Urbanization and Quality of Life in Asia (2)
——From the perception of urban administrators——

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1. Introduction

Many cities in Asia, as in many other parts of the world, find their cities' level and rate of urbanization excessive and unable to provide necessary service and facilities to the residents (United Nations, 1989). This in turn produces various urban problems in housing, employment and social services, crime, traffic congestion and pollution, etc. A recent study found that among the 100 largest cities in the world, 34 cities are located in Asia. Except for three cities in Japan, most cities are located in the developing countries in Asia (Population Crisis Committee, 1990). This reality breaks the historical connection between city size and levels of economic development. Some of the cities in Asia, in part from rapid population growth, find their population size unmanageable, lose the strength and vitality.

In this study, we will try to understand the impact of urbanization on various urban conditions. There has been an argument on city size and the level of urban condition, sometimes known as the optimum size of cities (Henderson, J. 1986; Thomas, V., 1978). Does a larger city enjoy a better quality of urban life than a smaller city? There are a number of reasons that a larger city is more beneficial than a smaller city. The concentration of population, for example, may attract business and capable professionals. Or there may be more potential opportunity for employment in a larger city than in a smaller city. In this study, we can not attempt to arrive at a definitive conclusion on this subject. We can, however, explore how urban condition is associated with population size and growth for at least some cities in Asia.

2. Data Source

Data for this section come from two sources. First, demographic conditions and urban administrators' of urban problems are from the Asian Urban Administrators' Enquiry collected by the Asian Urban Information Center of Kobe.

The Kobe Asian Information Center was formed in 1989 to provide information about urban problems in Asia. It was especially concerned with giving voice to Asian urban administrators, who the Center calls the people of the "front line" of urban problems. The Center plans to carry out a biennial survey, or Enquiry, to ask urban administrators to assess their major problems, and to indicate what they are doing to address those problems. It also intends to carry out other studies of Asian urban conditions, and to disseminate the results through a newsletter to be sent to the administrators. The first of the planned biennial Enquiry took place in 1989–90. It gives us the opportunity to examine the quality of life of certain Asian cities, based on what are essentially "subjective" judgements. Although these are subjective judgements, they are the judgements of experts who deal daily with local urban problems. Thus they might be accorded a higher degree of interest than would such judgements drawn from the public at large. As we shall see, shortly, we also have the opportunity to learn more about the character of those subjective judgements by comparing them with certain objective measures of urban conditions.

The study reported here was started in April, 1989, aiming to collect information on 270 cities in 11 countries: Bangladesh, India, Indonesia, Japan, Malaysia, Nepal, Pakistan, The Philippines, The Republic of Korea, and Thailand. As of December, 1990, 128 cities in eight countries had returned questionnaires which we use in this study: India

(15)[1], Indonesia (30), Jaman (26), The Republic of Korea (31), Malaysia (5), Nepal (5), The Philippines (12), and Thailana (4).

The Enquiry was carried out through mailed, self – administered questionnaires distributed through select officials, acting as access persons in each country. In most cases, the repondents were the Mayor or Chief Administrator in each city. For the 102 cities outside of Japan, the respondent is clearly identilied as the Mayor or Chief Administrative Office in 80 cases. In the case of Indonesia, however, the questionnaire was completed by a committee headed by the Director of the Local Planning Agency. In other cases, the respondent was primarily the Chief Engineer or Director of Public Works. In Japan, 23 out of 26 questionnaires were completed by the Director of the City Planning and Management Department. In effect, respondents were similar in the level of formal positions across the eight countries, though, of course, we have no systematic information of the specific characteristics or of the information sources in those offices. There is room for questioning whether the committee respondent in Indonesia is similar to the individual respondents in other cities. Further, a slightly different questionnaire was used for Japanese cities to bring the questions more in line with the realities of Japanese urban conditions. This means that in some cases we will treat Japanese data separately from the other countries.

Second, a set of objective urban indicators for individual cities were collected and published by the Japanese (1988) and Korean (1988) governments. Another set was collected more recently by the Population Crisis Committee (1990) in its study of the world's 100 largest cites. All of these objective urban indicators permit us to examine the correspondence between objective indicators and urban administrators' assessments of urban conditions.

We can use some of the objective indicators which approximately reflect those on which the urban administrators gave their assessment on urban conditions. Lack of correspondence, or a large difference between objective indicators and administrators' assessments does not necessarily invalidate either measure. All of these objective urban indicators simply provide another opportunity to measure the quality of urban life. Since the quality of urban life has a multidimensional character, both the objective and subjective measures contribute to assess the reality of urban conditions. For example, both the prevelence rate of sewage and the urban administrators judgement of the satisfaction with sewage condition may be used to establish a reasonably accurate assessments of overall sewage condition and of how people perceive those. Or knowing both city personnel per capita and urban administrators' judgement of satisfaction with quality of city porsonnel, we may be able to identify hidden pockets of discontent or evaluate policy impact and effectiveness. At the same time, to the extent that there is a close correspondence between objective indicators and administrators' assessments, we can have greater confidence in our direct interpretation of those assessments.

There will remain questions about the reliability and validity of the responses. To address the issue of reliability we use responses to different questions in the instrument, which cover the same condition. For example, the instrument asks about population figures for 1960, 1970 and 1980. From these we can calculate total rates of increase and match these administrators' perceptions of the rate of growth, are derived from other questions. Appendix A undertakes this type of internal analysis to determine how reliable are the administrators' perceptions of problems.

3. Country Profiles

To better understand the urban administrators' perceptions of their city problems, it will be useful to provide a brief description of the countries in which the cities are located. It is even more important to note how those countries have changed over the past few decades. Later in the report, we shall see that administrators' perceptions of urban are closely related to both the levels and changes of social and economic conditions in their countries. Seventeen indicators of change are shown for each of the eight countries in Table 1.

The eight countries span the range from the most to the least developed. Nepal's per capita GNP

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1   Figures in parenthesis represent the number of replies.

Table 1. Country Profiles: Indicators of Socio-Economic Change 1965–1988

Indicators	India		Indonesia		Japan		Korea		Malaysia		Nepal		Philippines		Tailand	
	1965	1988	1965	1988	1965	1988	1965	1988	1965	1988	1965	1988	1965	1988	1965	1988
Total population (Million)	495	815	107	174	98	122	28	42	9	16	10	18	32	59	30	54
GNP/cap (US$)	–	340	–	440	–	21,020	–	3,600	–	1,945	–	180	–	630	–	1,000
% growth (a.a) '65–'85	–	1.8	–	4.3	–	4.3	–	6.8	–	4.0	–	3.6*	–	1.6	–	4.0
Urban population																
% Total population	19	27	16	27	67	77	32	69	26	41	4	9	32	41	13	21
% growth (a.a) '80–'88	–	4.0	–	4.8	–	0.7	–	3.7	–	4.9	–	7.4	–	3.7	–	4.7
GDP% from																
Industry	22	30	13	36	43	41	25	43	25	–	11	17	28	34	23	35
Agriculture	44	32	56	24	9	3	38	11	28	–	65	56	26	23	32	17
Lab. force %																
Industry	11	13[a]	9	15[a]	32	39[a]	12	29[a]	13	16[a]	2	2[a]	16	17[a]	5	9[a]
Agriculture	74	69[a]	71	55[a]	26	12[a]	58	34[a]	59	50[a]	95	93[a]	57[a]	46[a]	82	76[a]
Infant Mortality Rate	150	97	128	68	18	5	62	24	55	23	171	126	72	44	88	30
Crude Birth Rate	45	32	43	28	19	11	35	16	40	30	46	42	42	31	41	22
Crude Death Rate	20	11	20	9	7	7	11	6	12	5	24	15	12	7	10	7
Total Fertility Rate	6.2	4.2	5.5	3.4	2.0	1.7	4.9	1.8	6.3	3.7	6.0	5.8	6.8	3.8	6.3	2.5
Contraceptive Prevalence Rate[b]	–	35	–	45	–	64	–	70	–	51	–	15	–	44	–	66
School Enrollment Rate %																
Primary	74	98	72	118	100	102	101	101	90	102	20	82	113	106	78	95
Secondary	27	39	65	115	82	96	35	88	28	59	5	26	41	68	14	28
Passengers cars (per 1000 pop.)	0.9[c]	1.3[d]	1.6[c]	6.4[d]	22.1[c]	240.9[d]	0.6[c]	20.5[d]	16.8[c]	91.3[d]	0.3[c]	1.5*	4.3[c]	6.4[d]	2.1[c]	10.9[d]

a. 1980 figure, b. 1986 figure, c. 1965 figure, d. 1987 figure,
Source: United Nations, World Population Prospects 1988; World Bank. Development Report 1989 Various Tables; World Bank, World Tables, The Third Edition, Vol. II–Social Data, 1983; IRF, World Road Statistics 1985–88; *Our estimates.

($180) is one of the lowest in the world, and Japan's ($21,020) is the second highest.[2] In between are, in rank order, India ($340), Indonesia ($440) Philippines ($630), Thailand ($1,000), Malaysia ($1,945), and Korea ($3,600). All other social and economic measures show the same rank order, with the exception of automobiles, where Korea ranks behind Malaysia and the Philippines. Otherwise, the wealthier countries are more urbanized, have lower birth and death rates, are more industrialized, have higher levels of educational achievement, and have more passenger cars per capita.

Equally important, however, is to note that all countries have experienced significant changes over the past few decades. Even the poorest, Nepal, has more than doubled its per capita GNP and its proportion in urban areas in the past two decades. It has also seen a significant reduction in the death rate, and a modest reduction in the birth rate as well. Perhaps most striking is the spread of education. Even Nepal now has over 80 percent of its primary aged school children in school. All of the other countries have reached essentially universal primary education, with enrollment rates that go above 100 percent.[3] The economic structure of all countries has also changed significantly. In addition

to becoming more urbanized, all have increased the proportion of GDP that comes from industry and reduced the proportion coming from agriculture. All except Nepal have seen a proportionate reduction in the agricultural labor force and a complementary rise in the proportion of the labor force in industry. Korea has seen the most dramatic change in all indicators, again except automobiles. In the past two decades it has moved from a predominately rural and agrarian to an urban industrial society. In effect all countries have become more urbanized and industrialized, and all have seen significant rises in human welfare.

4. Population Size

Table 2 shows the minima, maxima and means of city population size in 1980. The range of city sizes included is substantial, from a small city of less than 15,000 to a large one of 8.2 million. The response from Jakarta comes from two different administrative districts of the city, rather than from one overall city administrative unit. Thus the range for Indonesia is smaller than it would be if the two city districts were reported for greater Jakarta as a whole. Bombay, India is the largest single city in-

Table 2. Population Size of 128 Asian Cities

	No. Reporting	Range		Mean
		Minimum	Maximum	
1980 City Population in 000				
All Cities	128	13	8,243	437
India	15	109	8,243	848
Indonesia	30	14	1,580	376
Japan	26	115	746	320
Korea	31	100	3,654	498
Malaysia	5	68	937	355
Nepal	5	34	315	107
Philippines	12	81	1,560	458
Thailand	4	73	100	90

2　Japan ranks 120 in the World Bank list from poorest to wealthy countries. It is second only to Switzerland in GNP per capita. Nepal ranks 11th. Only ten of the 121 countries reported in the World Bank tables are poorer than Nepal. The rank orders of other six countries are: India 22, Indonesia 34, Philippines 44, Thailand 57, Malaysia 74, and Korea 89.

3　When countries are expanding their educational systems rapidly they can register more than 100 percent of the age group in primary school, largely because the school draws young people over the age of 12, and under 6, which are the years used as the denominator in the ratio.

Table 3. Area and Density of 124 Asian Cities

	No. Reporting	Range		Mean
		Minimum	Maximum	
Area in Square Kilometers				
All Cities	124	5.8	805	166
Density: Pop per sq. km.				
All Cities	124	311	109,000	4,948

Table 4. Reported Current Urban Annual Growth Rates, 1989

	No. Reporting	Reported Current Percent Change		
		Minimum	Maximum	Mean
Totals				
All Cities				
In Migration	98	−4.2	15.4	1.9
Natural Increase	102	−1.1	5.5	1.4
Total	105	−3.0	17.9	3.0
All Excluding Japan				
In Migration	76	−4.2	15.4	2.3
Natural Increase	80	−0.6	5.5	1.7
Total	82	−3.0	17.9	3.7
India				
In Migration	4	0.2	4.0	1.5
Natural Increase	5	1.0	2.3	1.7
Total	5	1.6	6.0	2.9
Indonesia				
In Migration	27	−1.8	7.5	1.6
Natural Increase	27	−0.6	3.0	1.3
Total	29	−1.1	9.3	2.6
Japan				
In Migration	22	−0.8	1.7	0.3
Natural Increase	22	−1.1	1.3	0.4
Total	23	−0.3	2.5	0.6
Korea				
In Migration	28	−4.2	15.4	2.9
Natural Increase	27	0.1	3.1	1.4
Total	29	−3.0	17.9	4.3
Malaysia				
In Migration	4	−1.3	2.6	1.3
Natural Increase	5	1.0	5.5	2.5
Total	4	1.2	4.1	3.1
Nepal				
In Migration	5	1.6	5.5	3.4
Natural Increase	5	2.5	2.5	2.5
Total	5	4.0	8.0	5.8
Philippines				
In Migration	5	0.3	5.0	2.1
Natural Increase	8	1.6	4.4	2.6
Total	7	1.0	7.8	3.4
Thailand				
In Migration	3	1.0	5.5	3.9
Natural Increase	3	0.6	5.2	3.3
Total	3	1.6	10.3	7.1

cluded, and the smallest is Sawahlunto in Indonesia. Appendix B lists all cities in this review together with their sizes and growth rates.

Two-thirds of the cites covered had populations between 100,000 and 500,000 in 1980. There are 19 cities below 100,000, and 10 that are over 1 million. All of these smaller and larger cities are in countries other than Japan. The selection of cities for the Enquiry in Japan focused on what have been called medium-sized cities. Thus of the 26 cities surveyed in Japan, 23 were between 100, 000 and 500,000, and only three were larger than 500,000 (Okayama: 513,000; Kumamoto: 526,000; and Chiba: 746,000). Later we shall examine the impact of city size on a number of other conditions.

5. Area and Density

The area of the 124 cities who reported their geographic size also varies greatly. Table 3 shows that for all the 124 the range is from 5.8 to 805 square kilometers, with a mean of about 166. For the most part, however, these cities are less than 500 square kilometers. This includes 22 of the 26 Japanese cities and 92 of the 98 cities in the other seven contries. Only four Japanese cities, two in Indonesia, and three in Korea spread over more than 500 square kilometers, and all of these are less than 1000 square kilometers.

In density, we have the same large range, from 311 to 109,000 persons per square kilometers and mean of 4,948. There is a considerable cluster, however, in the range 1000 to 10,000 persons per square kilometer. This includes 14 of the 26 Japanese cities and 83 of the cities in seven countries.

Since these cites have for the most part been selected to represent the middle sized cites, they cannot be taken to represent the overall Asian urban scene. In effect, we have information on cities that are typically between 100,000 and 1 million in population, just under 500 square kilometers in area, and have densities that range between 1000 and 10,000 persons per square kilometer.

6. Reported Current Rates and Sources of City Growth

The reported current growth rates of these cities also varies considerably, as does the source of the growth: in-migration or natural increase. This can be seen in Table 4. Reported in-migration rates average 1.9 percent per year, natural increase 1.4 percent per year, and total growth 3.0 percent per year. Each rate shows wide variation, as might be expected. In-migration rates from -4.2 to $+15.4$ percent per year. Natural increase ranges from -1.1 to $+5.5$ percent per year, and total growth ranges from -3.0 to $+17.9$ percent per year. Note, however, that these are reported rates, and obviously reflect estimates that are not necessarily based on census or vital registration data.

As might be expected, growth rates for Japan are far lower than those for the other countries. All three reported growth estimates for Japan are less than 1 percent per year. Only three cities report estimates of more than 1 percent per year (Nara 1.1, Kawaguchi 2.0, Urawa 2.3, and Yokkaichi 2.5 percent). Seven of the Japanese cities, on the other hand, report an estimated *negative* growth rate. The 82 cities outside of Japan reporting estimated growth rates show an average of 3.7 percent per year in total growth. Only one of these 82 reports a negative growth rate (Magelang in Indonesia, -1.1 percent). Slightly over half of them (44) report total growth rates greater than 3 percent per year. Both in distributions and mean levels, growth from in-migration is more than twice that from natular increase.

7. Administrators' Perceptions of Growth

Another question asked administrators to state whether the movement of the population in the 1980s constituted a Great Inflow. a Small Inflow, Stagnation, a Small Outflow, or a Great Outflow. Table 5 shows the distribution of the administrators on this measure, and Figure 1 provides a graphic display of the overall distribution. It is obvious that most of the administrators see a substantial flow of population into their cities. Almost half (40%) consider this a great inflow. There are only 19 cases where an outflow is perceived. As might be expected, because of its more advanced economic condition and higher level of urbanization, Japan shows the greatest amount of outflow, with 8 administrators reporting an outflow, and another five reporting stagnation.

The administrators were asked whether they

Table 5. Judgements of Population Movement by 126
Asian Urban Administrators

Country No. Cities	No. Reporting	Gr. In.	Sm. In.	Stag.	Sm. Out.	Gr. Out.
India 15	15 (100%)	8 (53%)	4 (27%)	2 (13%)	1 (7 %)	
Indonesia 30	29 (100%)	14 (48%)	7 (24%)	4 (14%)	1 (3 %)	3 (11%)
Korea 31	31 (100%)	12 (39%)	15 (48%)	3 (10%)	1 (3 %)	
Malaysia 5	5 (100%)	1 (20%)	3 (60%)		1 (20%)	
Nepal 5	5 (100%)	4 (80%)	1 (20%)			
Philippines 12	12 (100%)	9 (75%)	2 (17%)			1 (8 %)
Thailand 4	3 (100%)				1 (33%)	2 (67%)
Japan 26	26 (100%)	3 (12%)	10 (38%)	5 (19%)	7 (27%)	1 (4 %)
All 128	126 (100%)	51 (40%)	42 (33%)	14 (11%)	12 (10%)	7 (6 %)

Gr. In.=Great Inflow; Sm. In.=Small Inflow; Stag.=Stagnation
Sm. Out.=Small Outflow; Gr. Out.=Great Outflow

considered the problem of population movement into or out of their cities to be an Important and Urgent Problem, only an Important Problem, or Not an Important Problem. As Table 6 shows, 126 of the 128 respondents replied to this question. (See also Figure 2).

Of those, 44 (35%) thought this constituted an important and urgent problem. Another 59 (48%) thought the problem was an important one. In only 21 (18%) cities did the administrators see this movement to be no problem. The countries differed greatly, however, in the distribution of these perceptions. The problem is perceived as urgent by two thirds of the Indian and The Philippines administrators. Just under half of the administrators in Indonesia, Ma-

laysia and Nepal, and only a quarter of the Japanese administrators see it as an urgent problem. On the other hand, only a quarter or less in all countries see the movement as no problem.

As might be expected, there is a fairly close relationship between the perception of population movement and the perception of problems in that movement. It is not, however, a perfect relationship. Table 7 shows the relationship between the perception of movement and the perception of a problem, and Figur 3 provides the graphic display. For those who see a Great Inflow in the 1980s, more than half (54%) perceive this to be an urgent problem, less than 10 percent see it to be no problem. When there appears to be no movement, or stagnation, a third

Table 6. Perceptions of A "Problem" in The City's Migration Flow

Country	No. Reporting	Percent Perceiving Flow as:			No Reply
		An Urgent Problem	A Problem	No Problem	
India	15 (100%)	9 (60%)	2 (13%)	4 (27%)	
Indonesia	27 (100%)	12 (44%)	12 (44%)	3 (12%)	3
Korea	31 (100%)	5 (16%)	18 (58%)	8 (26%)	
Malaysia	5 (100%)	2 (40%)	2 (40%)	1 (20%)	
Nepal	5 (100%)	2 (40%)	3 (60%)	0	
Philippines	12 (100%)	8 (67%)	4 (33%)	0	
Thailand	3 (100%)	0	3 (100%)	0	1
Japan	26 (100%)	6 (23%)	15 (58%)	5 (19%)	
Total	124 (100%)	44 (35%)	59 (48%)	21 (17%)	4

Inflow Stagnation Outflow

% Administrators Parceiving Migration

See Table 5.5
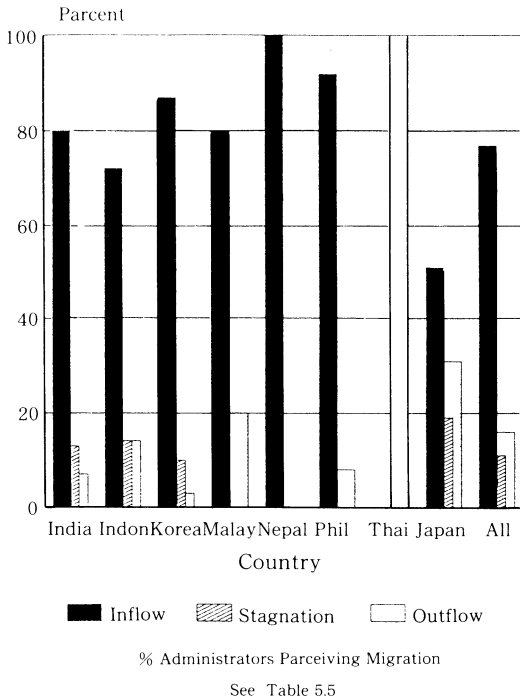
Figure 1. Perceptions of Urban Migration: 1980s

Urgent Problem No Problem

% Perceiving Migration as a Problem

See Table 5.6
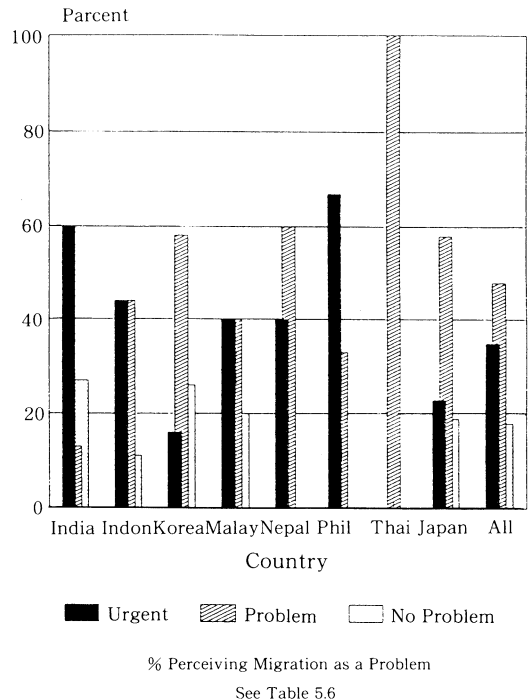
Figure 2. Perceptions of Migration Problem: Urgent Problem, Problem, No. Problem

Table 7. Perceptions of Migrati Problems by Percepions of the Migrant Flows in 1980s

Flow Perceptions	No. Reporting	Perception of Problem			No Answer
		Urgent Problem (%)	Problem (%)	No Problem (%)	
Total	123	41 (33%)	59 (48%)	23 (19%)	3
Great Inflow	48	26 (54%)	18 (38%)	4 (8 %)	2
Small Inflow	42	7 (17%)	24 (57%)	11 (26%)	
Stagnation	14	5 (36%)	4 (28%)	5 (36%)	1
Small Outflow	12	2 (17%)	8 (66%)	2 (17%)	
Great Outflow	7	1 (14%)	5 (72%)	1 (14%)	

% Perceiving urgent problem

Perception of Migration Flow
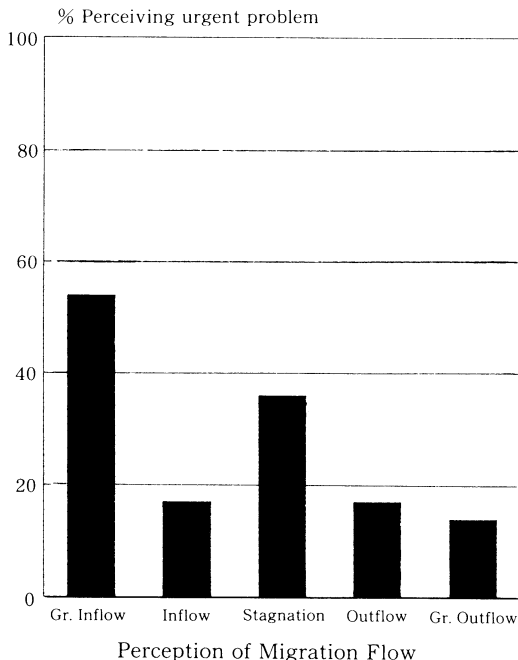
See Table 7

Figure 3. Perceptions of Problems by Perceptions of Migration

(36%) see the movement to be no problem. While there is a predicted overall relationship — i. e., more perception of a problem where the inflow is greater — whether this movement is a problem or not obviously depends on other conditions as well. Identifying what those other conditions are is a specific analytical problem that is addressed later.

Finally, the administrators were asked if they had special projects to deal with the problem. One hundred and fifteen replied, of which 46 (40%) said they had *NO* projects to address the problem. Five (4%) said they had projects to *reduce the inflow*; five (4%) had projects to *promote an outflow*; and 42 (37%) had projects to *redirect* the population to other places. The latter tend to be development programs in suburbs or in satellite towns. Japan is somewhat unique in this group of countries in that nine of its administrators reported programs to *promote inflow*, and one reported a program to *limit the outflow*. Thus overall the cities are not using dirrect methods to stem the flow of urbanization. This may reflect the recognition that attempting to move peple out, or to stop the movement into the cities by direct action does not work. It requires far more force than most governments can mobilize to make such direct actions work, and when such attempts are made, the results are usually bed for both the

government and the people.

8. Assbssing Urban Conditions

8.1. The Method

To assess urban conditions, the administrators were asked to judge each of 39 specific conditions, indicating for each whether this was an *Urgent Major* problem a *Serious* problem, or merely a *Minor* problem. For each condition they could also indicate that it was not a problem, but was a *Satisfactory* condition, or even an *Advantage* for the city. Each condition was scored from 1 for urgent major problem to 5 for advantage. This permits us to examine the overall score for each city and each country, and the overall score for all the cities together. We can also examine the extent that any specific condition or group of similar conditions constitutes a *problem* or *advantage* for the city.

The 39 conditions were grouped under 12 major categories as follows.

1. General:
   Health, Educational Level.
2. Utilities:
   Water, Sewage, Garbage Disposal.
3. Transportation:
   Public Transportation, Traffic Volume, Traffic Flows.
4. Housing:
   Population without Shelter, Low Cost Housing, Middle Income Housing, High Income Housing.
5. Employment:
   General Unemployment, Male Unemployment, Female Unemployment, Child Labor.
6. Health and Family Planning:
   Primary Health Care, Hospital Care, Family Planning Services, Social Welfare Services.
7. Education:
   Primary Education, Secondary Education, Vocational Education, Tertiary Education.
8. City Personnel:
   Quality, Quantity.
9. City Revenues:
   Size of Revenues Base, Control of Revenues.

10. Crime:
    Violent Crime, Property Crime, Prostitution, Organized Crime, Drug Abuse.
11. Pollution:
    Industrial Waste, Sewage, Automobile Exhaust, Noise Pollution.
12. Industrial Change:
    Rapid Industrial Growth, Manutacturing Decline

In each the 12 groups, there was also space for indicating any "*Other*" conditions the administrators found to be important for their cities.

For Japan questions on education, family planning, crime and industrial change were omitted as they were considered less relevant in that context. The Japanese enquiry also included more specific questions on social welfare (Elderly, Handicapped, Children and Other Social Welfare Problems) and on transportation (Bus, Subway, Other Public Transportation, Traffic Flows, Illegal Parking, and Other Transportation Problems).

8.2. Basic Descriptions

We can begin with the overall assessment of the urban condition in each country, then move to the 12 categories of problems, and finally focus on more specific, individual conditions. To examine the overall condition, we can simpply take the average of all the scores of the 39 conditions. Recall that a score of 1 is given if the condition is considered an urgent major problem, and a score of 5 is given if the condition is considered an advantage for the city. This gives us a positive score, such that the higher the score the better the condition is perceived to be.

8.3. Overall Scores

Table 8 shows the mean scores for each of the 12 categories of conditions, both for all cities, and for each country. These are also displayed graphically in Figures 4 through 9. This allows us to see which types of problems are most serious and which conditions are most favorable for the cities. Since the Japanese figures are not directly comparable with those for the other seven countries, it will be necessary to separate the groups of countries somewhat. For our 102 cities other than Japan, the overall mean for all 39 conditions was 2.83. The range was from a low of 1.73 (Hadyai in Thailand) to a high of 4.03 (Penang Island in Malaysia). Malaysia had the highest overall mean (3.58), followed by

Table 8. Mean Scores* for 12 Categories of Urban Conditions in 8 Asian Countries

1 Cond.	2 India	3 Indon	4 Korea	5 Mala	6 Nepal	7 Phil	8 Thai	9 All	10 Japan
1. General	3.5	3.0	3.1	3.9	2.5	3.1	3.3	3.2	3.3
2. Pub. Ut.	2.4	1.9	2.7	3.3	2.2	2.1	2.6	2.3	2.7
3. Trans	2.7	2.4	2.5	2.9	2.7	2.4	1.5	2.5	2.6
4. Hous	2.9	2.8	2.8	4.0	2.8	2.5	2.6	2.8	3.3
5. Empl	2.2	2.1	3.0	3.5	3.0	2.3	2.3	2.6	3.4
6. Hlth/FP	3.7	3.2	3.4	4.0	3.0	3.3	3.4	3.4	3.1
7. Ed	3.6	3.0	3.3	4.1	2.9	3.5	3.6	3.3	—
8. Pers	3.4	**	3.0	3.4	2.0	3.1	4.0	3.0	3.1
9. Revnu	2.5	**	2.2	3.0	3.8	3.6	2.3	2.5	3.0
10. Crime	3.3	2.9	2.8	3.5	3.0	2.8	2.4	2.9	—
11. Pollut.	2.5	2.7	2.5	3.3	2.3	2.5	2.1	2.6	3.0
12. Indus	3.1	2.8	2.5	4.1	3.4	3.0	2.7	2.9	—
All	2.96	2.66	2.84	3.58	2.78	2.80	2.70	2.83	3.05

* 1 = Urgent Major Problem, 2 = Serious Problem, 3 = Minor Problem,
  4 = Satisfactory Condition, 5 = Advantage for City
** omitted since the scores are based on only two responses.

India (2.96), Korea (2.84), The Philippines (2.80), Nepal (2.78), with Thailand (2.70), and Indonesia (2.66) having the lowest scores, or the most serious urban problems. The overall mean score for Japan was 3.05, with a range from 2.20 to 3.93.

8.4. Country Scores

First we note from the last row in the table that Malaysia has the highest overall mean (5.58), followed by Japan (3.05). They were the only countries with means above 3.0. India and Korea come next, both remaining slightly above the overall average of 2.83. The Philippines, Nepal, and Indonesia all have scores below the overall mean. This overall ranking is probably best explained by a combination of wealth and urbanization. Japan is by far the most wealthy and has the capacity to solve many of the urban problems that other countries find so pressing. Malaysia is among the wealthiest of the less developed countries. It is less wealthy than Korea, but it has a strong rural deveropment program, and has a far lower growth of urbanization than Korea, thus it has less objective urban pressures. Malaysia's small size, lower density, slower urbanization and greater wealth therefore insulate it from some of the most serious urban problems we find in the less developed countries.

8.5. Problem Area Scores

From column 9, which prosides mean scores for each problem area for all countries excluding Japan,

we can see which problems are the most serious. With an overall mean score of 2.83, we find six conditions below the mean: Public Utilities, Transportation, Revenues, Employment, Pollution and Housing, in ascending order. These tend to be among the most serious problems for all of the countries in the survey. Further, they are problems that reflect poverty plus development and rapid urbanization, or the conditions that most strain urban infrastructure and services. For Japan the lowest score is for Transportation, followed by Public Utilities, Pollution, and Revenues, all below Japan's overall mean score. Like the poorer countries, Japan urban problems of transportation, public utilities and pollution. It does not, however, face the serious problems of poverty — low employment and lack of housing — that plague its less wealthy neighbors.

At the other end, on the side of more advantageous or less serious conditions, we have social sersices. For countries other than Japan, Health–Welfare – Family – Planning, and Education, plus Urban Personnel, are the conditions that are most favorably assessed by the urban administrators overall. These conditions also rank very high for all countries, though they are not the highest for all. For India, Indonesia, Korea, and Malaysia they are the highest categories. Thailand ranks the quality and quantity of urban personnel above its health
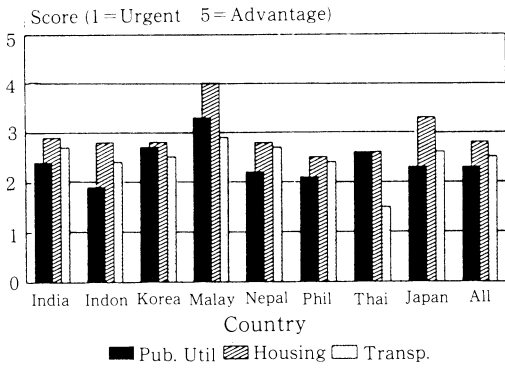
Score (1＝Urgent　5＝Advantage)

Figure 4. Urban Problem Scores:
Physical Infrastructure

Score (1＝Urgent　5＝Advantage)
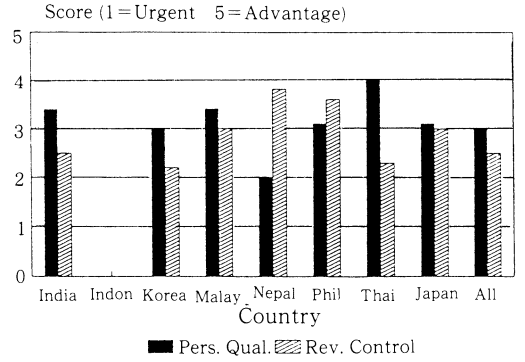
Figure 5.7. Urban Problem Scores:
Personnel Quality and Revenue Control

Score (1＝Urgent　5＝Advantage)
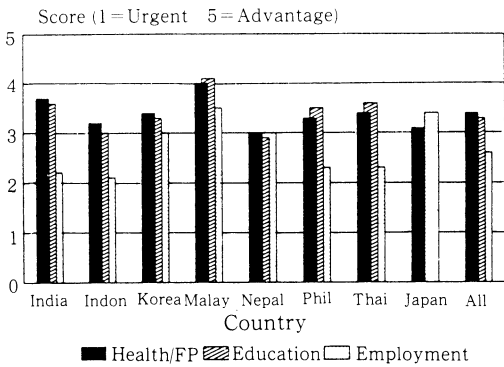
Figure 5. Urban Problem Scores:
Social Service and Employment

Score (1＝Urgent　5＝Advantage)
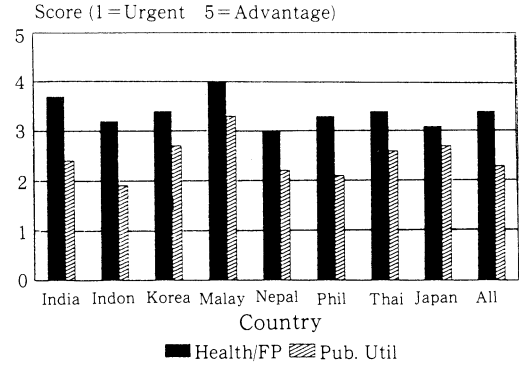
Figure 5.8. Urban Problem Scores:
Highest and Lowest Scores

Score (1＝Urgent　5＝Advantage)
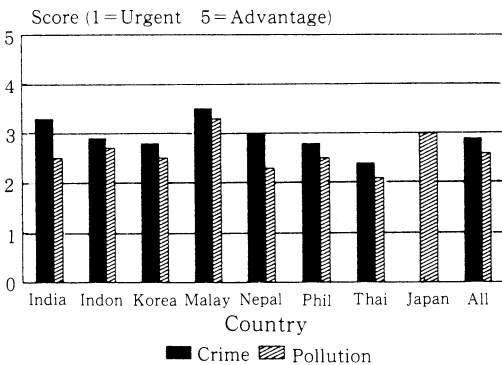
Figure 6. Urban Problem Scores:
Crime and Pollution

Score (1＝Urgent　5＝Advantage)
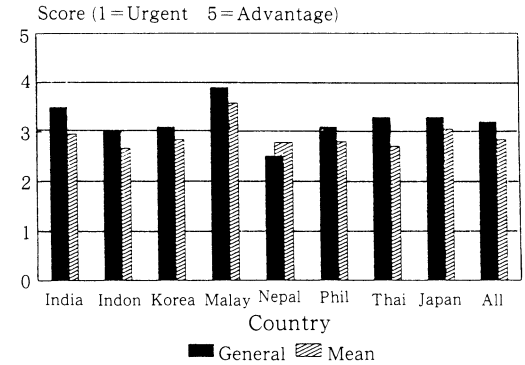
Figure 5.9. Urban Problem Scores:
General Well–being, Overall Mean

Table 9. Mean Scores* for 4 Categories** of Housing Problems in 8 Asian Countries

1 Cond.	2 India	3 Indon	4 Korea	5 Mala	6 Nepal	7 Phil	8 Thai	9 All	10 Japan
Total	2.9	2.8	2.8	4.0	2.8	2.5	2.6	2.8	3.3
Homeless	2.3	2.4	2.4	4.0	3.0	1.7	2.8	2.4	–
Lo Cost	2.5	2.1	2.3	3.2	2.0	1.9	2.3	2.2	3.1
Mid Cost	3.1	3.3	3.2	4.2	3.0	2.8	2.8	3.2	3.3
Hi Cost	3.7	3.2	3.2	4.6	3.0	3.6	–	3.4	3.6

* 1=Urgent Major Problem, 2=Serious Problem, 3=Minor Problem,
   4=Satisfactory Condition, 5=Advantage for City
**Homeless, Low Cost Housing, Medium Cost Housing, High Cost Housing
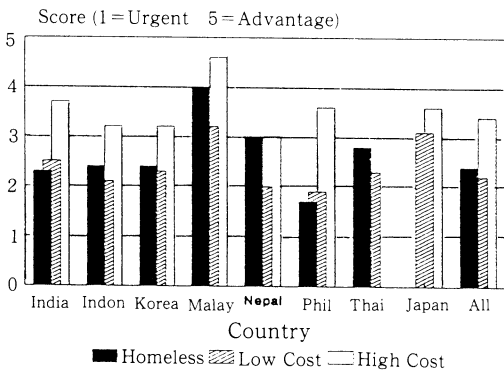
Figure 10. Housing Scores

and education services. For The Philippines, education is the highest, followed by its revenue conditions, putting health and family planning third place. For Japan, employment is the most advantajeous conditions followed closely by housing and general educational and health conditions, and personnel.

8.6. Housing Scores

Housing scores represent something of a special case. The administrators were asked about problems of the Homeless, and the supply of Low Cots, Middle Income, and High Income housing. Since these imply very different conditions of welfare, summing them does not present a full picture of the extent or the character of the problem. Table 9 provides the detaled breakdown of scores needed to assess the housing problem. Japan does not have a problem with the homeless, as many less developed countlies do, thus that portion of the question was omitted from the Japanese survey.

Obviously the means for the overall housing condition mask considerable differences between the problem of housing at different income levels. Housing has a wide range of scores, from some of lowest (1.7 for homeless in The Philippines) to some of the highest (4.6 for high income housing in Malayia). There is a general rise in the quality of the housing condition as perceived by the urban administrators as we go up the income scale. Higher cost housing represents less a problem than does low cost housing or the homeless, and this is true all countries.

Note that only India and The Philippines rank their homeless problem as the most sever, even worse than the problem of low cost housing. All the others rank the homeless as less a problem than that of low cost housing. For Malaysia the homeless issue is considered satisfactory, a condition that is clearly evident on the streets of Malaysian cities.

There is also a distressing sign here. If housing is a problem in general, it is not all housing, but only that for the poor that is seen as a serious problem. High and Middle income housing tends to be more available, and even to constitute an advantage in the perceptions of some of the administrators. Later, when we examine some of the relationships among problem area scores, we can raise questions about degrees of inequality in housing. The differences between scores for the homeless and for high income housing are graphically shown in Figure 10 above.

8.7. Individual Problem Scores

When we turn from the 12 broad categories to the 39 individual conditions in countries other than Japan, the broad pattern described above in section 8.5 remains generally stable, but it also shows some interesting turns. The conditions that received the

lowest scores included Garbage (2.0), Low Cost Housing (2.2), Sewage (2.3), Unemployment (2.3), Traffic flows and volume (2.3), and the Homeless (2.4). At the other end, the highest mean scores went to Family Planning (3.7) and Primary Education (3.7). Then came Secondary Education (3.5), High Income Housing (3.4), and Primary Health Care and Middle Income Housing (both with 3.3). Not surprisingly the most serious problems are those associated with poverty and crowding: congested traffic, lack of housing for the poor, inadequacy of the most basic utilities, and unemployment.

There is an important policy implication in this finding. Much of this set of problems could be alleviated by employment, which would provide the income for housing and the revenue base for better utilities. But the problems can also be adressed by public construction of those needed utilities. This would address the serious problem of the physical infrastructure, and it would also provide jobs and income for the poor.

8.8. Health, Family Planning, and Education

It is interesting to find health, family planning and education ranking highest in all countries. This is true even in Japan, though note that it is not family planning or education services, but the "General" level of health and education among the population. The thrust for economic development over the past few decades has turned attention and resources to human capital. As we saw earlier in the Country Profiles (Table 1), all of these countries, and most Asian countries as well, have made massive headway since roughly 1950 in providing basic education and health services to the great majority of their populations. Everywhere we have seen the decline of mortality and the extension of education as Asian countries have mobilized resources to fulfill the mass demands and the elite dreams that came with independence. Since abut 1960, Asia has also led the world establishing effective national family planning programs. The results are seen in the rise of contraceptive use rates, and the decline of fertility. All of this progress is clearly reflected in the urban administrators' assessment of problems

and advantages.

8.9. The Personnel Paradox and the problem of Centralization

Finally, we can draw attention to two administrative conditions whose interrelations provide an interesting window on specific problems some administrators face. This concerns the relationship between the quality and quantity of urban government personnel, and the revenue base and the control over revenues the city administrators have. We first deal with all countries except Japan, since the latter used slightly different questions on these items. The quantity of personnel scores above average (3.03), and the quality of personnel is judged to be esen higher (3.10) for the 70 administrators who provided responses.[4] On the other hand, the revenue base is considered a problem (2.54), and the city's control over revenue is an even more serious problem (2.49). That is, personnel is less a problem than the magnitude and control of financial resources. Especially striking is the difference between the administrators' perceptions of the quality of their personnel, and the control they are given over financial resources. These are shown in Figure 7 Overall, personnel quality is less a problem than a resource control. This pattern of difference is, however, found only in Korea, Malaysia, Thailand, and India. In Indonesia there were only two responses on the quality and quantity of personnel, thus the personnel quality score is omitted. For Japan the question of resource control was omitted. For The Philippines and Nepal, the resource control scores are higher than the personnel scores.

For the four countries with the dominant pattern, we believe this reflects a condition on which many urban specialists on the developing world have commented on for some time. The problem lies in central government, which wishes to maintain control over local units. Most specialists agree that this produces administrative bottlenecks, causes great delays, retards local initiative and prevents sensitive adaptation of general policies to local conditions.[5] In effect, central control retards the very development of local initiative that both central

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4　This poses something of a problem, which requires selecting only those who answer both sets of questions for the analysis. In effect, we eliminate from the analysis, since in all other countries all questions had the same number of respondents.

5　This was the subject of a very early set of astute observations by Shills (1959–60). Ness (1967) aiso found the same conditions and provided a case study of successful decentralization and local initiative in Mafaysia's Rural Development Program.

and local government want. Our urban administrator respondents are saying much the same thing. They are saying that they have good people and would like to get ahead with the job, but they are restrained both by the lack of revenues, and even more by the lack of control over their revenues. Many governments have attempted to correct this problem by promoting administrative decentralization, but few have been really willing to give up control over the local units.

Nepal and The Philippines represent deviant cases in this set of observations. Nepal finds that both the quality and quantity of urban personnel represent a serious problem. On the other hand, both revenue base and the control of revenue are considered satisfactory. Nepal's scores not only reverse the general trend, but the difference in the two scores is the largest for all countries. It should be noted, however, that all of the five questionnaires for Nepal were completed by a single administrator in the capital. In the case of many of the objective urban conditions, this may well provide accurate information, though it does not obtain the views of the front–line administrators, which was the original plan of the enquiry. In the case of urban personnel and resource control, however, it is quite possible, perhaps even likely, that local and central administrators will have different judgements. It may well be that in the case of Nepal, we are seeing the common differences between central and local administrators, rather than gaining the kind of view from the local administrators we have received in the other countries.

For The Philippines the scores are all quite close. Neither the quality or quantity of personnel is considered any more than a minor problem (3.09 and 3.18), and the base and control of revenues both get a score of 3.55, almost satisfactory. The Philippines has, indeed, been promoting administrative decentralization for some time, and it may be that the scores we find reflect some success in this movement. At any rate, it would appear that the relationship between administrators' judgements of personnel and resource control would be a fruitful line of research. It is possible that follow–up interviews may well uncover useful suggestions for effective administrative reform that would increase local in-

tiative.

9. Problems and Data Needs

9.1. Top Three Problems

In open ended questions, the administrators in all countries were asked to describe what they parceived to be the three most important problems their cities faced. The total number of major problems identified in this manner was 358, with some administrators listing 4 or 5 major problems[6]. The distribution by major categories of problems is shown in Table 10.

As might be expected public utilities and infrastructure, transportation and housing received the great majority (68%) of the listings. Employment also ranks quite high, with 42 mentions for 12 percent, raising the total to 80 percent of all identifications. These are the conditions associated with the combination of poserty and rapid urban growth. They are also, however, problems that can be effectively addressed by extensive infrastructure construction programs.

This is more evident when we examine the specific problems that require infrastructure construction for their solution. Under public utilities there were 79 (22%) identifications of such things as sewage pollution, solid waste treatment, industrial waste, garbage, and flooding. Added to this under

Table 10. Most Important Problems Identified by Administrators in 7* Asian Countries

Problem Area	Number Reporting	Per Cent
Major Listing		
Public Utilities & Infrastructure	117	33%
Transportation	72	20%
Housing	52	15%
Admimistration	50	14%
Employment	42	12%
Minor Listing		
Social Services	12	3 %
Population	9	2 %
Economic	4	1 %

* India, Indonesia, Korea, Malaysia, Nepal, The Philippines and Thailand

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6   Japan was excluded in this analysis.

housing are 15 (4%) listing of homelessness and 14 (4%) of low cost housing. Under transportation, traffic volume (18%) and flow (25%), plus parking (10%) and road conditions (9%) add up to 62 mentions, or 17% of the total. These all represent the massive pressures riging population densities produce on confined urban areas. But that can all be addressed by infrastructure construction, and it is precisely such past and present construction that distinguishes the more wealthy from the less wealthy nations.

On the socioeconomic side, housing and employment present the most serious problems. Together these made up 92 (26%) of the problems mentioned. We noted above that homelessness (15%) and low income housing (14%) stood out in the housing aoea. In employment it was primarily male (14%) and general (22%) unemployment that were identified among the top three problems. Thus the problems related to poverty were listed 65 times, for a total of 18 percent of all listings.

Administrative problems were mentioned 46 times (13%), Personnel quality and quantity were mentioned only 5 times, while all the rest were concerned with the size and the local control over the revenue base. Again, urban administrators are saying that their administrative problems are not personnel, but control over resources.

Finally, the problems that were least mentioned deserve some attention. Social services, such as health, education and primary health care received only 12 mentions, and only 7 administrators (all from Indonesia) mentioned population growth as a problem. In the area of economic conditions, the problem of hawhers received three mentions, and industrial decline only 1.

9.2. Data Needs

We also asked what information or data administrators needed to address their problems. These follow the problems listed above, but also show a desire for more information and data about planning. There were 117 specific responses that spoke of the kind of information needed. The largest set of mentions (34 or 29%) was for some form of land or urban planning, for housing, traffic flows, market location and physical planning.

Next came the need for technical information on the physical infrastructure problems noted above primarily in the area of public utilities. This included 33 (28%) identifications of information on garbage, environmental quality, water supplies, pollution control, drainage and flood control.

There were 22 (19%) requests for administrative information. This included 15 requests for information on raising revenue. Obviously the revenue base is not only a major problem, but one on whic urban administrators feel that some technical assistance on information and data collection would be useful. There were also requests for administrative planning information, on personnel training, survey techniques or integrated development planning.

There were also scattered requests for information on such things as crime, employment, population distribution, education, health, income, and hawker control. These could readily be included under both planning and administration.

In effect, the urban administrators are asking for data and information on urban administration. They need technical information relating to their overstressed urban incrastructure. They also need, however, more general information about the processes of planning and administration, and more technical data about the problems they face so that they can plan for their amblioration. This represents an important and highly specific call for precisely the kind of assistance foreign governments and international organizations can provide.

9.3. City Projects

The questionnaire asked administrators to list projects they are undertaking to deal with their problems. Eighty-four of the city administrators listed and briefly described 159 projects, indicating that urban administrators are initiating many specific local acivities to address the problems they face. The great variety of projects can be grouped into 10 major categories.

1) Housing: slum and squatter projects and housing development.
2) Wastes: sewage, human and industrial waste and garbage.
3) Public facilities, such as sports stadia, market stalls, parks, community development projects, and one shoreline reclamation to construct a yacht harbor in Korea.
4) Transportation: including bridges, flyovers and new roads to relieve congestion.
5) Water works: dams, flood control and water

supply.

6) Industrial development: industrial complexes and the attempt to attract industries, also agricultural development and small loans for local entrepreneurial activities.

7) Planning activities: such as urban plans and traffic planning.

8) Educational facilities: schools, colleges.

9) Health and family planning: immunization campaigns, primary health care and family planning.

10) Electricity and telephone.

Table 11 shows the distribution of these projects by country and by type of project.

The largest portion of the projects are, as might be expected in housing, waste treatment, transportation, water and industrial or income development projects. There is a striking difference in the projects listed under industrial development in different countries. Japan lists 12 of its 17 projects here, and they are all for the development of what are coming to be called a "technopolis", or high technology industrial parks, and for attempting to attract corporations. Korea, too, has about one–quarter of its projects in similar industrial development and related various urban planning activities. Indonesia and The Philippines reflect what the poorer countries are doing. Both note a number of industrial deveropment projects, but they are primarily for small loans to local entrepreneurs or the construction of small market stalls for the poor. One Indonesian city noted 10 income generating projects for

low income people. We saw that urban administrators did not consider health and education to be major problems, and here we note that accordingly only seven of the 139 projects are in the area of health, family planning and education.

These projects are organized in a great variety of ways. In some cases, the city itself is initiating, funding and implementing the project; in others, the contral government is doing the work and financing. In most, however, there is some sharing between city and central government in planning, financing and implementing the project, and in some cases international organizations are involved as well.

10. Problem Interrelationships and Determinants

We can gain some greater insight into the character of these urban problems, and also into the administrators' perceptions of the problems by examining some of their interrelationships. We begin with the most obvious questions. Are the urban problems related to size, density, or rates of urban growth?

10.1. Size and Problem Scores

City size is clearly related to the seriousness of a variety of urban problems. For countries other than Japan, the larger the city, the more serious are problems of sewage, auto exhaust, all categories of housing, except high cost housing, all categories of transportation, and all categories of crime, except prostitution. On the other hand, quality of person-

Table 11. Numbers of Urban Projects by Category and Country

	India	Indon	Korea	Mala	Nepal	Phil	Thai	Japan	All
1. Hous.	3	5	6	1	—	5	—	1	21
2. Waste	3	1	6	—	2	—	1	—	13
3. Public	2	5	4	2	1	2	1	1	18
4. Transp.	—	9	5	1	1	2	1	—	19
5. Water	1	7	2	1	—	—	1	1	13
6. Indus.	—	11	4	—	—	7	—	12	34
7. Plan.	—	2	4	—	—	—	—	1	7
8. Ed.	—	2	1	—	—	3	—	1	7
9. Hlth/FP	3	—	—	—	—	2	—	—	5
10. Elect.	—	2	—	—	—	—	—	—	2
Total	12	44	32	5	4	20	4	17	139
Cities	8	19	21	3	3	9	2	19	84

nel seems to be positively related to city size. Health and education scores are not related to city size, nor are problems of public utilities, other than sewage, or pollution other than automobile exhaust. For Japan, problems with parking, employment for the aged[7], industrial wastes, and primary health care are related to city size. Larger cities have more serious problems in these areas. Unlike the other countries, Japan's problems with housing are not related to city size.

10.2. Growth and Problem Scores

One of the interesting findings to emerge here concerns the impact of rates of urban growth on the perceived seriousness of urban problems. For all countries, excluding Japan, rapid growth leads to greater problems in primary education. On the other hand, problems of employment, excluding child labor, seem to be *less severe* when cities are growing rapidly, especially from in–mijration. It is possible, of course, that cities that are growing rapidly from in–migration are essentially more attractive precisely because they have more jobs. Thus it may well be the employment opportunities that are attracting workers, leading urban administrators to perceive both rapid in migration and less serious problems of unemployment. The problem of sewage also seems to be less serious condition with population growth, though we have no ready explanation for this. For Japanese cities the water quality, and revenue base are also helped by rates of urban growth.

10.3. Density and Problem Scores

Density[8] is also related to the perceived seriousness of urban problems. For countries other than Japan, the higher the population density, the more serious are problems of garbage, all categories of traffic, all categories of housing, except middle income housing, child labor, violent and property crime, drugs, and all categories of pollution, excluding sewage. On the other hand, higher density may lead urban administrators to perceive as less serious the problem of quality of personnel. For Japanese cities, unlike other countries, only one urban condition is related to density. That is, higher density may lead to groater problem in traffic flow.

10.4. Problem Perception

Earlier we noted that whether or not urban administrators perceived their growth rates to be a serious problem depended in part on something other than the growth itself. The above provides some possible explanation. In effett, growth may produce both problems and opportunities. But what is it that leads administrators to consider that their growth constitutes a serious problem ? For both Japan and the other countries, the most important sources seem to lie in overburdened urban infrastructure. That is, weakness in public transportation, low and middle income housing, industrial wastes and pollution seem to produce in the administrators a sense that rapid growth poses a serious problem. In addition, in Japan, problems of unemployment also lead administrators to perceive a serious problem in urban growth.

There are two interesting reversals as well. There are some conditions that mitigate the growth problem. In Japan, for example, a higher quality of urban water services makes urban growth appear not to be an important problem. In the other poorer countries, the higher the quality of health and family planning services, the less an administrator is likely to perceive urban growth as a serious problem.

11. Objective Indicators

For both Korea and Japan, the government collects and publishes a number of objective indicators for individual cities. We can identify some of those indicators that reflect conditions roughly similar to those on which the urban administrators gave their assessment scores. For example, the numbers of automobiles per capita might be roughly equated with administrators' judgements of the problem of traffic volume. For indicators of this type, we can ask to what extent the variance of the indicators by city matches the different judgements of the administrators. The correlation or correspondence between the objective indicator and the administrators' assessments can give us greater confcdence in the direct interpretation of the

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7 The questions of old aged employment and parking were not included in questionnaires of other countries.

8 Since we found high skewness in the density measure, we used a log transformation for the analysis.

administrators' assessments.

There is, of course, a basic problem we face in attempting to assess validity in this manner. None of the indicators we have really provides information on the quality of the specific problem or condition. For example, where vehicles per capita is high, we might expect traffic volume to appear as a serious problem for an administrator. At the same time, we know that the perception of traffic volume as a problem depends on some combination of numbers of vehicles and the quality of the road network. With the same number of vehicles, an open city with wide avenues, overpasses, and extensive parking facilities will present less of a problem to any observer than a city with narrow streets, many bottlenecks and little parking. That is, the validity of the objective indicator as a measure of the quality or problem posed by that condition is very much open to question. Nonetheless, using the objective indicator provides at leats one mechanism for understanding more fully what the administrators mean by the scores they give.

The objective indicators can be used in another way as well, however. The technique is known as deviant case analysis, and is often a powerful research tool in the social sciences. As we shall see, for example, in some cases there is a fairly close correspondence between objective indicators and the administrators' scores. In these cases, we can examine the distribution of the scores and objective indicators, and often find significant outlying or deviant cases. We can identify those outliers to focus on the problems of specific cities to help us better understand the nature of urban problems. For example, if we see a generally close corresponaenc between actual tax revenues and the administrators' scores on the tax base, we can look for cities that deviate from this general pattern. We look for cities with low revenues and high administrators' scores, and ask what those cities do to make their lower tax revenues go further. The same could be done for cities with high tax bases but a low score from the administrator. This is known as deviant case analysis.

To proceed with this analysis, we shall treat Korea and Japan separately. In each case, we shall examine the correlations between certain objective indicators and the administrators' scores on ronghly similar problem areas. We shall select a few indicators where the correlations are relatively strong. For these, we shall examine the mean of the objective scores for cities at each level of the urban problem scores. From this we can look for deviant cases, which might suggest fruitful avenues for future reseach.

11.1. Korea

The government of the Republic of Korea publishes data 11 objective indicators that roughly match the conditions on which the administrators have made judgements about the seriousness of the problem. Although the terms may not be exactly appropriate, we shall refer to the published government measures as *objective* and the administrators' scores as the *subjective* measures. In each case we calculated the simple zero order correlation coefficient between the value of the objective and subjec-

Table 12. Correlation Coefficient between Enquiry Problem Areas and Objective Indicators for 31 Korean cities

| Enquiry Problem Area	Objective Indicator	Correlation Coefficients
1. Water	Proportion of population served	+ .01
2. Social Welfare	Soc. Wel. Expenditure/per capita	− .02
3. Hospital Care	Hospital Bed per capita	+ .05
4. Vocational Education	Vocational Tea./Stud. Ratio	− .10
5. Personnel Quantity	City Official per capita	− .11
6. Primary Education	Primary School Tea./Stud. Ratio	− .12
7. Garbage	Proportion of total garbage collected	+ .16
8. Traffic Volume	Number of Vehicles per Km of Road	− .17
9. High School Education	High School Tea./Stud. Ratio	+ .21
10. Size of the Revenue Base	Total City Budget per capita	+ .24
11. Sewage	Actual as % planned length of sewage pipe	+ .49*

*p< .01
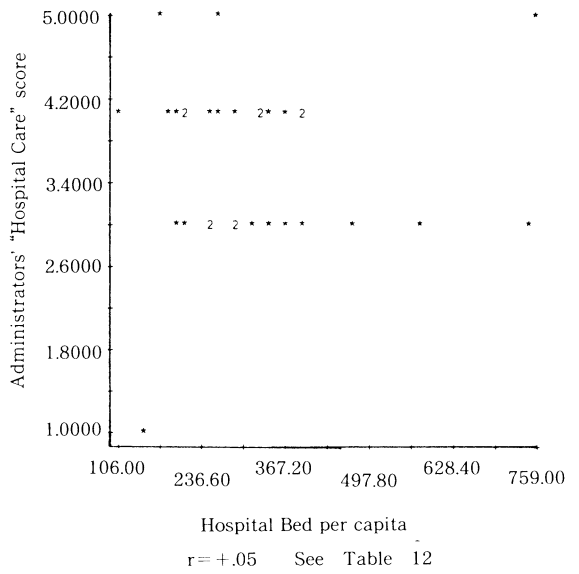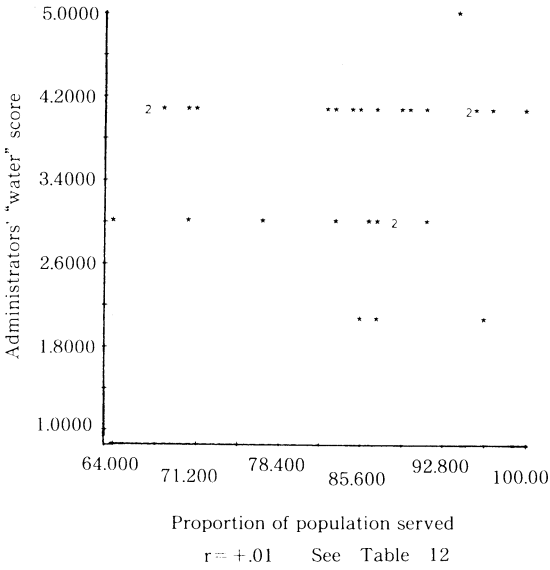
Figure 11. Scattergram Water and Diffusion Ratio
of Water Service: Korea

Figure 13. Scattergram Hospital Care and Hospital
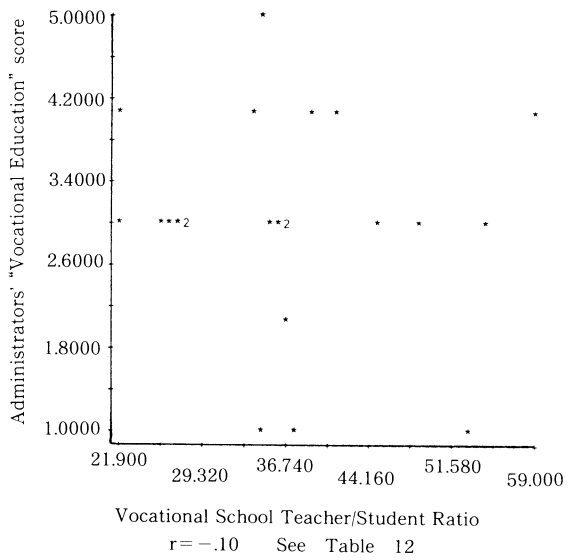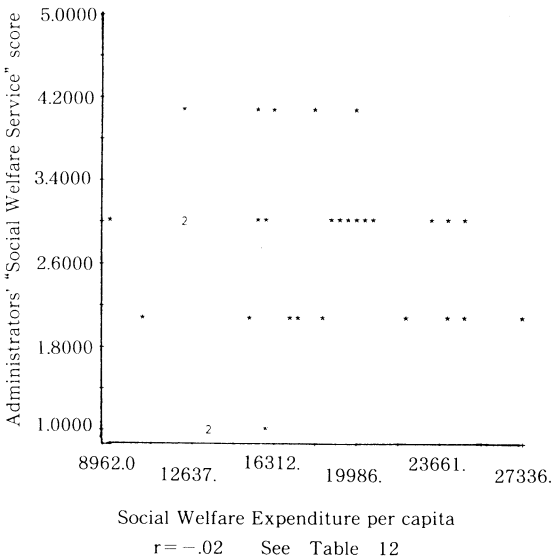Bed per capita: Korea

Figure 12. Scattergram Social Welfare Service and
Social Welfare Expenditure per capita:
Korea

Figure 14. Scattergram Vocational Education and
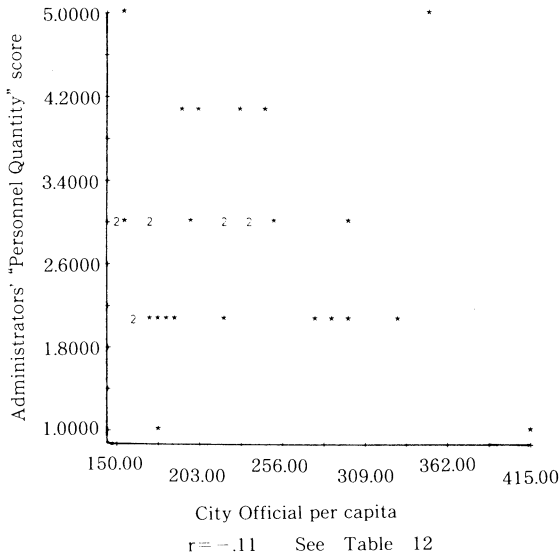Vocational Teacher / Student Ratio:
Korea

r = −.11   See   Table   12

Figure 15.   Scattergram Personnel Quantity and
City Official per capita: Korea

Proportion of total garbage collected

r = +.16

r = +.29 (excl. deviants)
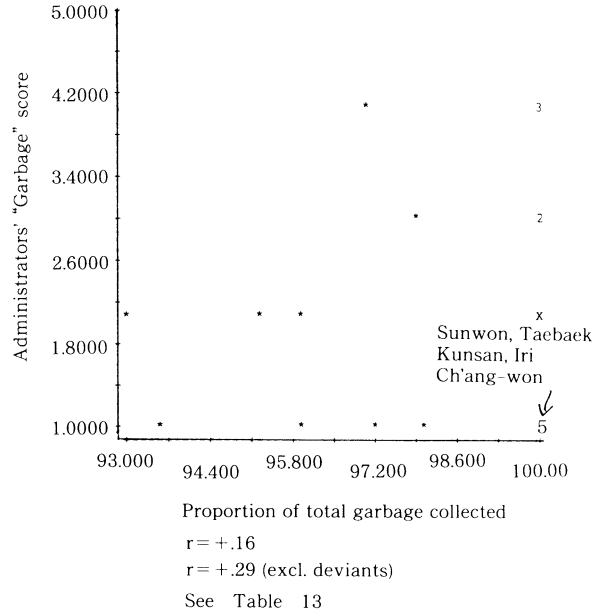
See   Table   13

Figure 17.   Scattergram Garbage and Diffusion
Ratio of Garbage: Korea

r = −.12   See   Table   12
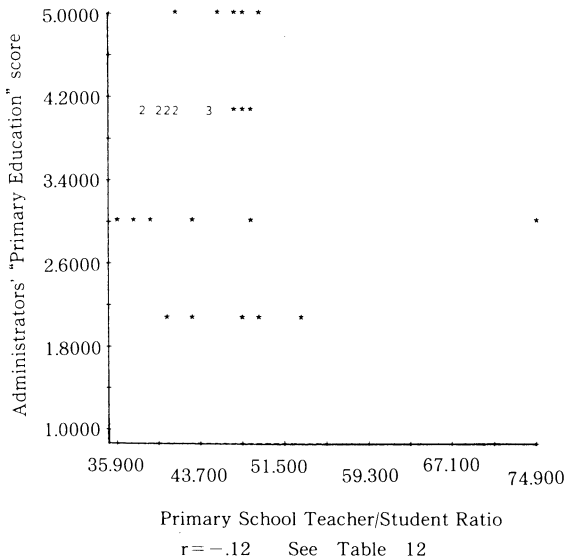
Figure 16.   Scattergram Primary Education and
Primary School Teacher/Student Ratio:
Korea

Number of Vehicles per kilometer Road

r = −.17

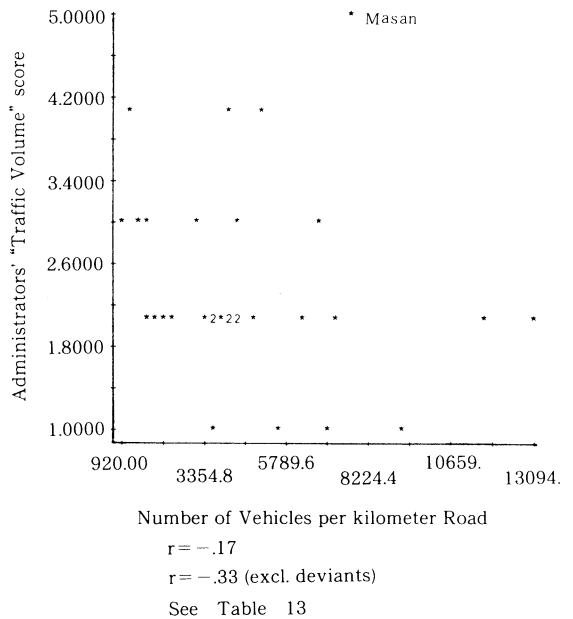r = −.33 (excl. deviants)

See   Table   13

Figure 18. Scattergram Traffic Volume and Number
of Vehicles per kilometer Road: Korea
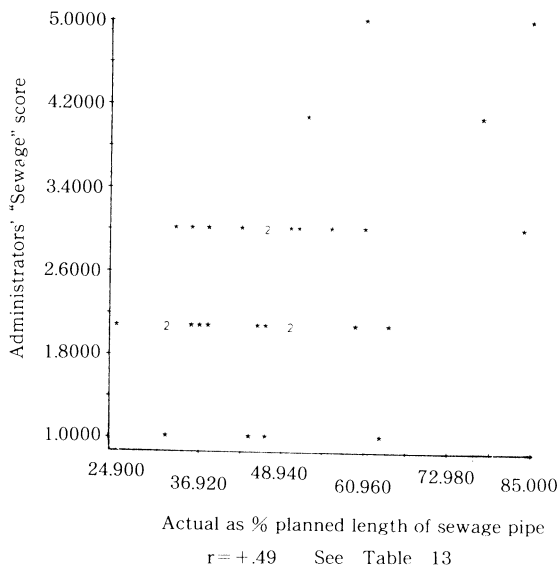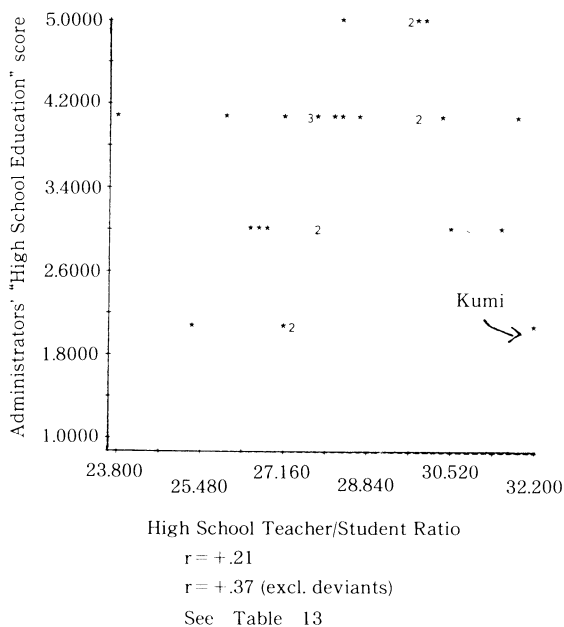
Figure 19. Scattergram High School Education and
High School Teacher / Student Ratio:
Korea

r = +.21
r = +.37 (excl. deviants)
See　Table　13

Figure 21. Scattergram Sewage and Diffusion Ratio
of Swage: Korea

r = +.49　　See　Table　13
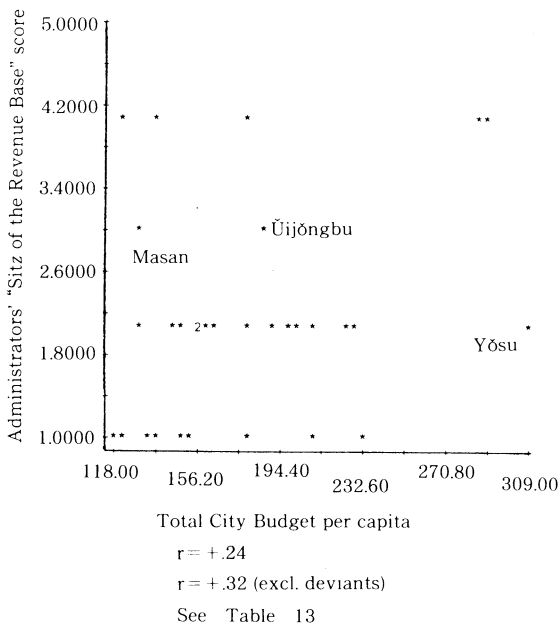
Figure 20. Scattergram Size of the Revenue Base
and Total City Budget per capita: Korea

r = +.24
r = +.32 (excl. deviants)
See　Table　13

tive scores for 31 Korean cities. The list below
shows the problem area from the enquiry question-
naire, together with the conditions reported in the
Korean government data and the correlation coeffi-
cient for the two measures (See Table 12 and
Figures 11 to 21).

Note that for the first six conditions, the coeffi-
cients show very weak (less than + .15) relationship
between the objective and subjective measures. We
examined the scattergrams in each and found that
the low scores are not the result of one or two
outliers. They reflect a pattern in which subjective
scores can be found at all levels of the objective
indicator. There are, in effect, no dominant patterns
and no deviant cases.

For the last five conditions, however, we did
find relatively high coefficients. Table 13 shows the
means of the objective measures for each level of
the administrators' perceptions of the seriousness of
the problem to which that indicator corresponds
(see also Figures 17 to 21). It is obvious that in three
of the caves, with the lower coefficients, there are
one or two deviant cases, which reduce the strength
of the correlation coefficients when these deviant

Table 13. Mean Values of Objective Conditions by Administrators' Problem Values in Korea

Problem Score	Mean Objective Indicator Scores (N) for:				
	Garbage	Traffic Volume	High School	Per capita Taxes	Sewage
1 Urgent Major Problem	98.3 (9)	6294 (4)	—	159.0 (9)	46.3 (4)
2 Serious Problem	98.9 (15)	4845 (17)	27.9 (5)	187.2 (15)	42.8 (12)
3 Minor Problem	99.3 (3)	3061 (6)	28.2 (7)	157.0 (2)	49.6 (11)
4 Satisfactory	99.3 (4)	3471 (3)	28.2 (14)	202.2 (5)	64.9 (2)
5 Advantage	—	7805 (1)	29.5 (5)	—	73.1 (2)
Correlation Coefficients					
All Cases	+.16	−.17	+.21	+.24	+.49***
Excl Deviants	+.29	−.33**	+.37**	+.32	—

*p<.10   **p<.05   ***p<.01

cases are included. This permits us to use a form of deviant case analysis to suggest additional questions that could be posed in a more detailed investigation of these cities.

11.1.1. **Garbage.** The administrators scores for garbage is higher when the objective indicator of garbage disposal diffusion ratio increase, though overall the relation between these two indicators is not a strong one. Here, we find five cities (Suwon, Táebaek, Kunsan, Iri and Ch'ang-won) whose administrators judged the condition of garbage disposal as "urgent major" problem (1), although their cities enjoy 100 per cent of garbage disposal diffusion ratio. Obviously, these administrators are using crieria other than the diffusion ratio when they evaluate the condition. Excluding these five cities from the calculation raises the coefficient to +.29 (n.s.).

11.1.2. **Traffic Volume.** Overall the relation between the administrators' perceptions of the problem of traffic volume is closely related to the number of vehicles per kilometer of road. The mean scores decline almost steadily as the administrators' perceptoons become more positive. The one deviant case, Masan, is the only case where the administrator scores traffic volume an advantage (5) for the city despite its having the third highest ratio of all cities in vehicles to road length, and a relatively

high level of density (vehicles per kilometer of roads (7805)). This suggests it would be useful to examine Masan in greater detail with field observations. The question is whether the administrator has made a mistake in scoring this problem area, or whether Masan has done something to alleviate its traffic problems. When we remove Masan from the calculation, the correlation cofficient rises to −.33, which is statistically significant at the 10 percent level.

11.1.3. **High School Education.** Again the objective indicators move in the predicted direction. The higher the ratio of high school teachers to students, the higher the administrators tend to score the issue of high school education. There is one deviant case, Kumi, whose administrator rates high school education a serious problem (2), despite the fact that it has a higher ratio of teachers to students than any other city covered in the enquily. It might be that Kumi does have special problems, because it has an unusually high proportion of young women working in the electronics assembly industry. The problem this raises may need special attention by schools. When Kumi is excluded from the calcuiation. the coefficient rises to +.37, which is also significant at the ten percent level.

11.1.4. **Budget.** Once again the relationship is not a strong one, but it is in the predicted direction.

The higher the city's per capita revenues. the more favorably the administrators score the issue of the revenue base. Here, however, there are three interesting deviant cases. Masan and Ŭijŏngbu give a relatively high score to the issue. For them it is only a "problem", while for most others it is an "urgent major" or "serious" problem. Yet these two cities have lower than average levels of per capita revenues. One can ask whether these cities are in some way more efficient in their use of revenues, or whether they have other resources that give them less trouble with revenues. The other deviant case is Yŏsu, whose administrator sees the problem as a special or serious one, despite the city having the highest per capita revenues of all cities. Does Yŏsu have special problems, and higher than normal costs that make its administrator score this conaition serious, despite the high objective score? Excluding these three cities from the calculation, raises the coefficient to +.32

11.1.5. Sewage. Finally, the administrators' scores for sewage are strikingly higher the objective indicator of sewage services increase. There is not much difference between the two lowest scores: the administrators' judgement of urgent or special problem. But above that. the apparent quality and extension of the sewage system rises very rapidly to quite high levels, where the administrators see this to be satisfactory or even an advantage to the city. There are no significant deviant cases in this distribution.

In the Korean case, therefore, there is relatively strong support for the validity of the administrators' assessments of problems, at least for these five problem areas. The analysis also pointed, however, to useful follow–up research activities for urban officials and scholars. Such follow–up might

point to special activities or procedures that help address urban problems.

11.2. Japan

The government of Japan also publishes data on conditions that roughly match those on which the administrators made judgement on the seriousness of the problems. As it was with Korea, the terms may not be exactly appropriate, but we shall refer to the published government measures as objective and the administrators' scores as the subjective measures.

For Japan we have only four objective indicators. The list below (Table 14) shows the problem area from the enquily questirnngire, together with the conditions reported in the Japanese government data.

Table 15 shows the mean scores on each of the objective indicators for each level of administrators' problem score in **Japan** and the correlation coefficient for two measures (see also Figures 22 to 25).

11.2.1. Sewage. Sewage scores tend to rise with the objective sewage diffusion ratio, though note that no administrator rates the sewage condition as "advantageous" for the city. Here there are two interesting cases, both of which score the sewage issue merely "a minor problem". One, Naha, has the highest sewage diffusion score of any city. This raises the question of whether Naha has special sewage problems that are not effectively addressed even with its high objective rating. At the same level of administrator score is Utsunomiya, with a much lower objective score on sewage diffusion. Does Utsunomiya have less problems with sewage, or has the city done something else that makes its moaerate level of sewage diffusion work more effectively? Since one of these cases supports the overall relationship, and the other weakens only slightly,

Table 14. Enquiry Problem Areas and Objective Indicators

Enquiry Problem Area	Objective Indicator
1 ． Sewage	Actual as % planned length of sewage pipe
2 ． Personnel Quantity	City Officials per capita
3 ． Water	Proportion of population served
4 ． Hospital Care	Number of Doctors per 1000 population

Table 15. Mean Values of Objective Conditions by Administrators' Problem Values in Japan

Problem Score		Mean Objective Indicator Scores (N) for:			
		Sewage	Pers. Quant.	Water	Hospitals
1	Urgent Major Problem	28.6 (9)	91.5 (2)	—	3.1 (1)
2	Serious Problem	37.8 (15)	99.2 (6)	70.1 (4)	3.1 (5)
3	Minor Problem	53.2 (2)	107.07 (11)	87.6 (7)	2.0 (7)
4	Satisfactory	47.3 (4)	119.75 (6)	89.1 (10)	2.4 (11)
5	Advantage	—	125.40 (1)	85.8 (5)	3.1 (2)
Correlation Coefficients					
All Cases		+ .41**	+ .59***	+ .30	+ .15
Excl Deviants		+ .39**	+ .69***	+ .36*	+ .33*

*p < .10   **p < .05   ***p < .01

r = +.41
r = +.39 (excl deviants)
See Table 13
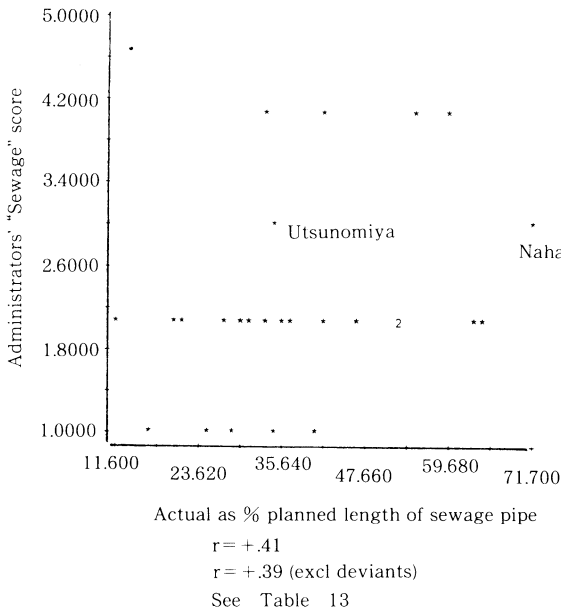
Figure 22. Scattergram Sewage and Diffusion Ratio of Sewage: Japan
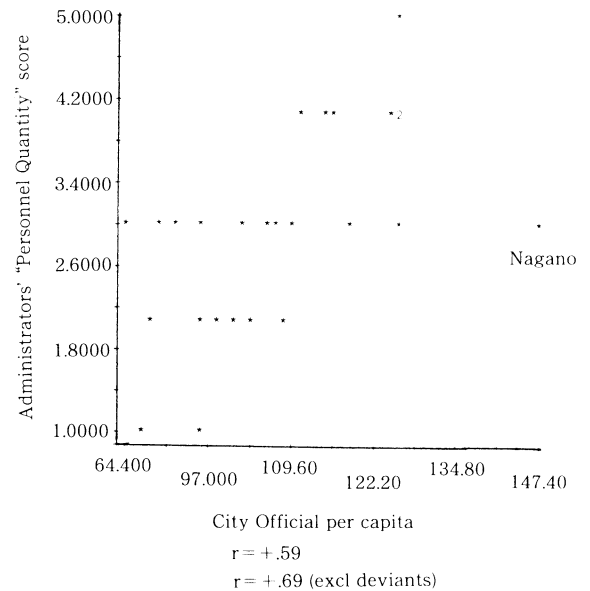

r = +.59
r = +.69 (excl deviants)

Figure 23. Scattergram Personnel Quanitity and City Official per capita: Japan

removing them from the calculation reduced the coefficient slightly to +.39.

11.2.2. Personnel Quantity. One of the strongest correlations we have found is between the administrators' scores on **personnel quantity**, and

the ratio of government officials to population. The means of this ratio rise consistently and dramatically as the administrators' perception scores rise. The overall correlation of +.59 is significant at better than 1 percent level. There is only
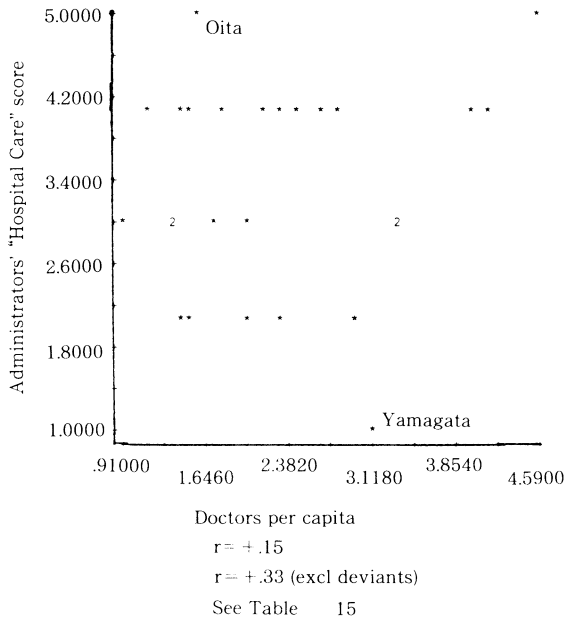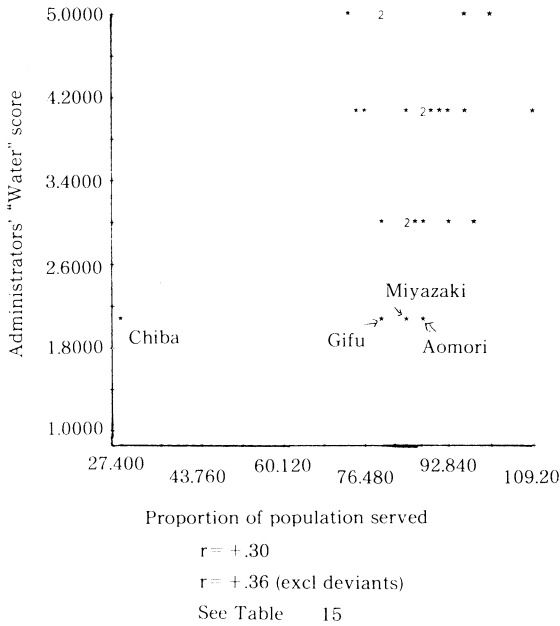
Figure 24. Scattergram Water and Diffusion Ratio of Water: Japan

Proportion of population served

r = +.30

r = +.36 (excl deviants)

See Table　15

Figure 25. Scattergram Hospital Care and Doctors per capita: Japan

Doctors per capita

r = +.15

r = +.33 (excl deviants)

See Table　15

one case that is mildly deviant. Nagano has the highest ratio of officials to population, yet the administrator still rates personnel quantity "a minor problem". Does Nagano have special problems that require more officials? Or are the many officials in some way not available to the city government? Excluding Nagano from the calculation raises the coefficient to +.69.

　11.2.3. **Water**. The objective indicators move in the predicted direction. The higher the diffusion ratio of water, the higher the administrators tend to score the issue of water. There are three deviant cases. Gifu, Aomori, and Miyazaki give a relatively low scores to the issue. For them, it is a "serious problem", yet their cities enjoy above 80 per cent of diffusion ratio of water. With personal contact with the respondent of Gifu City government, he stated that hie city's diffusion rate of water was low (80 per cent) compared with other cities which have more than a 90 per cent diffusion rate. We were not be able to contact the respondents from either Aomori nor Miyazaki City government, due to the peronnel changes.

　11.2.4. **Hospital Care**. There is only a weak relationship between the score on hospital services and the objective indicator of doctors per popula-

tion. The relationship is in the right direction, but it is not statistically significant. Here again we have two deviant cases at opposite ends of the spectrum. Oita's administrator rates hospital care advantageous (5) to the city, but it has one of the lowest doctor to population ratios of all cities. At the other end, the Yamagata administrator considers the problem an "urgent" one (1), despite the city's substantially higher than average doctor to population ratio. This raises the possibility of a preliminary comparative analysis that would ask what advantages Oita has that Yamagata does not enjoy in hospital care. Excluding these two from the calculation raises the coefficient to +. 33, which is statistically significant at the ten percent level.

11.3. Conclusion

　This analysis has done two things for us. Where we do have some objective indicators of conditions roughly related to the problem areas on which the urban administrators gave on the extent of the problem, the administrators' scores tend to correspond roughly with those objective indicators. In some cases the correspondence is quite close, as in Korea's sewage, and Japan's sewage, water, hospital service and especially personal quantity issues, We cannot be certain, of course, that this correspond-

ence is a general phenomenon that can be extended to all other problem areas and to other countries. It does, however, give us some confidence that the scores we have from the administrators represent real problems on the ground.

In addition, however, the analysis points to special cases of cities whose problems are both better and worse than expected given the objective conditions under which they live. This can help direct attention toward those special cases where we can learn more about how specific objective conditions affect urban administrators, and also perhaps how administrators have addressed problems in special ways to ameliorate them.

12. Population Crisis Committee Objective Indicatrs

We have one other opportunity to match objective indicators of urban problems against the assessments of our administrators. The Population Crisis Committee (PCC, 1990) undertook a study of the urban problems in 100 of the world's largest cities. That study included four of the cities in our Enquily: Bombay in Inaia, Jakarta[9] and Bandung in Indonesia, and Pusan in South Korea. The PCC study covered a wide variety of urban problems, six of which match those on which out administrators made assessments. Table 16 shows the problem areas of our enquiry and the matching objective indicator of the PCC study, together with the correlation coefficient for the two measures[10]. And Table 17 shows for the five matching cities, the scores our urban administrators gave to each of the six problems. It also shows for each of those problems the absolute value in the PCC study, and the **score**, on a $1-10$, low to high quality scale, which the study gave each of the conditions.

For secondary education, overall the administrators' perceptions of the problem of secondary education is strong and negatively related to score of the PCC study ($-.60$). Jakarta and Pusan received relatively high scores on the PCC study, however, the administrators' perception of both cities toward secondary education was quite low.

On the other hand, Bombay and Bandung received moderate scores of our study, but the PCC study gave them a rather low score.

For health, the relationship between the administrators' perception and the score of the PCC study is moderate, with a positive direction ($+.20$). Bandung received high scores from both its administrator and the PCC study. Pusan received the highest score from the PCC study, however, the administrator gave a moderate score, indicating that is perceived as a "problem." Jakarta got the lowest score from both administrators, but overall the score of the PCC study was moderately high. Bombay received a moderate score from its own administrator, however, it received the lowest score from the PCC study. The correspondence is thus mixed.

For crime, we found a moderate negative relation between the administrators' perceptions of violent crime and the score of the PCC study ($-.15$). Both Pusan and Bandung received the highest score from the PCC study, however, these cities' administrators gave a quite low score. Crime was perceived as a "problem" by Pusan's administrator, and as a "serious" problem by Bandung's administrator. Jakarta's two administrators gave moderately high scores, indicating they saw violent crime only as a "problem", but the PCC study gave Jakarta a very low score. Bombay received a moderate score from the PCC study, but there was no response from the administrator.

For traffic flow, the relationship between the administrators' perceptions of the problems of traffic flow and the score of the PCC is fairly strong and in a positive direction ($+.75$). Bombay got the lowest scores and Jakarta and Bandung got moderate scores from both sources. Here, we find Pusan as a deviant case. This city was judged more harshly by its own administrator than by the PCC study.

For air pollution, we find rather strong positive relation between two indicators ($+.83$). Bombay received the lowst scores from its own administrator, and a relatively low score from the PCC study. Both Jakarta's two administrators saw the condition of

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9 Since we received responses from two different administrative districts in Jakarta, we have total 5 cities in this analysis.

10 Although our sample is small (N=5), we computed the rank order correlation coefficient to examine the relation between objective indicators of the PCC study and the assessment of our urban urban administrators toward urban conditions.

Table 16.　Perceived Problems Areas and PCC Objective Indicators

Perceived Problem Area	PCC Objective Indicator	Correlation Coefficients*
1．Secondary Education	% of Children aged 14–17 enrolled	− .60
2．General health condition	Infant Mortality Rate	+ .20
3．Violent Crime	Estimated Homicides per 100,000 Pop.	− .15
4．Traffic Flow	Estimated morning rush hour trip city to airport	+ .75
5．Auto. Exhaust	Highest 1 hr. ozone concentration	+ .83
6．Noise pollution	Perception of ambient noise on 10 point scale	+ .15

＊Rank order correlation

Table 17.　Objective Indicators and Perceived of Six Urban Problems for Four Asian Cities

City	Urban Problems								
	Secondary Education			Health			Crime		
	Perceived Score	Objective		Perceived Score	Objective		Perceived Score	Objective	
		Value	Score		Value	Score		Value	Score
1．Bombay	4	49*	3	4	59	5	—	3.2	7
2a．Jakarta (South)	3			1			3		
2b．Jakarta (East)	2	77	7	1	45	6	3	5.3	6
3．Pusan	3	84	8	3	12	9	2	1.1	10
4．Bandung	4	53	4	5	22	8	3	0.9	10

Table 17.　(Continued)

City	Urban Problems								
	Traffic Flow			Air Pollution			Noise		
	Perceived Score	Objective		Perceived Score	Objective		Perceived Score	Objective	
		Value	Score		Value	Score		Value	Score
1．Bombay	1	10.4	1	1	100 days SPM	3	3	5	6
2a．Jakarta (South)	2			2			4		
2b．Jakarta (East)	2	16.3	3	1	173 days SPM	1	3	6	5
3．Pusan	1	17.1	3	3	1500 PPM	7	3	7	4
4．Bandung	2	14.9	3	2	n.a.	n.a.	3	4	7

auto exhaust as a serious problem and also the PCC study gave this city a very low score. Pusan received the highest administrator's score of our three covered cities, indicating that it is perceived as a "problem", but neither serious nor urgent, and the PCC study also gave this city a rather high score.

Finally, for noise pollution, we found very weak correlations between the two sources (+.15). In fact this is the lowest correlation among these six indicators. Here we found that the administrators indicated noise as a "problem", except one case; the PCC study gave some cities rather high score, but not others. The correspondence is thus mixed.

Overall, then the correspondence between the PCC "objective score" and our administrators' more subjective judgements is not encouraging. There are moderate *positive* correspondences on traffic flow and auto exhaust. On secondary education there is a *negative* relation between the scores of the two studies. On the other measures, there is really little correspondence. Of course, negative findings such as this provide little real evidence, especially since we have so few cases, and since the objective and subjective measures are so tenuous in their relationship. All we can really say from this is that there are too few cases, and too little correspondence between the two sets of measures to support or contradict the assessments our administrators have given of their own urban problems.

Appendices

1. Apendix A. Internal Reliability Checks

The few basic questions on size, growth and perceptions of change provide the opportunity to ask how valid or reliable are the perceptions and judgements of the administrators. We can first examine how reliable are the reports of population growth and population movements into or out of the city. If there is little relibility, there would be serious question about the utility of using administrators to complete questionnaires such as this. If the reports are reliable, that is, if administrators report roughly the same thing on different questions, we can have more faith in their perceptions.

A. Population Growth From questions about city size in 1960, 1970 and 1980, we can calculate the average annual rate of increase for each city for

the 1960s and the 1970s. The next question in the survey asked specifically what is the current total rate of increase, and how much comes from in-migration or natural increase. This permits us to compare calculated rates of growth for the 1970s with stated current total rate of growth. These need not be the same, of course, since the rate for the 1970s may well have changed in the 9 years since then. Nonetheless, they should be roughly equal, since the growth rates tend to be relatively stable over time. For example, the correlation coefficient for the calculated growth rates in the 1960s and the 1970 s +.51. The correlation coefficient for the growth rate calculated for the 1970 s and the reported current growth rate is also +.50. When two outlying cases are omitted the correlation coefficient increases to +.59. Both are statistically highly significant, and show that the two reports are very much the same. This supports the view that the reported rates of growth are relatively reliable.

B. Population Movement We can also ask if the administrators' perceptions of **inflow** and **outflow** are closely related to the calculations of the percent of in-migration. This will be done separately for Japan and for the other countries because Japan has given us estimates of growth from 1980 to 1989. Table 18 shows for countries other than Japan, the minima, maxima, and means of the percent growth from in-migration by the administrators' judgement of the direction and magnitude of the flow. The overall relationship is quite clear. The mean for in-migration is highest where administrators perceive a great inflow. It declines steadily for the other perceptions, and is a negative number where administrators perceive an outflow of the population. The one exception is found in the category where administrators perceive a small outflow. Here the mean is in the correct rank, but note that the maximum is +5.5. This result comes from one city, where the administrator indicated that the in-migration rate was 9.5 percent, but perceived the movement to show a small inflow. If we omit that one outlying city, as is done in the parentheses below the entry, the results are quite consistent. Thus it appears that the administrators' perceptions of the direction and magnitude of the migration flow are quite accurate. The second panel in Table 18 shows the same data for the rate of calculated

Table 18. Percent City Growth by Administrators' Judgements of Chage
(Excluding Japan)

Judgement	No. Reporting	Range		Mean
		Minimum	Maximum	
Reported Increase from In Migration				
Great Inflow	35	3.0	15.4	3.42
Small Inflow	26	−0.50	8.90	2.02
Stagqation	7	0	1.40	0.49
Small Outflow	4	−4.20	5.50	0.28
	(3*)	(−4.2*)	(1.1*)	(−1.47*)
Great Outflow	2	−1.80	1.00	−0.40
Calculated Increase from Population 1970–1980				
Great Inflow	45	0.92	25.3	6.18
Small Inflow	32	0.52	8.91	3.37
Stagqation	10	1.57	5.13	2.84
Small Outflow	5	0.97	5.64	2.77
Great Outflow	6	0.80	2.44	1.50

＊Shows results excluding one outlying city

Table 19. Percent City Growth by Administrators' Judgements of Chage
Japan

Judgement	No. Reporting	Range		Mean
		Minimum	Maximum	
Reported Increase from In Migration				
Great Inflow	2	.62	1.31	.97
Small Inflow	8	.17	1.70	.73
Stagqation	5	−.65	.16	−.22
Small Outflow	6	−.76	.53	−.13
Great Outflow	1	.05	05	.05
Calculated Increase from Population 1970–1980				
Great Inflow	3	1.25	1.68	1.46
Small Inflow	10	0.33	1.52	0.94
Stagqation	5	−.06	0.83	0.46
Small Outflow	7	−0.28	0.57	0.34
Great Outflow	1	−0.16	0.16	0.16

from the population figures for 1970 and 1980. These, too, show a very consistent decline in the means from perceptions of Great Inflow to perceptions of Great Outflow. We find the same pattern when we examine the means of reported total increase as well, though these are not shown in the table.

For Japan we show the same figures in Table 19, except that the second panel shows the means for the rate of change calculated from population figures for 1980 and 1989. These, too, show a close correspondence between the administrators' perceptions and the mean rates of increase both from in-migration and from the calculated total increase. As above, we obtain the same results for the reported total increase.

In effect, these data show a high degree of correspondence between the administrators' perceptions of population movements, and the reported or calculated rates of increase. This gives

us confidence that the administrators are reporting the movement very much as it is. Thus we may also have some confidence in their judgements about other conditions as well.

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