office workers	In 1000 Won
14	I13	107-119	Value of lot	In 1000 Won
15	I13	120-132	Value of the building	In 1000 Won
16	I13	133-145	Value of the structure	In 1000 Won
17	I13	146-158	Value of machinery and facilities	In 1000 Won
18	I13	159-171	Value of tools and equipment	In 1000 Won
19	I13	172-184	Total value of production	In 1000 Won
20	I13	185-197	Total value added	In 1000 Won

Note: Refer to the record layout of the original survey file appended previously for more detailed variable description

3. MINING AND MANUFACTURING SURVEY, 1981

<u>Var.No</u>	<u>Format</u>	<u>Columns</u>	<u>Variables Description</u>	<u>Code or Range</u>
1	I2	1-2	Year of survey	8I
2	I7	3-9	Establishment ID number	
3	I6	10-15	Geocode(present location)	1100nn-3932nn
4	I5	16-20	Standard Industry Code	31nnn-39nnn
5	I1	21	Relocation classification(RC)	0=non-mover 1=moved within same Si or Do 2=moved to other Si or Do
6	I4	22-25	Previous location	1111-3932
7	I2	26-27	Year of foundation	YY
8	I6	28-33	Date of relocation	YYMMDD
9	I1	34	Reason for relocation	1=voluntary, 2=agglomeration, 3=government incentives, 4=government orders, 5=land expropriation, 6=miscellaneous
10	I8	35-42	Total number of owners	
11	I8	43-50	Number of male owners	
12	I8	51-58	Number of female owners	
13	I8	59-66	Total number of production workers	
14	I8	67-74	Number of male production workers	
15	I8	75-82	Number of female production workers	
16	I8	83-90	Total number of office workers	
17	I8	91-98	Number of male office workers	
18	I8	99-106	Number of female office workers	
19	I8	107-114	Total number of workers	
20	I8	115-122	Total number of male workers	
21	I8	123-130	Total number of female workers	

4. MINING AND MANUFACTURING SURVEY, 1981
(For Stratified Sample Files)

<u>Var.No</u>	<u>Format</u>	<u>Columns</u>	<u>Variable description</u>	<u>Code, Unit or Range</u>
1	A2	1-2	Star mark(*) indicating extra sample	
2	I7	3-9	Establishment ID number	
3	I6	10-15	Geocode(present location)	1100nn-3150nr
4	I5	16-20	Standard industry code(SIC)	31nnn-39nnn
5	I8	21-28	Total number of employees	
6	I1	29	Relocation classification	0=non-movers 1=moved within same Si or Do 2=moved to different Si or Do
7	I4	30-33	Previous location	1100 -3150
8	I2	34-35	Year founded	
9	I6	36-41	Date of relocation	YYMMDD
10	I1	42	Reason for relocation	1=voluntary, 2=agglomeration, 3=government incentives 4=government orders 5=land expropriation 6=miscellaneous
11	I10	43-52	Total number of owners	
12	I10	53-62	Number of production workers	
13	I10	63-72	Number of office workers	
14	I10	73-82	Number of male workers	
15	I10	83-92	Number of female workers	

5. Project Sample Establishment Survey

CARD 1: General Information on Plant and Headquarter

<u>Variable #</u>	<u>Format</u>	<u>Columns</u>	<u>Variable Description</u>	<u>Code or range</u>
1	I7	1-7	Establishment NBS ID number	
2	I7	8-14	Telephone number	
3	I4	15-18	Geocode of present location	See geocodes of Appendix 2
4	I1	19	Type of plant operation-single or multiple	1 = single plant 2 = headquarter of multi-plants 3 = branch of multi-plants
5	I7	20-26	Telephone number of headquarter	
6	I4	27-30	Geocode of headquarter	See geocodes of Appendix 2
7	I2	31-32	Number of plants	
8-10	3I4	33-34	Geocodes of plant locations in Seoul	See geocodes of Appendix 2
11-13	3I4	45-56	Geocodes of plant locations in Gyeonggi	See geocodes of Appendix 2
14-16	3I4	57-68	Geocodes of other plants location	See geocodes of Appendix 2
17	I1	69	Multi-plant management strategy	1 = to specialize in products 2 = to cover specific markets 3 = to specialize in special aspects 4 = other
18	I2	70-71	Year founded	
19	I2	72-73	Year relocated in the present location	

<u>Variable #</u>	<u>Format</u>	<u>Columns</u>	<u>Variable Description</u>	<u>Code or range</u>
20	I1	74	Firm type (movers, mature and birth, etc.)	1 = mature 2 = birth 3 = mover from Seoul or Gyeonggi 4 = mover from outside of Seoul or Gyeonggi

CARD 2: Information on Products and Space

21-23	3I4	75-78	Products manufactured (SIC)	See Standard Industry Codes of Appendix 3
24	I1	87	Type of production process	1 = simple assembly-line 2 = multi-products 3 = combination of 1 and 2 4 = other
25	I6	88-93	Land space rented (Pyeong)	
26	I6	94-99	Land space owned (Pyeong)	
27	I6	100-105	Building space rented (Pyeong)	
28	I6	106-111	Building space owned (Pyeong)	
29	I6	112-117	Office space (Pyeong)	
30	I3	118-120	Proportion of land occupied by buildings (%)	0-100%
31	I7	121-127	Current price of lot per Pyeong (1000 Won)	
32	I6	128-133	Annual rental of building (1000 Won)	
33	I6	134-139	Annual rental of land (1000 Won)	
34	I2	140-141	Age of main building	
35	I1	142	Land reserved for expansion in plant side	1 = sufficient, 2 = modest, 3 = insufficient, 4 = none,

<u>Variable #</u>	<u>Format</u>	<u>Columns</u>	<u>Variable Description</u>	<u>Code or range</u>
36	II	143	Land reserved for expansion near plant	Same as variable 35
37	II	144	Number of floors of building	1 = one, 2 = two, 3 = three, 4 = four or more, 5 = various floors
<u>CARD 3: Information on Warehouse and Employment</u>				
			<u>Location of Warehouse</u>	
38	II	145	Storage for products	1 = indoor, 2 = outdoor
39	II	146	Storage for raw materials	Same as above
40	II	147	Location of warehouse (1)	1 = in plant site, 2 = in Seoul 3 = in Gyeonggi, 4 = other
41	I5	148-152	Warehouse space in the plant site (Pyeong)	
42	II	153	Location of warehouse (2)	Same as variable 40
43	I3	154-156	Distance to the warehouse (km)	
44	II	157	Location of warehouse (3)	Same as variable 40
45	I3	158-160	Distance to the warehouse (km)	
46	II	161	Location of warehouse (4)	Same as variable 40
47	I3	162-164	Distance to the warehouse (km)	
			<u>Employment of Full-time Workers</u>	
48	I5	165-169	Number of male office workers	
49	I5	170-174	Number of female office workers	
50	I5	175-179	Number of skilled male workers	

<u>Variable #</u>	<u>Format</u>	<u>Columns</u>	<u>Variable Description</u>	<u>Code or range</u>
51	I5	180-184	Number of skilled female workers	
52	I5	185-189	Number of unskilled male workers	
53	I5	190-194	Number of unskilled female workers	
54	I5	195-199	Total number of male employees	
55	I5	200-204	Total number of female employees	
			<u>Employment of Part-time Workers</u>	
56	I5	205-209	Number of part-time male workers	
57	I5	210-214	Number of part-time female workers	

CARD 4: Employees' Salary, Residence Location and Commuting Modes

58	I5	215-219	Maximum number of workers when fully operating	
			<u>Employees' Salary</u>	
59	I7	220-226	Monthly salary of skilled workers (Won)	
60	I7	227-233	Monthly salary of unskilled workers (Won)	
61	I1	234	Number of shifts	1 = once, 2 = twice, 3 = three times
62	I3	235-237	Percent of unionized employees	
			<u>Employees' Residence Location</u>	
63	I3	238-240	Percent of office workers in dormitory	0 - 100%
64	I3	241-243	Percent of production workers in dormitory	
65	I3	244-246	Percent of office workers in neighborhood	
66	I3	247-249	Percent of production workers in neighborhood	

<u>Variable #</u>	<u>Format</u>	<u>Columns</u>	<u>Variable Description</u>	<u>Code or range</u>
67	I3	250-252	Percent of office workers in same city	
68	I3	253-255	Percent of production workers in same city	
69	I3	256-258	Percent of office workers in adjacent city	
70	I3	262-264	Percent of production workers in adjacent city	
71	I3	262-264	Percent of office workers in other cities	
72	I3	265-267	Percent of production workers in other cities	
			<u>Employees' Commuting Modes</u>	
73	I3	268-270	Percent of employees in dormitory	0 - 100%
74	I3	271-273	Percent of employees walking to work	
75	I3	247-276	Percent of employees commuting by bicycle	
76	I3	277-279	Percent of employees commuting by bus	
77	I3	280-282	Percent of employees commuting by subway	

CARD 5: Shipment Modes and Product Destination

78	I3	283-285	Percent of employees commuting by company vehicles	0 - 100%
79	I3	286-288	Percent of employees commuting by private car	
80	I3	289-291	Percent of employees commuting by subway & bus	
			<u>Product Shipment Modes</u>	
81	I3	292-294	Percent of products shipped by truck	0 - 100%
82	I3	295-297	Percent of products shipped by rail	
83	I3	298-300	Percent of products shipped by truck and rail	

<u>Variable #</u>	<u>Format</u>	<u>Columns</u>	<u>Variable Description</u>	<u>Code or range</u>
84	I3	301-303	Percent of products shipped by truck and water	
85	I3	304-306	Percent of products shipped by air	
86	I3	307-309	Percent of products shipped by other means	
			<u>Raw Material Shipment Modes</u>	
87	I3	310-312	Percent of raw materials shipped by truck	0 - 100 %
88	I3	313-315	Percent of raw material shipped by rail	
89	I3	316-318	Percent of raw materials shipped by truck and rail	
90	I3	319-321	Percent of raw materials shipped by truck and water	
91	I3	322-324	Percent of raw materials shipped by air	
92	I3	325-327	Percent of raw materials shipped by other means	
93	I3	328-330	Distance to the nearest railroad station (km)	
94	I1	331	Nearest road used by truck	1-9, See V94 of Appendix 1
95	I1	332	Nearest interchange on Kyeongbu highway	1-7, See V95 of Appendix 1
96	I3	333-334	Distance to the interchange on Kyeongbu highway (km)	
97	I1	335	Nearest interchange on Kyeong in highway	1-5, See V97 of Appendix 1
98	I3	336-337	Distance to the interchange on Keyong in highway (Km)	
99	I1	338	Nearest interchange on other highway	1-4, See V99 of Appendix 1
100	I3	339-340	Distance to the interchange on others (km)	
			<u>Product Destination</u>	
101	I3	341-343	Percent of products sold in Seoul	0 - 100%

<u>Variable #</u>	<u>Format</u>	<u>Columns</u>	<u>Variable Description</u>	<u>Code or range</u>
102	I3	344-346	Percent of products sold in Gyeonggi	
103	I3	347-349	Percent of products sold outside Seoul and Gyeonggi	
104	I3	350-352	Percent of products exported	
<u>CARD 6: Product Delivery and Raw Material Origin</u>				
<u>Product Shipment Location and Distance</u>				
105	I4	353-356	Geocode of product shipment location (1)	See geocodes of Appendix 2
106	I3	357-359	Distance to the product shipment location (km)	
107	I4	360-363	Geocode of product shipment location (2)	See geocodes of Appendix 2
108	I3	364-366	Distance to the product shipment location (km)	
109	I4	367-370	Geocode of product shipment location (3)	See geocodes of Appendix 2
110	I3	371-373	Distance to the product shipment location (km)	
111	I4	374-377	Geocode of product shipment location (4)	See geocodes of Appendix 2
112	I3	378-380	Distance to the product shipment location (km)	
113	I4	381-384	Geocode of product shipment location (5)	See geocodes of Appendix 2
114	I3	385-387	Distance to the product shipment location (km)	
<u>Products as Input of Other Industries</u>				
115	I1	388	Percent of products used as input of other industries	
116-118	3I4	389-400	Industries using product as input	See Standard Industry Codes of Appendix 3

<u>Variable #</u>	<u>Format</u>	<u>Columns</u>	<u>Variable Description</u>	<u>Code or range</u>
			<u>Raw Material Origin</u>	
119	I3	401-403	Percent of raw materials coming from Seoul	
120	I3	404-406	Percent of raw materials coming from Gyeonggi	
121	I3	407-409	Percent of raw materials coming from other area	
122	I3	410-412	Percent of raw materials imported	

CARD 7: Raw Material Delivery and Public Services

			<u>Raw Material Delivery Location and Distance</u>	
123	I4	413-416	Geocode of raw material delivery location (1)	See geocodes of Appendix 2
124	I3	417-419	Distance to the location (km)	
125	I4	420-423	Geocode of raw material delivery location (2)	See geocodes of Appendix 2
126	I3	424-426	Distance to the location (km)	
127	I4	427-430	Geocode of raw material delivery location (3)	See geocodes of Appendix 2
128	I3	431-433	Distance to the location (km)	
129	I4	434-437	Geocode of raw material delivery location (4)	See geocodes of Appendix 2
130	I3	438-440	Distance to the location (km)	
131	I4	441-444	Geocode of raw material delivery location (5)	See geocodes of Appendix 2
132	I3	445-447	Distance to the location (km)	
			<u>Input as Output of Other Industries</u>	
133	I1	448	Percent of input using as output of other industries	1 = 0%, 2 = 1-20%, 3 = 21-40%, 4 = 41-60%, 5 = 61-80%, 6 = 81-99%, 7 = 100%

<u>Variable #</u>	<u>Format</u>	<u>Columns</u>	<u>Variable Description</u>	<u>Code or range</u>
134-136	3I4	449-460	Industries supplying input	See Standard Industry Codes
137-139	3I1	461-463	Three main commuting problems of employees	1-7, see V137 of Appendix 1
			<u>Public Services</u>	
140	I1	464	Quantity of electricity needed	1 = much, 2 = not much, 3 = little, 4 = almost nothing
141	I1	465	Quantity of industrial water needed	Same as variable 140
142	I1	466	Quantity of telephone use	Same as variable 140
143	I1	467	Quantity of telegraph use	Same as variable 140
144	I1	468	Frequency of electricity interruption	1 = almost never, 2 = once a month, 3 = once a week, 4 = twice a week 5 = twice or more a week
145	I1	469	Frequency of industrial water interruption	Same as variable 144
146	I1	470	Do you have self-generated electricity?	1 = yes, 0 = no
147	I1	471	Do you have self-supplied industrial water?	1 = yes, 0 = no
148	I1	472	Fire protection facility	1 = good, 2 = fair, 3 = insufficient, 4 = poor
149	I1	473	Telephone service facility	Same as variable 148
150	I1	474	Telegraph service facility	Same as variable 148
151	I3	475-477	Wastes disposal by firm itself	0 - 100%
152	I3	478-480	Wastes disposal by local government	0 - 100%
153	I3	481-483	Wastes disposal by service corps	0 - 100%
154	I3	484-486	Wastes disposal by other methods	0 - 100%

<u>Variable #</u>	<u>Format</u>	<u>Columns</u>	<u>Variable Description</u>	<u>Code or range</u>
155	I1	487	Opinion on the wastes disposal by local government	Same as variable 148
<u>CARD 8: Public services, Taxes and Growth Expectation</u>				
156	I3	488-490	Waste water treated by Firm itself	0 - 100%
157	I3	491-493	Waste water treated by groups	0 - 100%
158	I3	494-496	Waste water treated by local government	0 - 100%
159	I3	497-499	Waste water treated by Firm and local govt.	0 - 100%
160	I3	500-502	Waste water treated by other methods	0 - 100%
161	I1	503	Opinion on the waste water treated by local government	Same as variable 148
162-164	3I1	504-506	Type of pollutions generated by operating	1 = air, 2 = water, 3 = noisy, 4 = odor, 5 = soil, 6 = other, 7 = none
165	I1	507	Facilities to prevent pollutions generated	1 = excellent, 2 = poor 3 = nothing, 4 = modest
166	I1	508	Did you receive restrictions from government due to pollutions?	1 = yes, 0 = no
167	I1	509	Type of the government restrictions	1 = induce to change product line 2 = induce to produce pollution preventing facility 3 = order to move, 4 = fines, 5 = education program
168	I1	510	Government support for facility of pollution prevention	1 = yes, 0 = no
169	I7	511-517	Amount of subsidy for the facility (Won)	
170	I3	518-520	Percent of subsidy to total cost for the facility	0 - 100%

<u>Variable #</u>	<u>Format</u>	<u>Columns</u>	<u>Variable Description</u>	<u>Code or range</u>
			<u>Taxes</u>	
171	I6	521-526	Annual property tax for building (1000 Won)	
172	I6	527-532	Annual property tax for land (1000 Won)	
173	I1	533	Opinion on the property taxes	1 = too much, 2 = considerable, 3 = little
174-176	3I2	534-539	Taxes affecting business	1-14, see VI74 of Appendix 1
			<u>Business Expectation</u>	
177	I1	540	Change in output during last five years	1 = decreased, 2 = unchanged, 3 = increased
178	I3	541-543	Annual growth rate of output during last five years (%)	
179	I1	544	Changes in products during last five years	1 = no fundamental change 2 = new product lines 3 = new products of same line 4 = complete change in products and line
180	I1	545	Expected growth rate after five years	1 = increase greatly 2 = increase considerably 3 = increase slightly 4 = same level as today 5 = decrease, 6 = no prospect

CARD 9: Annual Shipment and Costs

181	I7	546-552	Annual shipment - export (Million Won)
182	I7	553-559	Annual shipment - domestic (Million Won)
183	I7	560-566	Annual input cost (Million Won)
184	I7	567-573	Annual wage bill (Million Won)
185	I10	574-583	Annual transportation cost (1000 Won)
186	I10	584-593	Annual electricity cost (1000 Won)

<u>Variable #</u>	<u>Format</u>	<u>Columns</u>	<u>Variable Description</u>	<u>Code or range</u>
187	I10	594-603	Annual industrial water cost (1000 Won)	
188	I7	604-610	Replacement value of plant and equipment (Million Won)	

CARD 10: Evaluation on Present Location -- Degree of Satisfaction

189	I1	611	Plant capacity - lot	1 = very satisfied, 2 satisfied, 3 = not satisfied
190	I1	612	Plant capacity - building	Same as variable 189
191	I1	613	Rent payment	Same as variable 189
192	I1	614	Availability of skilled workers	Same as variable 189
193	I1	615	Cost of skilled workers	Same as variable 189
194	I1	616	Availability of unskilled workers	Same as variable 189
195	I1	617	Cost of unskilled workers	Same as variable 189
196	I1	618	Cost of public services	Same as variable 189
197	I1	619	Quality of public services	Same as variable 189
198	I1	620	Proximity to suppliers	Same as variable 189
199	I1	621	Proximity to clients	Same as variable 189
200	I1	622	Proximity to competitors	Same as variable 189
201	I1	623	Highway accessibility	Same as variable 189
202	I1	624	Railroad accessibility	Same as variable 189
203	I1	625	Lot expandability	Same as variable 189

<u>Variable #</u>	<u>Format</u>	<u>Columns</u>	<u>Variable Description</u>	<u>Code or range</u>
204	I1	626	Cost of lot for expansion	Same as variable 189
205	I1	627	Proximity to business services	Same as variable 189
206	I1	628	Property tax	Same as variable 189
207	I1	629	Service of local government	Same as variable 189
208	I1	630	Cost of service of local government	Same as variable 189
209	I1	631	Security	Same as variable 189
210	I1	632	Amenity of environment	Same as variable 189
211	I1	633	Recreation facilities	Same as variable 189
212	I1	634	Community attitudes	Same as variable 189

CARD 11: Changes Made after Relocation

213	I4	635-638	Geocode of previous location	See geocodes of Appendix 2
214	I3	639-641	Distance to the previous location (km)	
215	I1	642	Condition of the plant before move	1 = good, but congested 2 = good, but obsolete 3 = acceptable, 4 = unusable
216	I1	643	Changes of facilities after relocation	1 = allnew, 2 = partially new, 3 = old
217	I1	644	<u>Comparisons of Before and After Relocation</u> Change in output	0 = no change, 1 = increase, 2 = decrease
218	I3	645-647	Change rate in output (%)	
219	I1	648	Change in plant space	Same as variable 217

<u>Variable #</u>	<u>Format</u>	<u>Columns</u>	<u>Variable Description</u>	<u>Code or range</u>
220	I3	649-651	Change rate in plant space (%)	
221	I1	652	Change in building space	Same as variable 217
222	I3	653-655	Change rate in building space (%)	
223	I1	656	Change in rent	Same as variable 217
224	I3	657-659	Change rate in rent (%)	
225	I1	660	Change in skilled workers	Same as variable 217
226	I3	661-663	Change rate in skilled workers (%)	
227	I1	664	Change in skilled workers' wages	Same as variable 217
228	I3	665-667	Change rate in skilled worker's wages (%)	
229	I1	668	Change in unskilled workers	Same as variable 217
230	I3	669-671	Change rate in unskilled workers (%)	
231	I1	672	Change in unskilled workers' wages	Same as variable 217
232	I3	673-675	Change rate in unskilled workers' wages (%)	
233	I1	676	Change in office workers' commuting distance	Same as variable 217
234	I3	677-679	Change rate in officer workers' commuting distance (%)	
235	I1	680	Change in production workers' commuting distance	Same as variable 217
236	I3	681-683	Change rate in production workers' commuting distance (%)	
237	I1	684	Change in product delivery distance	Same as variable 217
238	I3	685-687	Change rate in product delivery distance (%)	

<u>Variable #</u>	<u>Format</u>	<u>Columns</u>	<u>Variable Description</u>	<u>Code or range</u>
239	I1	688	Change in input delivery distance	Same as variable 217
240	I3	689-691	Change rate in input delivery distance (%)	
241	I1	692	Change in local taxes	Same as variable 217
242	I3	693-695	Change rate in local taxes (%)	
243	I1	696	Change in profits	Same as variable 217
244	I3	697-699	Change rate in profits (%)	
245	I1	700	Change in public service cost	Same as variable 217
246	I3	701-703	Change rate in public service cost (%)	

CARD 12: Changes in Public Services after Move, Relocation Factors

247	I1	704	Change in electricity	1 = very improved, 2 = slightly improved 3 = no change, 4 = worse
248	I1	705	Change in industrial water	Same as variable 247
249	I1	706	Change in telephone service	Same as variable 247
250	I1	707	Change in telegraph service	Same as variable 247
251	I1	708	Change in fire fighting facility	Same as variable 247
252	I1	709	Change in police service	Same as variable 247
253	I1	710	Change in wastes disposal	Same as variable 247
254	I1	711	Change in road maintenance	Same as variable 247
255	I1	712	Change in sewerage service	Same as variable 247

<u>Variable #</u>	<u>Format</u>	<u>Columns</u>	<u>Variable Description</u>	<u>Code or range</u>
256	I1	713	Reason for relocation	1 = order to move, 2 = government incentives 3 = for business
257-261	5I2	714-723	Five factors important for relocation site	1-35, See V257 of Appendix 1
262	I1	724	Did you consider an alternative plant site?	1 = yes, 0 = no
263	I4	725-728	Geocode of alternative plant site considered (1)	See geocodes of Appendix 2
264	I1	729	Reason for not taken above plant site	1-8, see V264 of Appendix 1
265	I4	730-733	Geocode of alternative plant site considered (2)	See geocodes of Appendix 2
266	I1	734	Reason for not taken above plant site	Same as variable 264
267	I4	735-738	Geocode of alternative plant site considered (3)	See geocode of Appendix 2
268	I1	739	Reason for not taken above plant site	Same as variable 264
			<u>Employee's Move and Benefits</u>	
269	I3	740-742	Percent of workers stayed after relocation	0 - 100%
270	I3	743-745	Percent of workers moved after relocation within one year	0 - 100%
271	I3	746-748	Percent of workers moved after relocation -- current	0 - 100%
272-274	3I1	749-751	Housing aids for employees moved	1-8, see V272 of Appendix 1
275-277	3I1	752-754	Benefits for employes moved	1-8, see V275 of Appendix 1
278-280	3I1	755-757	Unavoidable reasons relocated to present site	1-8. see V278 of Appendix 1
281	I1	758	Did you receive a loan for expansion after relocation?	1 = yes, 0 = no
282	I3	759-761	Percent of the loan to total capital investments	0 - 100%
283	I3	762-764	Interest rate of the loan (%)	

<u>Variable #</u>	<u>Format</u>	<u>Columns</u>	<u>Variable Description</u>	<u>Code or range</u>
284	I2	765-766	Grace period of the loan (year)	
285	I2	767-768	Terms of the redemption of the loan (year)	
286	I1	769	Loan possibility for other location?	1 = yes, 2 = no
287	I3	770-772	Expected interest rate of the possible loan (%)	

CARD 14: Changes in Taxes after Relocation

288	I1	773	Change in corporate tax after relocation	1 = tax exemption, 2 = tax reduction, 3 = unchange, 4 = tax increase
289	I3	774-776	Corporate tax rate	
290	I1	777	Change in added-value tax after relocation	Same as variable 288
291	I3	778-780	Added-value tax rate	
292	I1	781	Change in defence tax after relocation	Same as variable 288
293	I3	782-784	Defence tax rate	
294	I1	785	Change in property tax after relocation	Same as variable 288
295	I3	786-788	Property tax rate	
296	I1	789	Change in acquisition tax after relocation	Same as variable 288
297	I3	790-792	Acquisition tax rate	
298	I1	793	Change in registration tax after relocation	Same as variable 288
299	I3	794-796	Registration tax rate	
300	I1	797	Investment tax credit?	1 = yes, 0 = no

<u>Variable #</u>	<u>Format</u>	<u>Columns</u>	<u>Variable Description</u>	<u>Code or range</u>
301	I1	798	Special depreciation credit?	Same as above
302	I3	799-801	Percent of the investment tax credit	
303	I2	802-803	Period of the investment tax credit	
304	I3	804-806	Percent of the special depreciation credit	
305	I2	807-808	Period of the special depreciation credit	
306	I7	809-815	Purchasing price of land per Pyeong (Won)	
307	I7	816-822	Neighboring land price per Pyeong (Won)	
308	I1	823	Government benefits for employees moved?	1 = yes, 0 = no
309	I2	824-825	Type of the benefits for employees moved (1)	1 = housing loan 2 = exemption of capital gains tax 3 = priority of apartment allotment 4 = other
310	I3	826-828	Percent of the total for above benefit	
311	I2	829-930	Type of the benefits for employees moved (2)	Same as variable 309
312	I3	831-833	Percent of the total for above benefit	
313	I2	834-835	Type of the benefits for employees moved (3)	Same as variable 309
314	I3	836-838	Percent of the total for above benefit	
315	I2	839-840	Type of the benefits for employees moved (4)	Same as variable 309
316	I3	841-843	Percent of the total for above benefit	

<u>Variable #</u>	<u>Format</u>	<u>Columns</u>	<u>Variable Description</u>	<u>Code or range</u>
<u>CARD 14: Government Benefits and Policies for Movers</u>				
317	I1	844	Did you benefit government subsidy for relocating?	1 = yes, 0 = no
318	I1	845	Did you benefit exemption of capital gains tax for relocating?	1 = yes, 0 = no
319	I3	846-848	Percent of the exemption to total capital gains	
320	I1	849	Did you receive other benefits when relocating?	1 = yes, 0 = no
321	I2	850-851	Type of the benefits (1)	1 = subsidy for promoting small and medium firms 2 = housing loan 3 = subsidy for pollution preventing facilities 4 = other
322	I3	852-854	Interest rate (1)	
323	I2	855-856	Period of the benefits (1)	
324	I2	857-858	Type of the benefits (2)	Same as variable 321
325	I3	859-861	Interest rate (2)	
326	I2	862-863	Period of the benefits (2)	
327	I2	864-865	Type of the benefits (3)	Same as variable 321
328	I3	866-868	Interest rate (3)	
329	I2	869-870	Period of the benefits (3)	
330	I2	871-872	Type of the benefits (4)	Same as variable 321
331	I3	873-875	Interest rate (4)	
332	I2	876-877	Period of the benefits (4)	

<u>Variable #</u>	<u>Format</u>	<u>Columns</u>	<u>Variable Description</u>	<u>Code or range</u>
333-337	5I2	878-887	Five important government policies affecting relocation	1-11, See V333 of Appendix 1
<u>CARD 15: Plan for Expansion</u>				
338	I1	888	Do you have a plan to expand within the next five years?	1 = yes, 0 = no
339	I1	889	Area for expansion	1 = in plant site, 2 = in Seoul, 3 = in Gyeonggi, 4 = others,
340	I4	890-893	Geocode of the area for expansion	See geocodes of Appendix 2
341	I4	894-897	Additional employees after expansion	
342	I5	898-902	Additional building space after expansion (Pyeong)	
343	I1	903	Do you have a plan to move within the next five years?	1 = yes, 0 = no
344	I1	904	Area to be relocated	1 = in Seoul, 2 = in Gyeonggi, 3 = in others
345	I4	905-908	Geocode of the area to be relocated	See geocodes
346	I4	909-912	Expected number of employees to be increased after move	
347	I4	913-916	Expected number of employees to be decreased after move	
348	I5	917-921	Additional building space after move (Pyeong)	
349-353	5I2	922-931	Five important factors for site selection decision	Same as variable 257
<u>CARD 16: Site Selection, Subsidy and Taxation for New Firms</u>				
354	I1	932	Did you consider other sites?	1 = yes, 0 = no
355	I3	933-936	Geocode of other site considered (1)	See geocodes of Appendix 2

<u>Variable #</u>	<u>Format</u>	<u>Columns</u>	<u>Variable Description</u>	<u>Code or range</u>
356	I1	937	Reason for not selecting the site	Same as variable 263
357	I3	938-941	Geocode of other site considered (2)	See geocodes of Appendix 2
358	I1	942	Reason for not selecting the site	Same as variable 356
359	I3	943-946	Geocode of other site considered (3)	See geocodes of Appendix 2
360	I1	947	Reasons for not selecting the site	Same as variable 356
361	I1	948	Did you receive loan for establishing?	1 = yes, 0 = no
362	I3	949-951	Percent of the loan to total capital investment	0 - 100%
363	I3	952-954	Interest rate of the loan	0 - 100%
364	I2	955-956	Grace period of the loan (year)	
365	I2	957-958	Terms of redemption of the loan (year)	
366	I1	959	Loan possibility for other site selection	1 = yes, 0 = no
367	I3	960-962	Expected interest rate of the possible loan	
368	I1	963	<u>Tax Benefits for Establishing</u> Income tax	1 = none, 2 = tax exemption, 3 = tax reduction, 4 = tax increase
369	I3	964-966	Corporate tax rate	
370	I1	967	Added-value tax	Same as variable 368
371	I3	968-970	Added-value tax rate	
372	I1	971	Defense tax	Same as variable 368
373	I3	972-974	Defense tax rate	

<u>Variable #</u>	<u>Format</u>	<u>Columns</u>	<u>Variable Description</u>	<u>Code or range</u>
374	I1	975	Property tax	Same as variable 368
375	I3	976-978	Property tax rate	
376	I1	979	Acquisition tax	Same as variable 368
377	I3	980-982	Acquisition tax rate	
378	I1	983	Registration tax	Same as variable 368
379	I3	984-986	Registration tax rate	
380	I1	987	Did you receive investment tax credit?	1 = yes, 0 = no
381	I1	988	Did you receive special depreciation credit	Same as above
382	I3	989-991	Percent of the investment tax credit	
383	I3	992-993	Period of the investment tax credit (year)	
384	I3	994-996	Percent of the special depreciation credit	
385	I2	997-998	Period of the special depreciation credit (year)	

CARD 17: Government Benefits and Policies for Births

386	I7	999-1005	Purchasing price of land per Pyeong when locating (Won)	
387	I7	1006-1012	Neighboring land price per Pyeong when locating (Won)	
388	I1	1013	Did you receive government benefits for employees when founding?	1 = yes, 0 = no
389	I2	1014-1015	Type of the benefits (4)	Same as variable 309
390	I3	1016-1018	Percent of the total for above benefit	

<u>Variable #</u>	<u>Format</u>	<u>Columns</u>	<u>Variable Description</u>	<u>Code or range</u>
391	I2	1019-1020	Type of the benefits (2)	Same as variable 309
392	I3	1021-1023	Percent of the total for above benefit	
393	I2	1024-1025	Type of the benefits (3)	Same as variable 309
394	I3	1026-1028	Percent of the total for above benefit	
395	I2	1029-1030	Type of the benefits (4)	Same as variable 309
396	I3	1031-1033	Percent of the total for above benefit	
397	I1	1034	Did you receive other government benefits when founding firm?	1 = yes, 0 = no
398	I2	1035-1036	Type of the government benefits or loans	Same as variable 321
399	I3	1037-1039	Interest rate of the loan (1)	
400	I2	1040-1041	Period of the loan (1)	
401	I2	1042-1043	Type of government benefits or loans (2)	Same as variable 321
402	I3	1044-1046	Interest rate of the loan (2)	
403	I2	1047-1048	Period of the loan (2)	
404	I2	1049-1050	Type of the government benefits or loans (3)	Same as variable 321
405	I3	1051-1053	Interest rate of the loan (3)	
406	I2	1054-1055	Period of the loan (3)	
407	I2	1056-1057	Type of the government benefits or loans (4)	Same as variable 321
408	I3	1058-1060	Interest rate of the loan (4)	
409	I2	1061-1062	Period of the loan (4)	

<u>Variable #</u>	<u>Format</u>	<u>Columns</u>	<u>Variable Description</u>	<u>Code or range</u>
410-414	5I1	1063-1067	Five important government policies for establishing	See V410 of Appendix 1
<u>CARD 18:</u>				
<u>Information on Sationaries</u>				
415	I1	1068	Did you consider move since 1979?	1 = yes, 0 = no
416	I1	1069	Did you consider opening branches since 1979?	1 = yes, 0 = no
417	I1	1070	Did you open a branch after 1979?	1 = yes, 0 = no
418	I4	1071-1074	Geocode of the branch	See geocodes of Appendix 2
419	I1	1075	Did you expand on present site?	1 = yes, 0 = no
420	I1	1076	Did you absorbe other firms since 1979?	1 = yes, 0 = no
421-423	3I4	1070-1088	Geocodes of the absorbed firms	See geocodes of Appendix 2
424	I1	1089	Did you acquire other firms since 1979?	1 = yes, 0 = no
425-427	3I4	1090-1101	Geocodes of the acquired firms	See geocodes of Appendix 2

6. MOCI Location Census of Manufacturing Establishments

<u>Var. #</u>	<u>Format</u>	<u>Columns</u>	<u>Variable Description</u>	<u>Value Range</u>	<u>Code or Unit</u>
1	I6	1-10	KID Geocode*	010100-022401	01nnnn = Seoul 02nnnn = Gyeonggi
2	I5	11-15	Standard Industry Code	31nnn-39nnn	31=food & beverages 32=Textile & Leather 33=Woods & Wood Products 34=Paper & publish 35=Chemical 36=Non-metal 37=Metals 38=Fabricate Metals 39=Others
3	I5	16-20	Amount of investment for production capital	1-nnnn	In million Won
4	I5	21-25	Value of annual shipment of products	1-nnnn	In million Won
5	I5	26-30	Total number of employees		
6	I5	31-35	Total number of production workers		
7	I5	36-40	Total number of office workers		
8	I1	41	Zone categories of the establishment location	1-7	1=Manufacturing-only zone 2=Manufacturing zone 3=Para-manufacturing zone 4=Commercial zone 5=Greenbelt zone 6=Residential zone 7=Outside of the planned zone of the city
9	I7	42-48	Total lot size		In Pyeong

* KID geocode system has been converted into the NBS system corresponding to 1977, D/PAHK/MOCI/NBS77CODE has the NBS system.

<u>Var. #</u>	<u>Format</u>	<u>Columns</u>	<u>Variable Description</u>	<u>Value Range</u>	<u>Code or Unit</u>
10	I7	49-55	Size of the building base		In Pyeong
11	I7	56-62	Total building space		In Pyeong
12	II	63	Type of industry location: private lot	0-2	0=bad value 1=coastal region 2=inland
13	II	64	Type of industry location: planned region	0-2	0=bad value 1=coastal region 2=inland
14	I5	65-69	Contracted amount of electricity per month		In Kwh
15	I5	70-74	Amount of electricity being used per month		In Kwh
16	I5	75-79	Amount of self-generated electricity per month		In Kwh
17	I4	80-83	Amount of piped water used per day		In M ³
18	I4	84-87	Amount of industrial water used per day		In M ³
19	I4	88-91	Amount of under-ground water used per day		In M ³
20	I4	92-95	Amount of other water used per day		In M ³
21	I5	96-100	Amount of Kerosene used per day		In Kl
22	I5	101-105	Amount of coal used per day		In Fon
23	I5	106-110	Amount of fuel gas used per day		In Kg
24	I5	111-114	Amount of shipment of raw material per month		In Ton
25	II	115	Means of shipment of raw material	1-4	1=automobiles 2=railroads 3=ships 4=airplane

1
2
1

<u>Var. #</u>	<u>Format</u>	<u>Columns</u>	<u>Variable Description</u>	<u>Value Range</u>	<u>Code or Unit</u>
26	II	116	Destination of major shipment of raw material	1-4	1=nation-wide 2=region within 30 km 3=region beyond 30km 4=foreign country
27	IA	117-120	Amount of shipment of products per month		In Ton
28	II	121	Means of shipment of products	1-4	See codes in Var. 25
29	II	122	Destination of major shipment of products	1-4	See codes in Var. 26
30	II	123	Types of pollution generated	1-5	1=air 2=water 3=noise 4=odor 5=soil
31	II	124	Facilities to prevent pollution	1-3	1=all 2=some 3=none
32	II	125	Order to move due to pollution	1-2	1=received 2=never received
33	II	126	Reasons for the choice of present city (Si or Gun)		1-91=raw materials 2=markets 3=labor 4=water resource 5=dealer 6=local government 7=personal reason 8=related establishments 9=coastal region
34	II	127	Reasons for the choice of present lot	1-8	1=Shipping 2=advertisment 3=low land price 4=government inducement

1
3
1

<u>Var. #</u>	<u>Format</u>	<u>Columns</u>	<u>Variable Description</u>	<u>Value Range</u>	<u>Code or Unit</u>
					5=lot purchasing convenience 6=personal reason 7=related establishments 8=intrastructure
<u>[Questions for firm's future plans]</u>					
35	II	128	Desired types of location?	1-2	1=individual (by choice) 2=industrial (planned)
36	II	129	Necessary size of lot?	1-5	1=present size 2=1.5 times 3=2 times 4=2.5 times 5=more than 2.5 times
37	II	130	Distance form the present firm?	1-4	1=within 20 Km 2=20-30 Km 3=30-40 Km 4=more than 40 Km
38	II	131	Distance from the City Hall?	1-4	1=within 10 Km 2=10-20 Km 3=20-30 Km 4=more than 30 Km
39	II	132	Do you understand the contents of Industrial Location Act?	1-3	1=very small 2=a little 3=None
40	II	133	To what extent does the implement of the Industrial Location Act affect your firm's operation?		1-31=a great deal 2=some what 3=none

APPENDICES

- Appendix 1: Coding Instructions for Open Questions, Project Sample Establishment Survey
- Appendix 2: The Geocode System
- Appendix 3: The Standard Industry Classification Codes
- Appendix 4: Cross Reference Matrix
- Appendix 5: Questionnaires
- a. Mining and Manufacturing Survey, 1981
 - b. Location Census of Manufacturing Establishments
 - c. Project Sample Establishment Survey
- Appendix 6: One-Way Frequency Distributions */
- a. Mining and Manufacturing Survey, 1973-1980
 - b. Mining and Manufacturing Survey, 1981
 - c. Location Census of Manufacturing Establishments
 - d. Project Sample Establishment Survey

*/ Available upon request.

Coding Instructions for Open Question
Project Sample Establishment Survey

A. General Coding Instruction

1. "N/A" (Not Applicable): Coded as "9" for variables 140-145, 148-150, 162-164, 189-212, 217-255. All other cases, remained as blanks.
2. "Zero Value": Coded as "0".
3. "Dont't know": Filled all columns with 8's.
4. "Others" in the multiple choice questions: Coded as "7".

B. Special Coding Instruction

V94. National Roads

1. Suin Industrial Road
2. Kyeongin National Road
3. Kyeongsu Industrial Road
4. Kyeongchun National Road
5. Kyeongchun Industrial Road
6. Roads i seoul
7. National Road 43 (Gwangju - Hwaseong)
8. Tongil Road
9. Kyeongwon National Road

V95. Interchanges on Kyeongbu Highway

1. Seoul Gangnam Interchange
2. Pangyeo Interchange
3. Suwon Interchange
4. Seongnam Interchange
5. Osan Interchange
6. Singal Interchange
7. Anseong - Pyeongtaeg Interchange

V97. Interchanges on Kyeongin Highway

1. Bucheon Interchange
2. Yangpyeongdong Interchange
3. Bupyeong Interchange
4. Hwagokdong Interchange
5. Juan interchange

V99. Interchanges on Yeongdong Highway

1. Singal Interchange
2. Yongin Interchange
3. Yeosu Interchange
4. Icheon Interchange

V137. Transport Problems of Employees

1. No Bus or Subway Lines
2. There is, but long waiting time
3. Expensive fare
4. Crowded
5. Long riding time
6. No problem
7. Other

V174. Taxes Affecting Business

1. Corporate Tax
2. Composite Income Tax
3. Value Added Tax
4. Defence Tax
5. Property Tax
6. Acquisition Tax
7. Registration Tax
8. City Planning
9. Inhabitant Tax
10. Garbage Collection Fee
11. Automobile Tax
12. Miscellaneous fees
13. Custom Duties
14. Unused Land Tax

V257. Important Factors for Relocation Site

1. Plant capacity - lot
2. Plant capacity - building
3. Rent payment
4. Availability of skilled workers
5. Cost of skilled workers
6. Availability of unskilled workers
7. Cost of unskilled workers
8. Cost of public services
9. Quality of public services
10. Proximity to suppliers
11. Proximity to clients
12. Proximity to competitors
13. Highway accessibility
14. Railroad accessibility
15. Lot expandability
16. Cost of lot for expansion
17. Proximity to business services
18. Property tax
19. Service of local government
20. Cost of service of local governments
21. Security
22. Amenity of environmnet
23. Recreation facilities

24. Community attitudes
25. Purchasing price of lot
26. Simpleness of lot purchase
27. Distance to Seoul
28. Distance of relocation
29. Industrial area
30. Co-operation with government policies
31. Expectation of future development
32. Proximity to harbors

V257. Important Factors for Relocation Site

33. Home ground of owner
34. Proximity to the headquarter
35. Business of authorization for establishing

V264. Reasons for Not Selecting

1. High cost of rent
2. Heavy taxation
3. Poor public service facilities
4. Disavailability of workers
5. Disavailability of lot or expansion
6. Transportation problems
7. Others
8. I don't know

V272. Housing Aids for Employees

1. Provide dormitory
2. Rent subsidy
3. Housing loan
4. Provide company's housing quarters
5. Payment in advance
6. Pay deposits for house rent
7. Others
8. I don't know

V275. Benefits for Employees

1. Subsidy for sons'/daughters' education
2. Aid for traffic expenses
3. Provide company's buses
4. Aid for living expenses
5. Increase salaries
6. Family allowance
7. Other
8. I don't know

V278. Unavoidable Reasons for Relocating to Present Site

1. Removal due to new road or road expansion
2. Removal due to district development plan
3. Order to move due to pollution
4. Located an improper area
5. To expand firms
6. N/A
7. Government incentives
8. Others

V333. Government Policies for Relocating

1. Subsidy or loan
2. Government pay for losing money due to relocation
3. Exemption of capital gains tax and income tax redemption
4. Exemption of capital gains tax or special assessment tax
5. Asset investment tax credit on special depreciation credit
6. Exemption of property tax
7. Exemption of registration and acquisition taxes
8. Low price for purchasing plant space
9. Priority for purchasing plant space
10. Benefits of public services (roads, waterworks, sewage works, housing, etc.)
11. Government purchasing of old plant space

V410. Government Policies for Establishing

1. Subsidy or loan
2. Asset investment tax credit or special depreciation credit
3. Reduction of property tax
4. Reduction of registration and acquisition taxes
5. Low price for purchasing plant space
6. Priority for purchasing plant space
7. Benefits of public services (roads, waterworks, sewage works, housing, etc.)
8. None of these

The Geocode System*

City of Seoul (1100)

1111	Jonglo Gu
1112	Jung Gu
1113	Yongsan Gu
1114	Seongdong Gu
1115	Dongdaemun Gu
1116	Seongbug Gu
1117	Dobong Gu
1118	Eungpyeong Gu
1119	Seodaemun Gu
1120	Mapo Gu
1121	Gangseo Gu
1122	Guro Gu
1123	Yeongdeungpo Gu
1124	Dongjag Gu
1125	Gwanag Gu
1126	Gangnam Gu
1127	Gangdong Gu

Gyeonggi Do (3000)

3101	Incheon Si-Jung Gu
3102	Dong Gu
3103	Nam Gu
3104	Bug Gu
3111	Suwon Si
3112	Seongnam Si
3113	Euijeongbu Si
3114	Anyang Si
3115	Bucheon Si
3116	Gwangmyeong Si**
3117	Songtan Si**
3118	Dongducheon Si**
3131	Yangju Gun
3132	Namyangju Gun
3133	Yeoju Gun
3134	Pyeongtaeg Gun
3135	Hwaseong Gun
3136	Siheung Gun
3137	Paju Gun
3138	Goyang Gun

* Korea Economic Planning Board, 1980 Revision.
 ** These three Si's which were raised to the status of Si from Eup in 1981 appear in only the Project's Sample Establishment Survey conducted in 1983.

3139	Gwangju Gun
3140	Yeoncheon Gun
3141	Pocheon Gun
3142	Gapyeong Gun
3143	Yangpyeong Gun
3144	Incheon Gun
3145	Yongin Gun
3146	Anseong Gun
3147	Gimpo Gun
3148	Ganghwa Gun
3150	Banweol Chuljangso

Other Provinces

2111-2120	Busan Si
2211-2216	Daegu Si
3211-3235	Gangwon Do
3311-3340	Ghungcheongbug Do
3400-3445	Chungcheongnam Do
3511-3543	Jeonlabug Do
3600-3653	Jeonlanam Do
3711-3754	Gyeongsangbug Do
3811-3849	Gyeongsangnam Do
3911-1932	Jeju Do

Korea Standard Industry Codes*

1. Textile Wearing Apparel and Leather Industries
 - 3211 Spinning Textiles and Silk Reeling
 - 3212 Manufacture of Made-up Textile Goods
 - 3213 Knitting Mills
 - 3214 Manufacture of Carpets and Rugs
 - 3215 Cordage, Rope and Twine Industries
 - 3216 Weaving Textiles
 - 3217 Bleaching, Dyeing and Finishing Textiles
 - 3219 Manufacture of Textiles, n.e.c.
 - 3220 Manufacture of Weaving Apparel
 - 3231 Tanneries and Leather Finishing
 - 3232 Fur Dressing and Dyeing Industries
 - 3233 Manufacture of Products of Leather and Leather Substitutes
 - 3240 Manufacture of Footwear

2. Manufacture of Fabricated Metal Products, Machinery and Equipment
 - 3811 Manufacture of Cutlery, Hand Tools and General Hardware
 - 3812 Manufacture of Furniture and Fixtures Primarily of Metal
 - 3813 Manufacture of Structural Metal Products
 - 3819 Manufacture of Fabricated Metal, n.e.c.
 - 3821 Manufacture of Engines and Turbines
 - 3822 Manufacture of Agricultural Machinery and Equipment
 - 3823 Manufacture of Metal - and Wood - Working Machinery
 - 3824 Manufacture of Special Industrial Machinery and Equipment
 - 3825 Manufacture of Office, Computing and Accounting Machinery
 - 3829 Manufacture of Machinery and Equipment, n.e.c.
 - 3831 Manufacture of Electrical Machinery and Apparatus
 - 3832 Manufacture of Radio, Television set and Communication Equipment
 - 3833 Manufacture of Electrical Appliances and Housewares
 - 3841 Ship Building and Repairing
 - 3842 Manufacture of Railroad Equipment
 - 3843 Manufacture of Motor Vehicles
 - 3844 Manufacture of Motorcycles and Bicycles
 - 3849 Manufacture of Transport Equipment, n.e.c.
 - 3851 Manufacture of Professional, Scientific and Measuring Equipment
 - 3852 Manufacture of Photographic and Optical Goods
 - 3853 Manufacture of Watches and Clocks

* Korea Economic Planning Board, 1975 Revision.

Cross Reference Matrix

1973-1980 KOREAN ANNUAL SURVEY OF MINING AND MANUFACTURING

SUMMARY OF DATA QUALITY: NON-ZERO RESPONSES

VARIABLE ^{1/}	1973	1974	1975	1976	1977	1978	1979	1980
Geocode (6 digit)	100	100	100	100	100	100	100	100
Industry (5 digit)	100	100	100	100	100	100	100	100
Year Established	X	X	X	X	X	X	X	100
<hr/>								
Locsize (Planned District)	N/A	N/A	N/A	N/A	91	11	91	95
Locsize (Unplanned District)	N/A	N/A	N/A	N/A	N/A	81	N/A	N/A
Building Space	N/A	N/A	N/A	N/A	95	93	96	94
Capital Investment	13	16	19	20	21	21	21	22
<hr/>								
Total Owners	74	74	72	71	72	73	72	70
Male Owners	70	70	68	67	69	70	69	67
Female Owners	12	11	11	10	10	12	10	10
Total Production Workers	89	90	90	89	91	93	92	91
Male Production Workers	85	86	86	85	88	88	89	87
Female Production Workers	38	41	44	47	50	54	53	53
Total Office Workers	49	53	58	57	64	67	67	69
Male Office Workers	44	47	51	51	56	57	56	48
Female Office Workers	27	33	38	41	49	52	54	47
Work Days	88	90	91	90	92	93	92	91
Work Minutes	N/A	N/A	N/A	N/A	92	84	92	N/A
Production Wages	100	100	100	100	99	100	100	100
Production Bonuses	N/A	N/A	N/A	N/A	N/A	N/A	N/A	71
Office Wages	51	55	61	60	66	69	69	49
Office Bonuses	N/A	N/A	N/A	N/A	N/A	N/A	N/A	33
<hr/>								
Shipments	87	89	90	36	37	38	89	89
Beginning Inventory	48	52	50	49	49	54	46	51
Ending Inventory	52	58	56	55	57	60	57	57
KWh purchased	86	-	90	-	N/A	-	N/A	N/A
<hr/>								
Lot Value	N/A	N/A	N/A	N/A	5	72	67	69
Building Value	N/A	N/A	N/A	N/A	5	74	77	75
Structure Value	N/A	N/A	N/A	N/A	N/A	23	N/A	N/A
Machines Value	N/A	N/A	N/A	N/A	6	91	96	95
Tons Value	N/A	N/A	N/A	N/A	N/A	37	N/A	N/A
Self-Generated KWh	N/A	N/A	N/A	N/A	N/A	2	N/A	N/A
<hr/>								
Industrial Water	N/A	N/A	N/A	N/A	N/A	9	N/A	N/A
Piped Water	N/A	N/A	N/A	N/A	N/A	36	N/A	N/A
Total Water	N/A	N/A	N/A	N/A	N/A	75	N/A	N/A
<hr/>								
Value of Production	100	100	100	100	100	100	100	100
Value Added	100	100	100	100	100	100	100	100
Production Type (Export or Not)	N/A	N/A	N/A	N/A	N/A	N/A	100	N/A
<hr/>								
Air Pollution	N/A	N/A	N/A	N/A	N/A	N/A	7	N/A
Water Pollution	N/A	N/A	N/A	N/A	N/A	N/A	8	N/A
Noise Pollution	N/A	N/A	N/A	N/A	N/A	N/A	10	N/A
Odor Pollution	N/A	N/A	N/A	N/A	N/A	N/A	3	N/A
N/A Pollution	N/A	N/A	N/A	N/A	N/A	N/A	57	N/A
<hr/>								
All Pollution Control Equipment	N/A	N/A	N/A	N/A	N/A	N/A	6	N/A
Some Pollution Control Equipment	N/A	N/A	N/A	N/A	N/A	N/A	10	N/A
No Pollution Control Equipment	N/A	N/A	N/A	N/A	N/A	N/A	83	N/A
Cost of Pollution Control Equipment	N/A	N/A	N/A	N/A	N/A	N/A	17	N/A
<hr/>								
Firm Size	N/A	N/A	N/A	N/A	N/A	N/A	100	-
Total Production Workers	N/A	N/A	N/A	N/A	N/A	N/A	92	N/A
Skilled Workers	N/A	N/A	N/A	N/A	N/A	N/A	24	N/A
Technicians with License	N/A	N/A	N/A	N/A	N/A	N/A	21	N/A
Technicians without License	N/A	N/A	N/A	N/A	N/A	N/A	22	N/A
Apprentice	N/A	N/A	N/A	N/A	N/A	N/A	63	N/A
Others	N/A	N/A	N/A	N/A	N/A	N/A	35	N/A
<hr/>								
Value of Exports	N/A	N/A	N/A	N/A	N/A	N/A	21	-
Number of Employees	N/A	N/A	N/A	N/A	N/A	N/A	100	100

1/ For more information on the variables, see Annex 3.

KEY

X = Bad Values
 NNZ = Non-Zero Response
 N/A = Not Applicable
 - = Not Available

Questionnaires

- a. Mining and Manufacturing Survey, 1981
- b. Location Census of Manufacturing Establishments
- c. Project Sample Establishment Survey

Please don't fill up items of the mark [*]

Code of classification of administrative district	Serial No.	Questionnaire No.	Business a registered No.	Current industrial production survey No.	* Industrial group	* Size of workers
---	------------	-------------------	---------------------------	--	--------------------	-------------------

<p>1. Name of establishment and location</p> <p>Name of establishment _____</p> <p>Name of representative _____ (phone No.) _____</p> <p>Location _____</p>			<p>4. Name of group [] _____</p> <p>5. Date of foundation _____</p> <p>19 _____</p>																									
<p>2. Location of head office</p> <p>Name of representative _____ (Phone No.) _____</p> <p>Location _____</p>			<p>6. Settlement terms month () _____</p> <p>7. Type of organization management</p> <p>(1) Company ()</p> <p>(2) Other corporation ()</p> <p>(3) Individual ()</p>																									
<p>3. Other establishments in the same enterprise</p> <table border="1"> <thead> <tr> <th>Name of establishment</th> <th>Location</th> <th>Phone No.</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>			Name of establishment	Location	Phone No.										<p>8. Capital stock</p> <table border="1"> <thead> <tr> <th colspan="3">Value (Million won)</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>		Value (Million won)											
Name of establishment	Location	Phone No.																										
Value (Million won)																												

<p>9. Items related to removal of establishment</p> <p>(1) Removal period _____</p> <p>(2) Previous location _____</p> <p>(3) Reason for removal _____</p>		<p>10. Area of site and building</p> <table border="1"> <thead> <tr> <th></th> <th>m²</th> </tr> </thead> <tbody> <tr><td>(1) Site</td><td> </td></tr> <tr><td>(2) Floor space</td><td> </td></tr> <tr><td>(3) Total floor space</td><td> </td></tr> </tbody> </table>			m ²	(1) Site		(2) Floor space		(3) Total floor space	
	m ²										
(1) Site											
(2) Floor space											
(3) Total floor space											

No	Commodity Code	Name of products	*	Unit	(1) Products shipped (included exports)			
					Quantity		Value (Million won)	
01								
02								
03								
04								
05								
06								
07								
08								
09	Total							

20. Major trust products _____	21. Major raw materials _____	22. Process of production _____
--------------------------------	-------------------------------	---------------------------------

23. Contents related to the inquiries (1) It drew up only this factory.
(2) It drew up including other factories

Please fill up a dark column only 20 workers or more

11. Tangible fixed assets					Unit: Value (Million Won)			12. Temporary rates of construction	
Classification	Annual acquisition value		(3) Disposal Value	(4) Value of depreciation	(5) Total value at the end of the year	Classification	Value (Million won)	(1) Increased	(2) Decreased
	(1) New	(2) Old							
(A) Land	x	x	x		x	x	x		
(B) Buildings and Structures									
(C) Machinery equipment tools and fixtures									
(D) Vehicles & transport equipment									
(E) Total									

13. No. of workers				14. Compensation			
Classification	At the end of Dec.			Average No. of Workers	Value (Million won)		
	Total	Male	Female				
(1) Proprietors							
(2) Operatives							
(2) Employees Administrative							
(3) Total							
(4) Annual months operated		() month			x	x	x

15. Major production costs		Value (Million won)	
Classification			
(1) Raw materials			
(2) Fuels			
(3) Electrically purchased			
(4) Water purchased			
(5) Contract and commission work			
(6) Repair and maintenance work			
(7) Total			

16. Value of products shipped			18. Value of Inventories		
Classification		Value (Million won)	Classification		Value (Million won)
(1) Value of products shipped			(1) Finished goods		
(2) Value of wastes shipped			(2) Semi-finished goods-in-process		
(3) Receipts for processing repair work for others			(3) Raw materials		
(4) Total			(4) Fuels		
			(5) Total		

17. Domestic consumption duties		(2) Products exported		Inventories at the beginning of the year		Inventories at the end of the year		(5) Ex-factory price	
		Quantity	Value (Million won)	Quantity	Value (Million won)	Quantity	Value (Million won)	Minimum	Maximum

Remarks _____				
Date of response _____	Section of respondent _____	Signature of respondent _____	Signature of enumerator _____	Signature of Supervisor _____
Section Phone NO. _____				

Economic Planning Board
111 - 11 - 10

Mining and Manufacturing
(For head offices separated)

Code of classification of administrative district	Serial No.	Questionnaire No.	Business registered No.	Current industrial production survey No.	* Industrial group	* Size of workers

1. Name of establishment and location Name of establishment Name of representative (phone No.)	2. Name of group
--	------------------

3. Date of foundation 19	4. Settlement terms month
5. Type of management organization (1) Company () (2) Other corporation () (3) Individual ()	6. Capital stock Value (Million won)

7. Number of workers			8. Compensation of employees		
At the end of Dec.		Average number of workers	Value (Million won)		
Total	Female				

Classification	Annual acquisition value		(3) Disposal Value	(4) Value of depreciation	(5) Total value at the end of the year
	(1) New	(2) Old			
(1) Land	X	X	X	X	X
(2) Buildings and structures					
(3) Machinery, equipment, tools and furniture					
(4) Vehicles & transport equipment					
(5) Total					

10. Value of Inventories				11. Temporary rates of construction			
Classification	(1) At the beginning of the year		(2) At the end of the year		(3) Balances at the end of the year	(4) Changes [(1)-(2)]	
	(1) Raw materials	(2) Fuels	(1) Increased of the year	(2) Decreased of the year		(1)	(2)

Remarks

Survey 1981 Questionnaire (II)
from establishment)

No.	Name of establishments	Phone No.	Location	No. of workers	Economic activity			Value of shipments		Commodities		
					Mining & Metall.	Others	Others	Value 100 million won		(1)	(2)	(3)
01												
02												
03												
04												
05												
06												
07												

13. Possibility of recording questionnaire -(1) Only establishment () -(2) Only head office () (3) Both ()
--

Serial No.	Name of enterprise	Phone No.	Location (head office)	Economic activities	Notes
01					
02					
03					
04					
05					
06					
07					

o Attentions

Date of response	Section of respondent	Signature of respondent	Signature of emmentor	Signature of supervisor
	Section Phone No.			

LOCATION CENSUS OF MANUFACTURING ESTABLISHMENTS

(MOCI, December 31, 1978)

Name of Establishment:

Name of Representative:

Address of Establishment:

Major Products: (a) _____ (b) _____

-
1. Value of capital (in million Won)
 2. Value of shipment for the year (in million Won)
 3. Number of permanent workers
 - a. Total workers
 - b. Production workers
 - c. Office workers
 4. Zone categories of the establishment location
 - a. Manufactuiring-only zone
 - b. Manufacturing zone
 - c. Para-manufacturing zone
 - d. Commercial zone
 - e. Green-belt zone
 - f. Residential zone
 - g. Zone outside the planned zone of the city
 5. Size of the establishment (in Pyeong)
 - a. Lot size
 - b. Area of the building base
 - c. Total building space
 6. Type of location
 - a. Individual (by choice) lot: (i) near sea (ii) inside land
 - b. Individual (planned) estate: (i) near sea (ii) inside land
 7. Electricity
 - a. Contrated amount of electricity to use
 - b. Amount being used (Kwh per month)
 - c. Amount of self-generated electricity (Kwh per month)
 8. Water resources (m**3 per day)
 - a. Public water
 - 1). Piped water
 - 2). Piped water designated for industrial use only
 - b. Water in the ground and others
 - 1). Water in the ground
 - 2). Others (waste water, sea water)
 9. Fuels
 - a. Kerosene (Kl per month)
 - b. Coal (ton per month)
 - c. Gas (Kg per month)
 10. Shipment
 - a. Amount of shipment (ton per month)
 - 1). Raw material
 - 2). Products
 - b. Means of shipment
 - 1). Automobiles
 - 2). Railroads
 - 3). Ships
 - 4) Airplains
 - c. Destination of major shipment
 - 1). Nation
 - 2). Near region (within 30 Km)
 - 3). Far region (beyond 30 Km)
 - 4). Foreign country

11. Facilities for pollution
 - a. Kinds of pollution being generated
 - 1). Air 2). Water 3). Noise 4). Odor 5). Soil
 - b. Facilities to prevent pollution
 - 1). All installed 2). Some installed 3). No installed
 - c. Whether received relocation order according to the act of environment protection
 - 1). Yes 2). No
12. Reason for the selection of the present location (city)
 - a. Convenience in buying raw materials
 - b. Convenient shipment to the market
 - c. Abundant sources of labor
 - d. Good water resources
 - e. Nearness to the dealers
 - f. Inducement and cooperation by the local government
 - g. Personal reason of the manager
 - h. Easy cooperation with other related establishments
 - i. The industry should be located near sea
13. Reason for the selection of the present lot
 - a. Convenient facilities of shipment
 - b. Advertisement effects
 - c. Low land price
 - d. Inducement by the administrative organization
 - e. Convenienced in purchasing the lot
 - f. Personal reason of the manager
 - g. Other related establishment
 - h. Possibility of using public facilities

Answer the following questions provided that you have a plan to move or expand the present establishment.

14. Desired type of the location
 - a. Individual location by choice
 - b. Individual (planned) estate
15. Necessary size of lot
 - a. Present size
 - b. 1.5 times
 - c. 2 times
 - d. 2.5 times
 - e. 2.5 times or more
16. Distance from the present establishment
 - a. Within 20 Km
 - b. 20-30 Km
 - c. 30-40 Km
 - d. 40 or more
17. Distance from the city (the City Hall)
 - a. Within 10 Km
 - b. 10-20 Km
 - c. 20-30 Km
 - d. 30 or more
18. Knowledge on the contents of the act of industrial location
 - a. Know well
 - b. Know a little
 - c. Don't know at all
19. Is there any conflict between the administration of the act of industrial location and operation of the establishment?
 - a. Yes
 - b. A little
 - c. No.

PROJECT SAMPLE ESTABLISHMENT SURVEY

Survey Number _____
 Interviewer _____
 Date of Interview _____
 SIC/Firm Type/Size _____ / _____ / _____

EMPLOYMENT LOCATION SURVEY

Name of person responding to survey _____
 Position _____

Part I ESTABLISHMENT CHARACTERISTICS

Card No. 01

1. National Bureau of Statistics establishment ID (pre-coded) _____
2. Name of establishment * _____
 Telephone number * _____
3. Address of establishment * _____
 Si (Gun) Gu Dong (Eup, Myeon) Street No. _____
4. This establishment is:
 (1) a single-establishment operation
 (2) headquarters of a multi-establishment operation
 (3) a branch of a multi-establishment operation
 If (3), answer 5. If (2), answer 6 through 8.
5. Name of parent company: _____
 Telephone number: _____
 Address of parent company:
 Si (Gun) Gu Dong (Eup, Myeon) Street No. _____
6. How many establishments does your firm operate? _____
7. Where are they located?
 within Seoul: (1) _____ (2) _____ (3) _____ (Gu)
 in Gyeonggi province: (1) _____ (2) _____ (3) _____ (Si, Gun, Gu)
 outside Seoul and Gyeonggi: (1) _____ (2) _____ (3) _____ (Si, Gun, Gu)
8. Which of the following best describes your strategy for multiplant operation?
 (1) product specialization by each plant
 (2) market share
 (3) specialize in a certain part of production process
 (4) other, please specify _____

* Entered before the interview.

A. Location History

- A1. When was this establishment founded? _____ year
- A2. When did this establishment first operate at this location?
_____ year
- A3. Which of the following 4 categories describes your establishment's location history? _____
- (1) It began operation at this location in 1978 or before
(Ask Parts III and V after completing Part I).
- If began operation at this location in 1979 or after, it
- (2) was newly founded (Ask Part III and IV after completing Part I).
- (3) was relocated from another location in Seoul and Gyeonggi (Ask Part II and III after completing Part I).
- (4) was relocated from another location outside Seoul and Gyeonggi (Ask Part II and III after completing Part I).
- (All questions from here-on are with respect to the establishment located at the address as specified in Question No. 3 above).

B. Plant Characteristics

Card No. 02

- B1. What are the major products manufactured at this establishment? List up to three in order of importance (For example, women's clothes, leather shoes, automobile parts, etc.).
- (1) _____
- (2) _____
- (3) _____
- B2. Which of the following production processes does your plant most closely resemble?
- (1) assembly-line type process for a few kinds of products.
- (2) batch process for many different kinds of products.
- (3) combination of both
- (4) other, please specify: _____
- B3. Roughly, how many pyeongs is the land area of plant site?
- Rent _____ pyeong
- Own _____ pyeong
- B4. Roughly, how many pyeongs of total floor space does your plant have?
- Rent _____ pyeong
- Own _____ pyeong
- B5. Roughly, how many pyeongs are used as office space?
- _____ pyeong
- B6. Roughly, what proportion of the land is occupied by buildings on this site? _____%
- B7. How much is the current value of your plant lot per pyeong? _____ (won)
- B8. How much rent do you pay per year (For renter only)?
- building _____ (1,000 won)
- land _____ (1,000 won)
- B9. How old are the main buildings of this establishment? _____ years
- B10. Do you have some land space reserved for plant expansion?

At present plant site: _____
(1) substantial (2) adequate (3) not much (4) none
Next to the present plant site: _____
(1) substantial (2) adequate (3) not much (4) none

B11. Is this building (excluding office space) used for your primary operation single-story or mutli-story? _____
(1) single-story (2) two-story (3) three-story (4) four-story or more (5) mixed single & multi-story

Card No. 03

B12. Do you store your products and raw materials in-door or out-door?
(In-door = 1, Out-door = 2)
(1) products _____
(2) raw materials _____

B13. Where is the warehousing for your finished goods done? (Check all applicable)
(1) on this site; warehousing area _____ pyeong
(2) within Seoul; roughly _____ Km from here
(3) outside Seoul but within Gyeonggi; roughly _____ Km from here
(4) outside Seoul and Gyeonggi; roughly _____ Km from here

C. Employment

C1. How many full-time employees at this establishment?
male female
(1) management _____
(2) skilled workers _____
(3) unskilled workers _____
total _____

C2. How many part-time employees at this establishment?
(1) male _____
(2) female _____

Card No. 04

C3. Roughly, what will be the maximum number of employees in case of full-capacity operation (including part-time workers)? _____

C4. Roughly, what are the average monthly wage rates (including bonus payment)?
(1) skilled workers _____ (won)
(2) unskilled workers _____ (won)

C5. On the average, how many (8-hour) shifts are run at the plant?
(1) one shift (2) two shifts (3) three shifts

C6. Roughly, what proportion of workers are unionized? _____%

C7. Where do most of your employees live? Please give rough percentage estimates to the following categories.
management non-management

dormitory at plant site	_____ %	_____ %
immediate neighborhood (Dong)	_____ %	_____ %
within this Gu or Gun (Si)	_____ %	_____ %
adjacent Gu or Gun (Si)	_____ %	_____ %
other Gu or Gun (Si)	_____ %	_____ %
	total 100%	total 100%

C8. What proportion of your employees travel to work by:

dormitory at plant site	_____ %
foot	_____ %
bicycle (or motorcycle)	_____ %
commercial bus	_____ %
subway	_____ %

Card No. 05

company bus	_____ %
car	_____ %
combination of subway and bus	_____ %
	total 100%

D. Shipment of Outputs and Inputs

D1. Roughly, the percentage of the value of output shipped within Korea by:

truck only	_____ %
rail only	_____ %
truck-rail combination	_____ %
truck-water combination	_____ %
air (during any part of trip)	_____ %
other, please specify _____	_____ %
	total 100%

D2. Roughly, the percent of the value of raw material inputs shipped within Korea by:

truck only	_____ %
rail only	_____ %
truck-rail combination	_____ %
truck-water combination	_____ %
air (during any part of trip)	_____ %
other, please specify _____	_____ %
	total 100%

D3. If you use rail for making and/or receiving deliveries, how far is the nearest railway station? _____ Km
(If you have a railroad siding, enter zero.)

D4. If you use trucking for making and/or receiving deliveries, give names of the nearest highway, and highway interchange and the distance from the plant.

(1) name of the highway _____

(2) name of the highway interchanges

Gyeongbu Highway	_____	_____ Km
Gyeongin Highway	_____	_____ Km
other _____	_____	_____ Km

D5. What percent of your products are sold in the following areas?
within Seoul _____ %
within Gyeonggi _____ %
outside Seoul and Gyeonggi, but within Korea _____ %
internationally _____ %
total 100%

Card No. 06

D6. On the average, how far and to where are your products delivered from this location within Korea?

	destination (Si, Gu, or Gun)	distance (Km)
(1)	_____	_____
(2)	_____	_____
(3)	_____	_____
(4)	_____	_____
(5)	_____	_____

D7. Roughly, what proportion of your products is used mainly as inputs of other industries?

(1) 0% (2) 1-20% (3) 21-40% (4) 41-60% (5) 61-80%
(6) 81-99% (7) 100%

D8. What industries are they?

(1) _____
(2) _____
(3) _____

D9. What percent of your raw materials and/or input components are bought in the following areas?

within Seoul	_____ %
within Gyeonggi	_____ %
outside Seoul and Gyeonggi but within Korea	_____ %
internationally	_____ %
Total	100%

D10. On average, how far and from where in Korea do you receive the raw materials and/or input components?

	place of origin (Si, Gu, or Gun)	distance (Km)
(1)	_____	_____

Card No. 07

(2)	_____	_____
(3)	_____	_____
(4)	_____	_____
(5)	_____	_____

D11. Roughly, what proportion of your inputs is outputs of other industries?

(1) 0% (2) 1-20% (3) 21-40% (4) 41-60% (5) 61-80%
(6) 81-99% (7) 100%

D12. What industries are they?

(1) _____
(2) _____
(3) _____

D13. Do your employees have any problems with commuting to this location? (Choose three in order of importance)

- (1) There is no bus or subway route.
- (2) There is a route, but needs a long wait.
- (3) The fare is too high.
- (4) Too crowded.
- (5) Takes too much time.
- (6) No problems
- (7) Other, please specify _____

E. Public Services and Government Incentive Schemes

E1. How much public utility services does your plant require?
substantial: 1 modest: 2 little: 3 almost none: 4

- (1) electricity _____
- (2) water _____
- (3) telephone _____
- (4) telegraph _____

E2. On the average, how frequently public utility services are interrupted?

almost none: 1 once a month: 2 once a week: 3
twice a week: 4 more than twice a week: 5

- (1) electricity _____
- (2) water _____

E3. Do you supply electricity or water with your own facilities?

Yes = 1 No = 0

- (1) electricity _____
- (2) water _____

E4. What do you think of the following public service in this area?

excellent: 1 good enough: 2 not enough: 3 very poor: 4

- (1) fire protection service _____
- (2) telephone _____
- (3) telegraph _____

E5. Who removes and treats the waste? Please estimate the percentage of wastes treated by the following:

your firm _____ %
local authority _____ %
private contractor _____ %
others _____ %
total 100%

E6. In case the local authority removes the waste, what do you think of their service?

- (1) excellent (2) good enough (3) not enough
- (4) very poor

E7. How the waste water is treated? Please estimate the percentage of waste water treated by the following:

self-treatment at the plant _____ %
collective-treatment facility in the area _____ %
local authority (Si, Gun) _____ %

combination of self-treatment and local authority _____ %
other, please specify _____ %
total 100%

E8. In case the local authority treats the waste water, what do you think of their service?
(1) excellent (2) good enough (3) not enough
(4) very poor

E9. What types of pollution are generated by your plant operation?
(1) air (2) water (3) noise (4) odor (5) soil
(6) other, please specify _____ (7) none

E10. If your plant generates pollution, how good are your pollution control facilities?
(1) complete (2) adequate (3) not enough (4) none

E11. Did you receive any instruction from the government because of the pollution control problem?
Yes = 1 No = 0

E12. If yes, which of the following applies to your case?
(1) to change the production process
(2) to install pollution-control facilities
(3) to relocate to other location
(4) to pay fine
(5) other, please specify _____

E13. Have you received any government subsidies to install for pollution-control facilities?
Yes = 1 No = 0

E14. If yes, how much did you receive and what percent of the total cost of the facility was it?
_____ (1,000 won)
_____ (%)

E15. Roughly, how much property taxes do you pay per year?
(1) building _____ (1,000 won)
(2) land _____ (1,000 won)

E16. What do you think of this amount?
(1) excessive
(2) about right
(3) on the low side

E17. What taxes that you pay affect your business operations most seriously?
(1) _____
(2) _____
(3) _____

F. Past Trends and Future Prospects

- F1. What has been the average growth rate of your establishment in terms of output (or sales) over the past 5 years?
(1) declined: _____ % per year
(2) no growth
(3) Increased: _____ % per year
- F2. How have the natures of the products manufactured changed over the past five years?
(1) no fundamental change
(2) same products but introduced new production methods
(3) same production methods but different products
(4) changed both production methods and products
- F3. How much do you anticipate your establishment will grow in the next five years?
(1) grow quite substantially
(2) grow substantially
(3) grow slightly
(4) remain the same
(5) decrease
(6) not sure

Card No. 09

- F4. Roughly, can you give information on the following for 1982?
- (1) annual sales:
 export _____ (million won)
 domestic Sales _____ (million won)
- (2) annual purchase of raw materials: _____ (million won)
- (3) annual wage bill _____ (million won)
- (4) annual transportation costs for products and raw materials: _____ (1,000 won)
- (5) annual electricity bill: _____ (1,000 won)
- (6) annual water bill: _____ (1,000 won)
- (7) appraised market value of plant and equipment (excluding land): _____ (million won)

Card No. 10

G. Summary Evaluation of Present Location

- G1. Please evaluate how you feel about your present location by the factors listed below:
very satisfactory: 1 satisfactory: 2 not satisfactory: 3
- (1) land area: _____
- (2) building space: _____
- (3) rent payment (including building and land): _____
- (4) availability of skilled workers: _____
- (5) wage of skilled workers: _____
- (6) availability of unskilled workers: _____
- (7) wage of unskilled workers: _____
- (8) cost of public utilities (electricity, water, etc.) _____
- (9) quality of public utility services: _____

- (10) proximity to suppliers: _____
- (11) proximity to customers: _____
- (12) proximity to competitors: _____
- (13) highway access: _____
- (14) railroad access: _____
- (15) availability of nearby land for plant expansion: _____
- (16) cost of nearby land for plant expansion: _____
- (17) proximity to related services: repair and maintenance, banks and other business services: _____
- (18) property tax burden: _____
- (19) local government services (fire protection, road maintenance, etc): _____
- (20) cost of local government services: _____
- (21) security (crimes, etc.) _____
- (22) pleasant surroundings: _____
- (23) recreational facilities: _____
- (24) local community attitudes towards this establishment: _____

Part II. COMPARISONS WITH PREVIOUS LOCATION

Card No. 11

A. Previous Location

A1. The address of previous location:
Si (Gun) _____ Gu, _____ Dong (Eup, Myeon) _____ Street No. _____ :

A2. Roughly what is the distance between the present and the previous location? _____ Km

A3. How would you best describe the condition of your previous plant just prior to your move from it?
(1) in good condition, but cramped
(2) in good condition, but obsolete
(3) still serviceable
(4) worn out

A4. How have the plant and equipment changed after the move to the new site?
(1) replaced all with new facilities
(2) replaced part of old facilities
(3) not changed

B. Experiences After Relocation

B1. Compare the situation at the present location as of one year after the move with those at the previous location for the following items.

0 = no change
1 = increase changed by
2 = decrease (%)

- (1) production (or sales) _____ _____
- (2) land area _____ _____
- (3) building space _____ _____
- (4) rent payment per pyeong _____ _____
- (5) number of skilled workers _____ _____
- (6) monthly wages of skilled _____ _____

- workers _____
- (7) number of unskilled workers _____
- (8) monthly wages of unskilled workers _____
- (9) commuting distance for managers _____
- (10) commuting distance for workers _____
- (11) output delivery distance _____
- (12) input delivery distance _____
- (13) local tax payment _____
- (14) profits _____
- (15) public utility costs _____

Card No. 12

B2. Any changes in the quality of the following public services after the relocation?

substantially improved: 1 somewhat improved: 2
unchanged: 3 became worse: 4

- (1) electricity _____
- (2) water _____
- (3) telephone _____
- (4) telegraph _____
- (5) fire protection _____
- (6) police service _____
- (7) waste removal _____
- (8) road maintenance _____
- (9) sewerage _____

C. Important Factors For Relocation

C1. What was the main reason for your relocation?

- (1) received a government relocation order
- (2) to receive the benefits from government incentive schemes
- (3) factors related to plant operations _____

C2. List five location characteristics that you considered to be most important (excluding the government incentive schemes such as credit subsidies or tax exemption) when you chose the present location. (List in order of importance, if needed, the interviewer should assist the respondent by referring to G1 in part I).

- (1) _____
- (2) _____
- (3) _____
- (4) _____
- (5) _____

C3. Did you consider the alternative sites before you made the decision to choose the present location?

Yes = 1 No = 0

C4. If considered, where were the locations, and what were the main reasons for not choosing these locations?

	Location			Reason
(1)	_____	Si	(Gun) Gu	_____
(2)	_____	Si	(Gun) Gu	_____
(3)	_____	Si	(Gun) Gu	_____

C5. Roughly, what percent of your labor force stayed with you when your firm moved to the new location (as of about 1 year after the move)?
_____ %

C6. Roughly, what percent of your employees relocated their residences when your establishment moved to the present location?

- (1) within one year after the move of
establishment _____ %
as of now _____ %

C7. Did you provide any housing aid programs for your employees? (List three in order of importance).

- (1) provided dormitory housing loan (2) paid deposit money (3) gave
(4) other, please specify _____

C8. Have you provided any type of incentive or benefit to the employees who moved their residences with your establishment to the new site? (List three in order of importance).

- (1) subsidy related to the child education expense
(2) subsidy related to the commuting expense
(3) provision of commuting bus
(4) other, please specify _____

C9. Was your relocation forced because of public action? Choose three in order of importance.

- (1) highway construction or expansion
(2) urban renewal project
(3) relocation order because of pollution
(4) zoning regulation
(5) other, please specify _____
(6) not applicable

C10. Did you receive a credit subsidy for plant expansion when you moved to this relocation?

Yes = 1 No = 0

C11. If yes, what percent of your total capital investment for expansion was this credit?

_____ %

C12. What were the interest rate and the repayment period?

- (1) interest rate: _____ % per year
(2) grace period: _____ year(s)
repayment period: _____ year(s)

C13. Do you think that you could have received a credit subsidy if you had moved to other locations instead of the present location?

- (1) Yes = 1 No = 2
- (2) If Yes, what would have been the likely lending rate for such a credit?
_____ %

Card No. 13

C14. After relocation, how did your tax burden change? Roughly, indicate the amount of change as percent of total payment for each of the following taxes.

	exempted: 1	reduced: 2		
	unchanged: 3	increased: 4		
(1) national tax	- Corporate Tax	_____	_____	%
	Value added Tax	_____	_____	%
	Defense Tax	_____	_____	%
(2) local tax	- Property Tax	_____	_____	%
	Acquisition Tax	_____	_____	%
	Registration Tax	_____	_____	%

C15. Did you receive any investment tax credit or special depreciation allowance when you moved?

Yes = 1 No = 0

- (1) investment tax credit _____
- (2) special depreciation allowance _____

C16. If yes, roughly how much were they as percent of the total paid by your firm and how long the benefit periods?

- (1) investment tax credit _____ % _____ year(s)
- (2) special depreciation allowance _____ % _____ year(s)

C17. Roughly, how much was the purchase price of land per pyeong when your firm moved to this location?

_____ (won)

C18. Roughly, how much was the market price of land per pyeong in this area when your firm moved to this location?

_____ (won)

C19. Did your employees receive any benefits from government when they moved here with your firm?

Yes = 1 No = 0

C20. If yes, what were they, and how much was the amount as percent of the total for each of the following?

- (1) housing loan _____ %
- (2) exemption of capital gain tax _____ %
- (3) other, please specify _____ %
- (4) other, please specify _____ %

Card No. 14

C21. Did you receive any type of relocation subsidy (i.e., funds for relocation preparation or loss carry-over of relocation expense in calculating corporate tax, etc.)?

Yes = 1 No = 0

C22. Did you receive any capital gain tax exemption from the sale of plant and land at the previous location?

Yes = 1 No = 0

C23. If yes, roughly what was the amount as percent of the total tax?
_____ %

C24. Did you receive any other benefits from government when you relocated?

Yes = 1 No = 0

C25. If yes, which were they?
(please specify the type of benefit, interest rate and benefit or repayment period.

		interest rate (%)	period (years)
(1) promotion loan for small and medium-scale firms	_____	_____	_____
(2) housing loan	_____	_____	_____
(3) subsidy for pollution-control facilities	_____	_____	_____
(4) other, please specify	_____	_____	_____

C26. List five items among the following government incentive measures that you considered to be most important when you made the decision to relocate your establishment to the present location. (List in order of importance).

- (1) credit subsidies (plant site preparation, relocating expenses, plant construction expense, energy conservation support, etc.)
- (2) loss carry-over in corporate tax calculation for the relocating expense
- (3) corporate tax exemption for the capital gains and relocation compensation grants
- (4) exemption of capital gain tax and surcharge
- (5) capital investment tax credit after relocation or special depreciation allowance for the first year after relocation
- (6) property tax exemption
- (7) exemption of acquisition or registration tax
- (8) low purchase price of land area
- (9) priority right for purchasing the plant site
- (10) high priority given to the location for installation of basic urban infrastructure (road, water, sewerage, housing, etc.)
- (11) government purchase of the previous plant site

Part III. PLANS FOR CAPACITY EXPANSION OR RELOCATION

Card No. 15

A1. Do you have any plans for expanding your operations within the next five years?

Yes = 1 No = 0

A2. If yes:

1) Is this expansion likely to take place:

(1) here at this location _____

- (2) another location in Seoul: Gu _____
- (3) another location in Gyeonggi
Si (Gun), Gu _____
- (4) another location outside Seoul and Gyeonggi:
Si (Gun), Gu _____
- 2) Roughly how many new workers will you hire as a result of this expansion? _____
- 3) How many additional floor space will you require?
_____ pyeong

A3. Do you have any plans for relocating entire operation from the present site to another location in the next five years?
Yes = 1 No = 0

A4. If yes:

- 1) Is the new location likely to be:
 - (1) in Seoul: Gu _____
 - (2) in Gyeonggi: Si (Gun), Gu _____
 - (3) outside Seoul and Gyeonggi: Si (Gun), Gu _____
- 2) Roughly how would your labor force change?
 - Will increase by _____ persons
 - Will decrease by _____ persons
- 3) How much additional floor space will you require?
_____ pyeong

A5. If you have plans for expanding your operations at another location or for relocating your establishment, what factors would you consider to be most important in selecting the new location?

List five in order of importance.

(If needed, the interviewer should assist the respondent by referring to G1 in Part I).

- (1) _____
- (2) _____
- (3) _____
- (4) _____
- (5) _____

Part IV ALTERNATIVE LOCATION CONSIDERATION OF NEWLY ESTABLISHED FIRMS

(This part is to be completed for newly established firms in or after 1979).

Card No. 16

A1. Did you consider other locations than this one when you were looking for a plant site?

Yes = 1 No = 0

A2. If yes, where were the locations, and what were the main reasons for not choosing these locations? Specify reasons for each location.

- | | Si (Gun), Gu | reasons |
|-----|--------------|---------|
| (1) | _____ | _____ |
| (2) | _____ | _____ |
| (3) | _____ | _____ |

- A3. Did you receive a credit subsidy relating to the construction of new plant?
Yes = 1 No = 0
- A4. If yes, what percent of your total capital investment was this credit?
_____ %
- A5. What were the interest rate and repayment period?
(1) interest rate: _____ % per year
(2) grace period: _____ year(s)
 repayment period: _____ year(s)
- A6. Do you think that you could have received a credit subsidy if you had chosen other locations instead of the present location?
(1) Yes = 1 No = 0
(2) If yes, what would have been the likely lending rate for such a credit?
_____ %
- A7. Did you receive any tax benefits by establishing your firm at this site?
 none: 1 exempted: 2
 reduced: 3 increased: 4
(If 3 or 4, please specify the amount of change as percent of total payment for each of the following taxes.)
(1) national tax:
 Corporate Tax _____ %
 Value Added Tax _____ %
 Defense Tax _____ %
(2) local tax:
 Property Tax _____ %
 Acquisition Tax _____ %
 Registration Tax _____ %
- A8. Did you receive any investment tax credit or special depreciation allowance by establishing your plant at this site?
Yes = 1 No = 0
(1) investment tax credit _____
(2) special depreciation allowance _____
- A9. If yes, roughly how much were they as percent of the total paid by your firm and how long the benefit periods?
(1) investment tax credit _____ % _____ years
(2) special depreciation allowance _____ % _____ years

Card No. 17

- A10. Roughly, how much was the purchase price of land per pyeong when you established your firm at this site?
_____ won
- A11. Roughly, how much was the market price of the land per pyeong in this area when you established your firm at the present site?
_____ won

A12. Did your employees receive any benefits from government when your firm was newly established at this site?

Yes = 1 No = 0

A13. If yes, what were they, and how much was the amount as percent of the total for each of the following?

(1) housing loan	_____	_____	%
(2) exemption of capital gain tax	_____	_____	%
(3) other, please specify	_____	_____	%
(4) other, please specify	_____	_____	%

A14. When you newly established your firm, did you receive any other benefits from government?

Yes = 1 No = 0

A15. If yes, which were they?

(Please specify the type of the benefit, interest rate, and benefit or repayment period).

	interest rate	period
	(%)	(years)
(1) promotion loan for small and medium-scale firms	_____	_____
(2) housing loan	_____	_____
(3) other, please specify	_____	_____
(4) other, please specify	_____	_____

A16. List five items among the following government incentive measures that you considered to be most important when you chose this site? (List in order of importance).

- (1) credit subsidies (plant site preparation, plant construction expense, energy conservation support, etc.)
- (2) capital investment tax credit or special depreciation allowance for the first year
- (3) property tax exemption
- (4) exemption of acquisition or registration tax
- (5) low purchase price of land area
- (6) priority right for purchasing the plant site
- (7) high priority given to the relocation for installation of basic urban infrastructure (road, water, sewerage, housing, etc.)

Part V. EXPANSION OR RELOCATION CONSIDERATION OF FIRMS LOCATED AT THE PRESENT SITE IN OR BEFORE 1978.

Card No. 18

A1. Since 1979, have you seriously considered relocating to another location?

Yes = 1 No = 0

A2. Since 1979, have you seriously considered opening a branch plant?

Yes = 1 No = 0

A3. Since 1979, has your firm established a branch plant at another location?

Yes = 1 No = 0
If yes, where is the branch plant? _____ Si (Gun), Gu

A4. Instead of relocating or opening a branch, have you expanded your plant at this location?

Yes = 1 No = 0

A5. Since 1979, has your plant absorbed operations of other plant(s) that were closed down?

Yes = 1 No = 0

A6. If yes, where were those plants located?

(1) _____ Si (Gun), Gu

(2) _____ Si (Gun), Gu

(3) _____ Si (Gun), Gu

A7. Since 1979, has your plant acquired other plant(s) in the same production line?

Yes = 1 No = 0

A8. If yes, where were those plants located?

(1) _____ Si (Gun), Gu

(2) _____ Si (Gun), Gu

(3) _____ Si (Gun), Gu

Interviewer's Remarks

Immediately after the interview, write your opinions about the reliability of responses, the extent of cooperation, names and titles of other people who were present at the interview and their influences, the parts which were more difficult to answer, and the parts with unclear answers.

If the interview was rejected, or was impossible to carry out explain why (for example, busy; too many questions; such a firm does not exist, etc.)