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BOOKS

THE ORGANIZATION OF URBAN COMMON-PROPERTY INSTITUTIONS:

THE CASE OF APARTMENT COMMUNITIES IN SEOUL

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THE ORGANIZATION OF URBAN COMMON-PROPERTY INSTITUTIONS:
THE CASE OF APARTMENT COMMUNITIES IN SEOUL

Traditional property arrangements in urban residential settings dichotomize property into private and public domains. This dissertation examines a new type of urban property, organized to maintain an urban commons, composed partly of property that is traditionally private and partly of property that is traditionally public. In the U.S., this type of property includes both condominiums and homeowners' associations, often considered together as "residential community associations" (RCAs). Apartment communities as organized in Seoul, Korea, are RCAs that include both individually-owned apartment units as private property and the apartment buildings and grounds that are commonly owned by apartment owners. Moreover, the grounds are extensive and may include infrastructure normally held as public property, such as streets and sidewalks, in addition to parks, playgrounds, gardens, and parking lots.

The main focus of this study is on the way in which apartment communities in Seoul address the characteristic collective-action problems related to organizing a commons, such as pastures, groundwater supplies, or irrigation works. Six apartment communities were selected from the same district of Seoul, evenly grouped by particular physical and institutional variables, and studied in depth.

The collective-action problems that arise in apartment communities are those typical of common-property institutions: access control, use regulation, and maintenance. Each problem is related to a different physical attribute of the apartment commons. Apartment communities not only formulate and enforce operational rules, but also raise revenue through mandatory fees and are largely self-governing.

The apartment commons, although used also by outsiders, is commonly owned by apartment owners and primarily used and cared for by apartment dwellers within the community boundaries. All six communities studied possess the necessary characteristics to be considered effective common-property institutions. They successfully cope with the collective-action problems characteristic of the commons, organizing and maintaining the apartment commons as common-property.

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Introduction

Traditional property arrangements in urban residential settings dichotomize property into private and public domains. Housing, buildings, and the limited grounds around them are held as private property, while residential streets, sidewalks, parking lots, and parks are open-access, public facilities. The space around private property in residential areas is sometimes commonly owned by housing owners. This arrangement allows part of the urban commons to be converted from open-access, public space into the common-property. The result is to create a new type of urban property organized to maintain an urban commons composed partly of property that is traditionally private and partly of property that is traditionally public.

Apartment communities in Seoul include both individually-owned apartment units as private property and the apartment buildings and grounds that are commonly owned by apartment owners. Moreover, the grounds are extensive and may include infrastructure normally held as public property, such as streets and sidewalks, which in some cases also provide access to places of business or governmental offices, in addition to parks, playgrounds, gardens, and parking lots.

The main focus of this study is on the way in which apartment communities in Seoul address the characteristic collective-action problems related to organizing a commons. These problems include control of access by non-residents, regulation of joint and alternative uses by residents, and the maintenance of the commons, including buildings, grounds, and other facilities. In addition, the research examines the institutional arrangements for the provision and production of community services in apartment communities and the way in which apartment communities relate to the larger public economy around them.

The plan of the dissertation is first to review the theory of

common-property institutions (Chapter I), then to apply the theory to residential community associations in general and Seoul's apartment communities in particular (Chapter II). Next, the institutional arrangements characteristic of the apartment communities are described (Chapter III), and the six communities selected for in-depth study are introduced (Chapter IV). The inquiry and analysis then focuses on the characteristic collective-action problems of the commons and how apartment communities in Seoul cope with these problems (Chapter V). Then, the service provision and production responsibilities of the communities are examined in the context of the larger public economy of Seoul (Chapter VI). The dissertation concludes with observations on the utility of common-property institutions in Seoul (Chapter VII).

Chapter I
COMMON-PROPERTY INSTITUTIONS

A. Outcomes in the Commons: A Tragedy?

Common property is well known as a legal arrangement often applied to the ownership and management of natural resources. Its use as a legal framework for the organization of urban housing and neighborhoods is much less well understood and appreciated. The study of the "urban commons" as such is in its infancy. Apartment communities in Seoul, Korea, provide an opportunity to apply common-property theory in an urban setting. Apartment communities, it turns out, share numerous characteristics with fisheries, irrigation works, and rangelands. This is because situations in a commons are characterized by certain collective action problems. These problems can be introduced by drawing upon Garrett Hardin's "The Tragedy of the Commons" (1968).

1. The "Tragedy of the Commons"

Hardin's work has been popularly cited in various kinds of studies on the commons as an appropriate explanation of why a commons is overexploited or depleted. His description of a grazing commons is a classic example of this process:

As a rational being, each herdsman seeks to maximize his gain. Explicitly or implicitly, more or less consciously, he asks, "What is the utility to me of adding one more animal to my herd?"
., the rational herdsman concludes that the only sensible course for him to pursue is to add another animal to his herd. And another; and another. . . . But this is the conclusion reached by each and every rational herdsman sharing a commons. Therein is the tragedy. Each man is locked into a system that compels him to increase his herd without limit—in a world that is limited.

The grazing commons in this example is an open-access resource.

Since it is owned by everyone, access is not controlled. Hardin's conclusion is that individuals overuse the commons because to maximize use is the best way to maximize one's individual interests.¹

This type of strategy to maximize individual interests in open-access situations can be explained also by the prisoner's dilemma game. In open-access resources, since entry is not restricted, it is assumed that choices of the users are independent of one another. If he or she is a rational person, therefore, everyone uses the resources as much as he or she can, whatever choice others make. In consequence, every user of an open-access resource maximizes his or her use of the resources.² In fact, many empirical studies show the overuse that Hardin expects. Cases of two Turkish inshore fisheries (Berkes, 1986), Nova Scotian inshore fisheries (Davis, 1984), and the West Basin of Southern California before the 1940s (Blomquist and Ostrom, 1989) are proper examples of the "tragedy of the commons."

2. Conceptual Differentiation of the Commons

A "commons" and "common property" should be treated as different concepts. A commons refers to either a common resource, such as fisheries, groundwater, common lands, and oil pools, or a common facility, such as irrigation systems, streets, sidewalks, and parks. Common property is one of many institutional arrangements for the governance and management of a commons.

The conceptual distinctions that can be applied to a "commons" are shown in Table 1.1. The commons has both physical and institutional attributes. In physical terms, a commons is categorized as a common resource or a common facility, depending on how it is created. In this study, a common resource is defined as a commons that is naturally created and renewed, and a common facility, as a commons that is artificially created and renewed.³ On the institutional side, a commons can be organized as open-access or as common property.⁴ Common

Table 1.1. Conceptual distinctions related to a "commons"

		Physical Character	
		Common Resource	Common Facility
Institutional Character	Open Access	Open access Resource	Open access Facility
	Common Property	Common property Resource	Common property Facility

property is not, however, a synonym for perfect, closed access. Common property refers to common ownership, while open access is not an institutional arrangement for ownership and refers to the absence of explicit property relationships among users. The critical difference between open access and common property lies in the capacity within the latter to exercise access control, regulate use, and undertake collective maintenance.

"The commons," therefore, can refer to a variety of physical and institutional combinations. This study will use "the commons" to refer to the entire set of "open-access resource," "open-access facility," "common property resource," and "common property facility."

Since this study distinguishes "resource" and "facility," "use" and "appropriation" should also be distinguished. Appropriation is defined as "the process of" withdrawing resource units from a resource system (E. Ostrom, 1990: 30)." The concept of "appropriation" can apply to resources rather than to facilities in the sense that facility units are not withdrawn, except temporarily. On the other hand, the term "use" applies more properly to facilities than to resources, but can be defined to include "appropriation" in the sense that withdrawal is one of the purposes of use. In this study, "use" refers to both "appropriation of resources" and "use of facilities."

3. Common-Property Problems

If communities effectively undertake access control, regulate use, and manage maintenance activities in the commons, they may be less subject to the "tragedy of the commons." In fact, a large number of successful commons have been found around the world. High mountain meadows in Switzerland (Netting 1981; Stevenson, 1991) and traditional villages in Japan (McKean, 1986) are among the many examples of commons that have not suffered from tragedy.

It is a mistake, therefore, to conclude that the "tragedy of the

commons" occurs because the commons is commonly owned. In a sense, the opposite is true. Three implicit assumptions underlie G. Hardin's description of the "tragedy of the commons": (1) Anyone is free to use the commons, that is, access is not controlled; (2) There are no regulations governing use of the commons, that is, no one is restricted on how many animals to graze, where to graze, and when to graze; (3) No one invests in the care or maintenance of the commons. The tragedy of Hardin's grazing commons occurs because it has no rules that control access to the commons, regulate grazing behaviors, and make provision for maintenance; therefore, each herdsman increases the number of grazing animals without limit and does nothing to protect the pasture. The tragedy of the commons accrues from the lack of common ownership, that is, from a condition of open access (For more, see Runge, 1986; McCay and Acheson, 1987; and Stevenson, 1991).

The mere presence of common ownership, however, does not solve the characteristic problems of the commons. Those problems require collective action by the community involved in the use of common property. Whether such collective action actually occurs, and whether it is effective, depends on many factors affecting the activity of the community to act collectively and the incentives of individuals to behave in an opportunistic fashion.

B. Physical Attributes of the Commons

All examples of the commons share certain physical attributes, but in various degrees. First, exclusion of potential users of the commons is neither perfect nor infeasible. Instead, the commons is subject to the probability of some degree of difficulty with exclusion. Second, the commons cannot be jointly used by an unlimited number of individuals; use of the commons is subject to limited jointness. Third,

the commons is subject to boundary conditions that derive from physical characteristics and may or may not correspond to its institutional boundaries. In addition, the commons can be categorized with respect to whether it yields income or consumption goods and services to users. The commons also varies according to the degree that its degradation can be monitored and the ease with which it can be renewed.

1. Partial Excludability

Exclusion occurs when potential buyers are excluded from goods and services unless they pay the stipulated price (Ostrom and Ostrom, 1977; Oakerson, 1986). It is relatively easy to exclude people from private goods unless they pay the price in most markets where the private property system is well institutionalized. Private property ownership is protected by individual owners as well as governments through their police and judicial functions. In other words, access control of private goods is either individual action or governmental action.

On the other hand, it is technically infeasible to exclude people from public goods, such as radio waves or national defense, even if they do not pay for those public goods.⁵ In the use of public goods, therefore, users and non-users are not distinguished. Even among publicly-used goods, however, there are certain types of goods where it is feasible to exclude potential users unless they pay for use. They are called "toll" goods. Subways and toll ways are examples.⁶

Exclusion of potential users of the commons, however, is neither necessarily impossible nor costlessly undertaken. Exclusion of non-payers to the commons is possible, but costly. Given partial excludability of the commons, how to reduce the cost of exclusion is an issue of institutional arrangements for access control in common property situations.

To summarize the argument, access in either private or public goods is not an issue. Most common property resources or facilities,

however, are not subject to perfect exclusion or nonexclusion, but instead, to a wide range of excludability—partial excludability, because they belong neither to any single individual nor to the public (anyone who gains access). If a resource is privately owned by a single individual, access to it is individually controlled. The cost of access control to private goods is relatively small in the societies where private right is well institutionalized for many years. If a resource or facility is commonly owned by a community of people, on the other hand, access control in this common goods is feasible, but not automatic. Access control in common property resources or facilities is an issue of collective action by the community who owns them in common.

2. Limited Jointness in Use

Pure public goods are subject to jointness in use, while private goods are subject to alternative use. Because air, public TV, and national defense are used by any number of people, then those goods are classified as public goods. To the contrary, since a piece of cake taken by one person is not available for another person to eat, it is categorized as a private good.

Whether a certain good is subject to jointness in use depends on how subtractible the good is. As a variable, jointness refers to degrees of subtractibility (Ostrom and Ostrom, 1977). That a good is subtractible implies that it can be scarce. When a common resource is scarce, the amount supplied is not enough to meet demand. In cases of common facilities, such as streets, sidewalks, and parks, their scarcity results in crowdedness.

While one person's consumption of pure public goods does not subtract from their consumption by others, common resources or facilities are subject to a broad range of partial subtractibility (Oakerson, 1986). A grazing commons has a capacity to feed animals on a renewable basis up to some point, but beyond a certain number of

animals, the grazing commons is insufficient for feeding and cannot be renewed. Likewise, the use of streets by one driver does not preclude its use by other drivers within limits; at a certain point additional drivers make streets crowded so that the driving speeds on the streets are reduced. The limiting point at which one person's use begins to subtract significantly from other person's use varies with the physical attributes of each commons. For example, the capacities of wide and well-paved streets are larger than those of narrow and unpaved streets.

Many commons involve multiple, heterogeneous types of uses (V. Ostrom, 1968). For example, rivers are used for transportation, recreation, or manufacturing industry as well as fishing. Parks are used for walking, resting, painting, or sports. Each type of use differs in subtractibility. One person reading on a bench does not subtract from others' resting on grass, but one person practicing golf does subtract from others' activities. Only a few golfers in a multi-use park may be a threat to other types of uses by a large number of persons. Likewise, fast driving by a few persons subtracts from children playing on residential streets. Multiple, heterogeneous uses of common resources and facilities give rise to use regulations in order that jointness can be maintained within tolerable limits.

3. Boundary Conditions

The commons is subject to boundary conditions, based either on physical characteristics of the resource or facility or on patterns of use, that vary in several ways. Physical boundaries mark the "extent" of the commons, how far a resource or facility extends in geographic space. Some commons are of relatively small extent (e.g., a small field), but many are large and extend over hundreds of acres of land or water. In a few cases, the commons is global. The commons also varies in the definiteness or precision of its boundaries, as well as the ease with its boundaries can be known. Atmospheric boundaries are quite

indefinite, although wind currents do result in limited boundary conditions. Fisheries have somewhat indefinite boundaries, but often they can be associated with geographic configurations such as capes and bays. Groundwater basins have fairly definite boundaries, but they are hidden beneath the surface of the earth and not easily knowable. In a few cases, the extent of the commons depends as much on patterns of use (e.g., how far animals graze) as on the physical characteristics of the resource or facility itself.

It is important to distinguish the physical boundaries of the commons from boundaries that are institutionally defined, i.e., from jurisdictional boundaries (Oakerson, 1986). The problem of institutional design is to match jurisdictional boundaries to physical boundaries. Even if physical boundaries are somewhat indefinite, it may be possible to define a limited set of jurisdictional boundaries that would be consistent with physical conditions. The precise choice of jurisdictional boundary is in this case arbitrary, but it falls within a range that is grounded in physical conditions.

4. yielding Income or Yielding Consumption Goods and Services

Empirically, many commons generate goods and services that yield incomes to the immediate users. For example, fish from inshore fisheries, water from irrigation systems or groundwater basins, oil from oil pools, and wood from forests are all major--often indispensable--income sources for their users. With guaranteed access to the income-yielding commons, users are assured that they can secure their livelihood (Berkes and Farvar, 1989). Common-property institutions are traditionally one of the principal means of ensuring livelihood security from common resources (Korten, 1986).

Some types of commons, however, do not yield income to their users; for example, residential parks and streets usually do not make income. Rather, these common facilities yield consumption services with

respect to residence to their users.⁷

These two contrasting types of commons may differ in important respects. When access by outsiders does not threaten the incomes of users, they may be less interested in restricting access. Nor may outsiders have quite as strong an incentive to gain access where the commons is not income-yielding. Where a commons does not yield income to its users, the users may have a weaker collective interest in controlling access by outsiders than the users of an income-yielding commons.

5. Other Variable Attributes of the Commons

The commons varies according to the degree that its degradation can be monitored. For example, the degradation of grasslands is fairly easily observable, while the depletion of groundwater is quite difficult to detect up to a certain point. Maintenance of the commons can be less costly when the degradation is more easily and promptly detected.

The commons also varies according to the ease with which it can be renewed. For example, fisheries and grasslands are naturally renewed at some rate if access and use are controlled, while oil pools are actually nonrenewable once they are used up. On the other hand, man-made commons like urban common facilities are not naturally renewed, but artificially renewed by repair and replacement.

C. Characteristic Collective-Action Problems of Common-Property Communities

Three collective-action problems—access control, regulation of use, and maintenance—are characteristic of common-property communities. Each problem is related to a different physical attribute of the commons, as discussed above. Access control is related to the conditions of exclusion and boundary definition. Regulation of use is

related to the condition of limited jointness in use. Maintenance is related to the condition of resource renewability or the rate of deterioration of a facility.

1. Access Control

Access control by the common-property community generally refers to control at the community (or resource/facility) level. Common-property communities attempt to control entry by outsiders into their boundaries. In undertaking access control at this level, common-property communities must solve both technical problems and an economic problem.

In general, the technical problem in access control depends on the conditions of physical boundaries, identifiability of outsiders, and incentives of outsiders to gain access. First, if physical boundaries are vague and easily permeable, both the technology for physically demarcating boundaries and the cost of monitoring them will be problematic. Second, if it is difficult to identify outsiders, recognizing who should be controlled will be a problem. Third, if the commons is very essential for living, i.e., owing to its income-yielding function, outsiders may attempt to gain access in a more persistent fashion. Some of these factors vary with the size or extent of the commons. Other things being equal, the bigger the commons, the more difficult access control becomes.

The economic problem turns upon a comparison of the benefits to be gained from access control with its costs. Theoretically, access control is optimal when its marginal benefit equals its marginal cost. When the cost of access control is disproportionately larger than its benefit, therefore, communities may actually benefit from allowing outsiders access. In some cases, the benefits from access control at the community level can be negative. Presumably the common-property community attempts to choose an optimal degree of access control, not to

maximize it, because simply maximizing the degree of access control is not necessarily the most economical.

The attitude of the community toward outsiders may somewhat depend on its "we/they" sense. The solidarity of the community can be measured by the strength of "we/they" sense. The ability to exclude outsiders may be related positively to solidarity of the community (Campbell, 1982). Lack of solidarity of commons-users may result in less collective interest in access control. Traditional communities, which have been associated for long years, may be more exclusive toward outsiders than transient communities.

The solidarity of the community, however, does not automatically result in successful access control. Individual residents of the community still have incentives to free-ride in the provision of access control as long as it is undertaken collectively. Contributing to or paying for access control, therefore, requires collective action capable of foreclosing or sharply limiting the option of free-riding.

Due to the many burdensome technical problems that may arise in access control, responsibility for access control is often delegated to agents. In this case, however, there arises a principal-agent problem. Agents have incentives to shirk as long as their performances in undertaking access control are not individually monitored. They are also vulnerable to corruption. For example, they can receive side payments from outsiders in return for allowing them access. These problems, such as shirking or corruption, are more complicated by the fact that the principal is not an individual, but a collectivity. Monitoring of agents by the principal requires collective action by members of the community. In this case, individual residents still have incentives to free-ride in monitoring unless they can benefit selectively.

Access can be controlled at the "use-point" level as well as the community level. Control of access to use-points applies not only to

outsiders, but also to recognized members of the community. A commons usually includes a number of use-points at which individuals appropriate resource units or undertake specific uses. For example, a typical irrigation system includes a river, dam, main canal, and watercourses (Tang, 1989). In the irrigation community, a dam is the production resource; a main canal is the distribution resource; and, watercourses are the appropriation resources from which water is extracted by individual farmers at use-points (Tang, 1991 and 1989). Fishing areas that are particularly abundant in fish population are key use-points within fisheries. Oil is extracted from underground pools through pumps. Parking spaces in a residential community are the use-points to enjoy the consumption services of parking.

In economic terms, besides comparing the benefits to be gained from access control at the use-point level with its costs, it is necessary to compare the cost of access control at the community level with the cost of access control at the use-point level. Access control can be organized in four ways:⁸ (1) control at both the community level and the use-point level; (2) control only at the community level; (3) control only at the use-point level; or (4) control at neither the community level nor the use-point level (equivalent to no access control). If a common-property community includes very extensive and easily permeable boundaries and a large number of right-holders, control of access by outsiders tends to be infeasible or prohibitively costly. In this case, access control at the use-point level can be more efficient than access control at the community level, so far as access by non-payers to a limited number of use-points is controllable.

2. Regulation of Use

Successful exclusion of outsiders or non-payers does not guarantee that the "tragedy of the commons" will be avoided, because rational commons-users will still attempt to maximize their individual interests.

They will try to obtain as many resource/facility units as possible once they have gained access to the commons. Without limits on actual use, they may fully deplete the commons and "tragedy" will follow.

Access control and use regulation are complementary means of maintaining limits in use. While access control refers to **who** is allowed to use the commons, regulation of use refers to **when, how, and what** to use. Analytically, exclusion of outsiders or non-payers from the commons or its use-points can be regarded as "access control," while restriction of use behavior to the stipulated criteria can be regarded as "regulation of use." In practice, one blends into the other.

Regulation of use can be classified into three types. The first type is regulation of timing in use, referring to as regulation of "when." Timing may be important to resource renewability. For example, fishing is often regulated in the breeding season. Use of rivers or lakes is often controlled in the dry season. Use of facilities may be allowed only during designated times. The second type is regulation of use quantities, referring to as regulation of "how," also often very important to the renewability of resources. Use beyond the sustainable limit can fatally damage the commons. Quantity limits can include limits on the amount of total extraction (e.g., total extraction of oil), limits on one-time use (e.g., weight limit on elevators), limits on the size of resource unit to be extracted (e.g., regulation of fish size), and limits on the frequency of use (e.g., daily or weekly). The third type is regulation of technology, referring to as regulation of "what." For example, what boats can be used or what size net can be used is an example of technology regulation. All three types entail technical problems that involve ascertaining the effects of the timing, quantity, and pattern of use on the commons, and determining how best to regulate them as necessary.

Where the commons is subject to homogeneous use, regulation of use can be relatively simple. For example, since oil pools are used only

for oil extraction, oil-extraction behavior alone needs to be regulated. Many commons, however, involve heterogeneous types of uses (V. Ostrom, 1968). For example, lakes are used for fishing, transportation, recreation, industry, and sight-seeing. Regulation of use is more complex in a multiple-use commons because various relationships among uses must be considered. These relationships may be competing or complementary. For example, while excessive extraction of oil above a certain level can subtract from extraction by others, fishing in a lake hardly subtracts from transportation or industry by others. However, excessive use of lake water by industry can subtract from fishing and recreation by others; but, use of lake water for transportation can be complementary to its recreational or industrial use. Not all types of uses in a multiple-use commons are necessarily regulated in a uniform fashion. They relate to one another differently, subject to various thresholds. Particular timing regulations, quantity limits, and restricted use patterns must be established for *each* of the multiple uses.

The economic problem in use regulation is much the same as for access control--comparing the benefits of regulation with its costs. Again, theoretically, regulation of use is optimal when the marginal benefit of regulation equals its marginal cost. The cost of regulation has two components: (1) the benefit to be gained from prohibited uses and (2) the cost of undertaking regulation. As an extreme example, if the commons currently yields extremely high value, the community can benefit much more from use than from regulation. It may be optimal, therefore, to deplete or even in the extreme case exhaust common resources. The common-property community should undertake an optimal degree of use regulation. Neither maximized regulation nor deregulation is necessarily more economical.

Successful regulation of use brings people assurance that others will also keep the use rules (Runge, 1986), and increases positive

reciprocity among users (Oakerson, 1988). Assurance and reciprocity can deter the selfish behavior of individual users. Above all, regulation of use requires collective action to foreclose holdouts by formulating and enforcing use rules specifying timing, quantity limits, and use patterns.

Like access control, responsibility for use regulation can be delegated to agents. Enforcement of regulation by agents may be better in either technical terms or economic terms; however, there is also a principal-agent problem. Agents still have incentives to shirk as long as they are not individually evaluated.

3. Maintenance⁹

Appropriate access control and regulation of use are necessary conditions of maintenance if maintenance is to be productive. If a group of herdsmen invest in maintenance activities of a grazing area, but nothing prevents individual member's animals (or outsiders' animals) from consuming much of the increase in grass, maintenance of the grazing area by this group would have no productivity. But with use-limits in place, group efforts to maintain the commons can increase its productivity for all group members.

The concept of maintenance relates to both resources and facilities. In the case of resources, maintenance refers to efforts to aid artificially in the naturally renewing processes of the resource (Ophuls, 1977). In the case of facilities, maintenance refers to efforts to "slow the deterioration of a facility, whether that deterioration has been caused by use or aging (Ostrom, Schroeder, and Wynne, 1990: 6)." Thus, maintenance is inherently preventive in the sense that it refers to efforts that retard deterioration. In practice, however, it is often difficult to distinguish preventive maintenance from repair, replacement, or reconstruction. There is no sharp line between them. Analytically, however, the distinction is useful.

The maintenance of a commons consists of a series of maintenance acts through time. The benefits of maintenance are generally subtle and time-delayed (Ostrom, Schroeder, and Wynne, 1990). If one act in the series is missing, the effect on the condition of a commons is not immediately or easily noticeable. Even two or three maintenance acts may not make a noticeable difference if they are missing. Each maintenance act by itself has a negligible effect (Oakerson, nd). The omission of maintenance is often difficult for users to detect until maintenance has been deferred too long. The accumulation of a number of maintenance omissions will create a serious problem at some point. Consider the maintenance of a car. Although missing one oil-change may not make a noticeable difference, missing three or four oil-changes may have a fatal effect.

Preventive maintenance, therefore, should be a routine activity that is performed periodically throughout the whole life of a commons (Ostrom, Schroeder, and Wynne, 1990). In other words, maintenance activities should be scheduled ahead before the commons loses its operational capacity in order that it can work efficiently for its expected life. If preventive maintenance activities are not performed *ex ante*, maintenance must be given away to emergency repairs undertaken *ex post*. In many cases, however, *ex post* repairs are more costly. For example, water resources in rivers and lakes are extremely difficult to be perfectly recovered if they have once been polluted. Preventive maintenance may slow the pollution of water resources. Many facilities also cannot be maintained cost-effectively if they have been allowed to deteriorate too far.

The provision of preventive maintenance activities involves a series of technical problems. Before problems appear in actual operation or use, knowing whether maintenance is required is technically difficult. Even though a decision has been made to provide maintenance, what types of maintenance activities and how much maintenance are needed

and when they should be undertaken require technical knowledge.

The economic problem in maintenance depends on comparing the benefits to be gained from maintenance with its costs. Like access control or use regulation, maintenance is theoretically optimal when its marginal benefit equals its marginal cost. Preventive maintenance is important, at least in economic terms, because it is more economical than emergency maintenance up to a certain point. In the case of aged facilities, however, the benefit of preventive maintenance may be much smaller than the cost of replacement. In fact, therefore, many deteriorated facilities are replaced by new ones even before their expected life ends.

Maintenance generally relies on professional activities by agents because many technical services must be performed (E. Ostrom, 1992; Ostrom, Schroeder, and Wynne, 1990). If maintenance is delegated to agents due to the complexity of technical problems, there is also a principal-agent problem. Professional agents and members of the community have asymmetric information on the technical problem of maintenance. Even if agents make a "good" decision on maintenance in technical terms, members of the community may or may not consider the decision "good." Maintenance activities may be resisted by a number of members. Conflicts between agents and members of the community have to be resolved by persuasion and joint deliberation, which are costly. Agents are not competent, alone, to resolve the economic problem inherent in providing maintenance at an optimal level.

The solution of technical and economic problems does not automatically guarantee that maintenance activities will be undertaken. Individual residents have incentives to free-ride as long as they cannot selectively benefit from maintenance. The free-riding problem is more serious in maintenance because a time-dimension problem is involved. Maintenance requires adopting a longer time perspective. Short-term strategies will result in suboptimal maintenance. Appropriate

maintenance requires long-term collective action providing long-term maintenance activities. Individual residents, however, may choose to exit to well-maintained commons in other places rather than contributing to -and paying for maintenance over a long period, as long as their commons does not have a particular, non-market value to them. In general, successful maintenance of the commons has been found in long-enduring common-property communities in which commons-users inherit their common-property rights from generation to generation (Netting, 1981; Stevenson, 1991; McKean, 1986; E. Ostrom, 1990).

D. Institutional Arrangements for the Organization of Common Property

1. Threats to Collective Action

All those who are involved in the collective organization of common property do not "share the same information, incentives, resources, and/or social norms"⁹ (E. Ostrom, 1992: 32). Some individuals may obtain disproportionate benefits by adopting various strategies that E. Ostrom (1992) calls "opportunistic." The strategies, which include free riding, rent seeking, and corruption, are potential threats to collective action by a community of commons-users. Each of the characteristic collective-action problems discussed above must be able to cope with these threats to collective action.

Where a commons belongs to a community with a large number of legitimate users, it is very costly to exclude those who do not contribute to the maintenance of the commons (Olson, 1965). In this community people who wish to use the commons have incentives to invest in private activities leaving others to invest in collective activities (E. Ostrom, 1992; Ostrom, Schroeder, and Wynne, 1990). If all users become free riders, nothing is invested in the maintenance of the commons. Over a long term the commons will be fully depleted.

Even if all users are free-riding, the negative effects of the non-provision are difficult to notice, because the commons may not become useless in the short-term. When free-riding users learn that their inputs are necessary over a long-term, however, it may be too late for them to renew the commons.

While free riding relates to the provision of goods, shirking relates to the production of goods. Those who shirk in production receive a disproportionate share of benefits like those who free ride in provision (E. Ostrom, 1992).

Rent seeking involves active efforts to obtain a disproportionate share from profit-making activities, whereas free riding involves passive behavior of refraining from contribution while letting others contribute (E. Ostrom, 1992). Rent seeking--the activities to make a greater profit than would be possible under competitive circumstances--includes the efforts to control resources, to secure subsidies from others, and to exclude potential competitors (E. Ostrom, 1992; Ostrom, Schroeder, and Wynne, 1990).

Those who have power to control the distribution of benefits from a commons have incentives to seek disproportionate gains in exchange for those benefits (E. Ostrom, 1992). These disproportionate shares usually come from illegal side payments. What distinguishes corruption from other opportunistic strategies is that it is illegal. Even in a self-governing community residents are subject to free riding, rent seeking, or corruption. They either passively free-ride while others contribute, or actively use official positions to pursue rent seeking or corruption.

2. Design Principles of Common-Property Institutions

The characteristic problems of common-property communities are rooted in the physical attributes of the commons, such as partial excludability, limited jointness in use, and indivisibility. Institutional arrangements for governing the commons must be closely

related to those physical characteristics. Institutional arrangements must also be able to deal with threats to collective action in the collective-action situations discussed above. Together, these difficulties pose the basic problem of institutional design in common-property situations.

Common property can be simply defined as common ownership. Common ownership is explicit when it is proclaimed by law. Property law provides an explicit means for authorizing ownership. Common-property law with respect to a particular type of commons may consist of either a single rule or a complex set of rules. Alternatively, common ownership may be inferred from some set of working arrangements, even if it is not legally declared. In the so called "underground" or "informal" sector, for example, the working norms that residents have created for themselves substitute for the law (Landa, 1988). Although the commons in informal residential areas are not actually owned by residents, residents do collectively take responsibility for common facilities (De Soto, 1989). Whether common ownership is explicit or implicit, the owners of common property must have rights to organize collectively.

In this study, the design principles that apply to common-property institutions are adapted from the principles formulated by E. Ostrom (1992 and 1990) and derived from the study of long-enduring, self-organized institutions.¹⁰ Five principles--the definition of boundaries, capacity for rule formulation, capacity for rule enforcement, capacity for revenue-raising, and appropriate nesting of institutional arrangements--will be discussed below.

a. Clear boundaries¹¹

Common property should be clearly defined by boundaries. Without clear boundaries, the commons cannot be claimed as property. If the boundaries are not clearly defined, it will be ambiguous who may or may not use the commons, what is managed, who is responsible for caring for

the commons, and who benefits from its use.

The boundaries of common property refer to institutional boundaries that define the territory of the commons. In addition to the bounded space claimed as common property, the boundaries of common property refer to boundary-rules that define the members of the common-property community (E. Ostrom, 1992 and 1990; Stevenson, 1991). There is a well-defined group of commons-users, who are distinct from outsiders. Common-property institutions distinguish two groups of people--included users and excluded people who do not have the right to use. This contrasts to open access, where everyone is a potential user. The distinction between included and excluded also determines who should pay for the maintenance of a commons. Free riding is more likely when permitted users are not clearly defined.

Many commons are physically bounded. Communities in rural areas can be physically bounded by rivers, mountain ridges, forests, and lakes. Communities in urban areas are also physically bounded by fences, streets, and blocks. Institutional boundaries somehow reflect physical boundaries given in nature or by artificial construction. For example, fences physically demarcate the institutional boundaries of a community by restricting right-holders to residents within the fences.

b. Capacity for rule formulation

Rules are formulated in common-property institutions to organize collective action in relation to access control, regulation of use, and maintenance. Rules in common-property institutions refer to two different levels of rules: (1) rules that enable common-property communities to formulate rules or that specify the limits of rule formulation by common-property communities, and (2) operational rules formulated by common-property communities themselves.

If government rules effectively forbid commons-users from organizing for the purpose of collective action, the commons cannot be

effectively organized as common property. The rights of commons-users to formulate their own rules, therefore, must not be challenged by external authorities, including government.¹²

Rules in common-property institutions should have three important characteristics. First, they affect collective-action situations interactively with the physical attributes of the commons so that they should reflect and specify the physical conditions of the common-property community. Second, they should keep proportional fiscal equivalence between the benefit and the share of payment in the use of the commons (discussed below). Third, common-property institutions should also be organized to make arrangements for commons-users themselves to modify the operational rules that apply to them to better fit to the specific characteristics of their community.¹³

c. Capacity for rule enforcement¹⁴

The formulation of rules does not guarantee that users will follow the rules. As E. Ostrom (1992 and 1990) argues, agreeing to follow rules *ex ante* is easier than actually following rules *ex post*. Since following rules is costly to individual users, not following rules gives benefits to them. It is infeasible for users to voluntarily follow rules so long as others do not obey the rules. Thus, rules must be enforced.

Rule enforcement gives users confidence that others are not behaving as free riders. When the expected sanctioning costs to free riders are greater than the expected benefits from free riding, no one would free-ride. Monitoring increases the expected costs of sanctioned free riding. If monitoring is not so effective, the expected costs of free riding will decrease, then, individuals will choose to free ride. Successful sanctioning, therefore, must be preceded by successful monitoring. Without monitoring, there can be a lack of fairness between free-riding and sanctioning. Unless sanctioning becomes fair and

proportional, rule enforcement either is infeasible or yields distorted outcomes.

When rule enforcement gives disproportionate benefits and costs to different users, it gives rise to conflicts among them. Rules are not successfully followed and enforced as long as those conflicts include inequity in resource allocation and maintenance. The modification of rules does not necessarily guarantee that conflicts are resolved, because the modified rules may produce another conflicts as long as users do not well understand the rules. Thus, rule enforcement has to involve the mechanism of conflict resolution, by which those who are related to a community of a commons discuss and determine who, what, where, how, and when on the use of the commons.

Rule enforcement is costly. When the costs of monitoring, sanction, and conflict resolution are greater than the benefits of rule enforcement, it is infeasible to enforce rules. If rule enforcement relies upon organizational activities, the benefits that the organization yields must be greater than its transaction costs.

d. Capacity for revenue raising and spending

Common-property institutions must be capable of legitimately generating their own revenue. Common-property communities raise revenue within a set of fiscal rules. The fiscal rules not only authorize common-property communities to raise revenue from individuals on a non-consensual basis, but also limit their ability to do so.

Common-property communities can raise revenue through either a general charge or a user charge, or both. A general charge resembles a general tax or mandatory membership fee of the community, while a user charge applies only to users. The base of a general charge can vary. It can be levied on either every member of the community or every household within the community. The charge can be based on the value of related private property or on a flat rate per household or person.

Related to access control, non-payers may be treated as outsiders, and be excluded.

Revenue raising by means of general charges alone may fail to maintain "fiscal equivalence"¹⁵ between the benefit received and the share of revenue paid by individuals. By identifying who benefits and how much, those who receive the most benefit should contribute the largest share of revenue.¹⁶ User-charges are more closely tied to the level of use or particular types of use than a general charge. In addition, use regulation may be more efficient through a user-charge rather than a general charge.

e. Appropriate nesting of institutional arrangements¹⁷

By organizing common-property institutions into multiple levels of nested structure, resource-users take advantage of different scales of organization and have selective incentives to contribute to the commons (E. Ostrom, 1992 and 1990; Olson, 1965). Small-scale organizations may prevent users from free riding (Olson, 1965), and are appropriate for maintaining tacit rules (Stevenson, 1991). A federation of small-scale organizations enables them to take advantage of economies of scale so that people of a federated community do not necessarily have to rely upon external agencies for the provision of capital investment (E. Ostrom, 1992).

Physical features of a commons may often demarcate the organizational sub-structure of the community. For example, large-scale farming areas may be divided by rivers and their tributaries; mountainous grazing lands may be distinguished from one another by mountain ridges; inshore fisheries may be sectioned by capes and bays. Residential communities in urban settings may have nested decision-making structures on the basis of streets or buildings (Oakerson, 1989b; ACIR, 1988).

E. Summary

Hardin's "tragedy of the commons" has been often cited as if the tragedy were an inescapable outcome. However, the tragedy of the commons does not necessarily occur in every type of commons. As long as the commons is subject to the probability of some difficulty with exclusion within a set of boundaries and limited jointness in use, it can be treated potentially as open-access. Moreover, if it is owned by either nobody or everybody, it is inherently open-access. In open-access situations, individual commons-users have less incentive to regulate use or provide for maintenance. If there is sufficient demand for use in open-access situations, the commons can be used by everyone without limit and will be fully depleted. One alternative to open access is common property, an institution in which the commons is commonly owned by a community of people. Although common property is an alternative that can avoid tragic outcomes, this result is not automatic.

Three collective-action problems--access control, regulation of use, and maintenance--arise in common-property communities. They would not be easily resolved if left to individuals acting separately, but require collective action by those who are involved in the ownership and use of the commons. The simple presence of common ownership, however, does not ensure that collective action will occur. It cannot be taken for granted. Individuals in collective-action situations have incentives to free-ride, if they cannot benefit selectively from their joint activities.

The collective-action problems have both technical and economic problems. In particular, the technical problem in access control depends on both demarcating and monitoring boundaries and identifying potential users. Regulation of use poses technical problems related to ascertaining the effect of timing, quantity, technology, and pattern of

use, and determining how best to regulate use as necessary. Maintenance requires not only collective action, but a long-term perspective, if maintenance is to be performed in a timely manner rather than deferred. Knowing whether maintenance is required, what types of maintenance activities and how much maintenance are needed, and when they should be undertaken--all are technically problematic.

The economic problem in collective action turns upon the comparison of benefits with costs. Theoretically, collective action is optimal when marginal benefit equals marginal cost. Presumably, the common-property community attempts to undertake an optimal degree of collective action, not to simply maximize it.

Although the common-property community may benefit from delegating the responsibility for undertaking collective action to agents in both technical and economic terms, this creates a principal-agent problem. Agents have incentives to shirk as long as they are not individually monitored. Monitoring of agents by the principal, however, depends on collective action by the members of the community. Individual residents have incentives to free-ride in monitoring as long as they cannot benefit selectively. Shirking and corruption of agents are more likely when monitoring cannot be sustained at appropriate levels.

Given the physical attributes of the commons, the strategies that users choose and the ways that they interact with one another may work to solve or exacerbate collective-action problems. In particular, various types of opportunistic behavior, such as free riding, shirking, rent seeking, and corruption, can yield more difficulties in collective action by a community of people. These collective-action problems in common property situations are affected by variations in the design of common-property institutions.

Common-property institutions make arrangements for governing the commons and taking collective action, and thus, are potentially able to solve collective-action problems, while open-access institutions are not

able to do so. In general, definition of clear boundaries of both a community and its commons-users, capacity to self-govern and make collective-choice arrangements in the formulation, modification, and enforcement of rules, capacity for revenue-raising, and nested institutional arrangements provide criteria for designing appropriate institutional arrangements for common property.

Notes

1. According to Hardin, the positive utility of incrementing one animal is nearly +1, because the herdsman receives all the benefits from the sale of the additional animal. The negative utility is just a fraction of -1, because the effects of overgrazing are shared by all the herdsmen. Thus, it is rational to add as many animals as possible.

2. This is a prisoner's dilemma (PD) game:

		I	
		Use	Do not use
Others	Use	-1 -1	+3 -3
	Do not use	-3 +3	+1 +1

The figures in the upper-right corner of each cell indicate the payoffs that "I" make. The figures in the bottom-left corner of each cell indicate the payoffs that "others" make. Whatever choices others make, the payoff for me is always greater when I use than when I do not use ($-1 > -3$ or $+3 > +1$). Therefore, I always choose to "use," as long as I do not know others' choices. By the same way, since the PD game is symmetrical, others also always choose to "use," irrespective of choices that I make. As a result, everyone always chooses "use" in this game and makes a payoff of -1. If both others and I choose "do not use," the payoff will be +1 to anyone. However, no one chooses "do not use" in the PD game situation.

3. Common facilities differ from common resources in some important respects. Facilities, such as irrigation systems or residential streets, are not self-renewing like resources, such as grasslands or fisheries. Man-made facilities are only artificially regenerated. Even natural resources, however, are sometimes renewed artificially. Californian groundwater basins are often refilled with water from the Colorado River that is conveyed through the water pipelines. Inshore fisheries in a number of countries are supplied with baby fish that have been artificially hatched in fish farms. In addition, facilities are subject to decay even if not used at all, while resources are preserved as long as they are not used. Thus, resources can be optimally maintained if their uses are controlled within limits, but a man-made facility cannot continue to operate efficiently even for its expected life without some level of both routine and emergency maintenance, in addition to use controls. For a related discussion of this problem, see E. Ostrom, R. Gardner, and J. Walker, Rules, Games, and Common-Pool Resources (1992): Chapter 1. The authors addressed the difference between demand side versus supply side provision problems.

4. Open-access and common property are two kinds of property arrangements that are feasible. There are also private property and state property.

5. The Korean national government monthly levies a public TV tax on those who own a TV set. Even if people do not pay for the public TV, however, they will never be excluded from watching the public TV channel; instead, they will be charged late payment fees.
6. For details on the classification of private goods, public goods, toll goods, and common pool resources, see Ostrom and Ostrom (1977).
7. Not all commons can be easily dichotomized according to income-yielding or not. In a sense, many commons yield mixed types of products. For example, lakes or rivers are used not only for yielding income, but also yield consumption goods, such as boating, swimming, and playing. The difference is in how a community regards rivers as a common resource or facility. The farming community regards rivers in relation to income, while tourists use them for recreation. The fishing community also treats inshore fisheries as a major income source.
8. Entertainment centers, such as Disney Land or Six Flags, can choose among following three alternative ways for selling tickets: (1) sell tickets for entry and entertainment facilities separately; (2) sell tickets for entry and all or selected entertainments in a package; and (3) do not sell tickets for entry but sell tickets at each entertainment facility.
9. If "maintenance" is defined as "any activity that slows the deterioration of a facility, whether that deterioration has been caused by use or aging (Ostrom, Schroeder, and Wynne, 1990)," maintenance includes access regulation in use. In this section, however, the concept of maintenance includes neither access control nor regulations of use.
9. Those individual disparities may arise from coordination and information activities, such as coordinating input activities, obtaining relevant information about transformation, or attempting to obtain disproportionate advantage from transformation activities (E. Ostrom, 1992: 30-38).
10. The institutional design principles developed by E. Ostrom refer to (1) clearly defined boundaries, (2) proportional equivalence between benefits and costs, (3) collective-choice arrangements, (4) monitoring, (5) graduated sanctions, (6) conflict resolution mechanisms, (7) minimal recognition of rights to organize, and (8) nested enterprises.
11. Adapted from Design Principle 1 designed by E. Ostrom (1992).
12. Adapted from Design Principle 7 designed by E. Ostrom (1992).
13. Adapted from Design Principle 3 designed by E. Ostrom (1992).
14. Adapted from Design Principles 4, 5, and 6 designed by E. Ostrom (1992).
15. This concept is adapted from M. Olson (1969) and ACIR (1987): ch.2.
16. Adapted from Design Principle 2 designed by E. Ostrom (1992).
17. Adapted from Design Principle 8 designed by E. Ostrom (1992).

Chapter II
RESIDENTIAL COMMUNITY ASSOCIATIONS

A. The Urban Commons

1. The Urban Commons in Residential Areas

Urban space is commonly used or shared by a multiplicity of different users. The common space, such as streets, parks, sidewalks, parking lots, and squares, may be referred to as an "urban commons." Because the urban commons is subject to some difficulty in exclusion and has only limited jointness in use, it tends to be treated as open-access, public space, subject to the care of a general-purpose local government through its police, fire, sanitation, and public-works officials. Like any open-access commons, urban space is potentially subject to tragedy, especially under conditions of "great population density.

The urban commons has particular physical attributes in, residential contexts. First, the urban residential commons is closely related to the preservation of housing stock. In other words, the conditions of an urban residential commons have an effect on the value of private housing stock, just as an irrigation system affects both the harvest quantity and the value of farming fields within the system. For instance, residential security is generally perceived as security in residential streets as well as security in each house (Jacobs, 1961). If the residential streets are perceived as unsafe, residents may feel insecure and move their place of residence. As more residents leave the residential area, houses would be devalued or abandoned.

The urban residential areas that are organized as open-access, public communities are potentially subject to a type of externality that Schelling (1978) calls "tipping."¹ The effects of deterioration of one

section spread over other sections in the residential area. For example, if there exists an abandoned open-access space in a residential area, it may become a place that fosters illicit antisocial activities such as assaults, drinking, and vandalism (Jacobs, 1961). This unsafe common space may trigger a process of housing abandonment that spreads over time through a neighborhood. The abandonment of a few houses prompts some neighbors to leave their homes. The houses left are vacant and become vandalized. The more houses are abandoned and vandalized, the more neighbors will leave, and so on. At last, the whole residential area may be devastated, and remain so unless it is redeveloped at great expense. Failure to care for the urban commons in the open-access, public residential area may result in the reduction or devaluation of its whole housing stock.²

Second, the urban residential commons involves multiple, heterogeneous types of uses (Jacobs, 1961: ch.2-ch.4). While arterial streets are generally used only for transportation, residential streets are used for playing, jogging, walking, and some types of recreational activities, in addition to transportation. Residential streets are not easily used for both mass transportation and playing at the same time, while they can be jointly used by pedestrians and joggers. Depending on the regulation of particular types of uses, the urban residential commons is subject to varying degrees of alternative use and joint use.

Third, many urban residents are relatively free to exit to other residential communities in a city. If they frequently move from one community to another, their sense of attachment to a particular commons may become weaker.

"Tragic" outcomes can occur in open-access, public residential areas, as often witnessed in many large cities throughout the world. The urban residential commons, however, is not necessarily subject to open access if it is properly designed (Newman, 1972). For example, residential subdivisions surrounded by fences physically and

psychologically inhibit access by outsiders. Public streets, if they are located within those residential subdivisions, are not conveniently used by everyone. They can be maintained as common property of those residential subdivisions rather than as open-access, public space.

2. The Urban Residential Commons Organized as Common Property

Traditional property arrangements in urban residential settings dichotomize property into private and public domains. Housing, buildings, and the limited grounds around them are held as private property, while residential streets, sidewalks, parking lots, and parks are open-access, public facilities. Given the private/public dichotomy; an urban residential commons can be compared to Hardin's grazing commons. Much like grazing animals without limit, the urban residential commons can be overused or overexploited in open-access situations. As a result, just as a tragic outcome occurs in the grazing commons, the urban residential commons may become useless to the extent that access is not controlled, or use is not regulated, or maintenance is not undertaken.

A residential commons, although used also by outsiders, is primarily used by its residents--those who live within its boundaries. They can be considered the primary commons-users. When boundaries are not clearly defined in an open-access situation, however, it is not possible to define the primary commons-users in a clear and unambiguous manner. Without such a definition, it is not possible for residents to assume clear and unambiguous responsibility for the regulation of and care of the residential commons. Therefore, this responsibility is assigned to government. As a number of studies show, however, the commons does not have to be organized by central governmental authority to be effectively regulated and maintained (E. Ostrom, 1992 and 1990; Tang 1991 and 1990; Stevenson, 1991; Blomquist and Ostrom, 1985; Runge, 1986).

If a residential community is organized, the responsibility for the care of its commons can be assigned in part to the association of its primary users, i.e., homeowners and residents of the community. This allows the residential commons to be converted from open-access, public space into a common-property resource or facility, subject to the care of a residential community association (RCA).

B. Defining RCAs

Integrating a number of theoretical and empirical studies on RCAs (Oakerson, 1989a and 1989b; Bish and V. Ostrom, 1973; Logan and Rabrenovic, 1990; Fisher, 1984), an RCA can be defined by three elements. A community association must have all three elements to be considered an RCA in this study. Empirically, most condominiums and homeowners' associations in the U.S., as well as apartment communities in Seoul, qualify as RCAs by this definition.

The three defining elements are as follows:

- (1) the association is created by developers as an adjunct to the decision to develop a housing community;
- (2) membership in the association is mandatory and automatic on the purchase of, or residence in, property within the community; and
- (3) an elected governing board has the authority to enforce rules governing the use of common and privately-owned property and to raise revenue to provide collective goods for the community, including both the maintenance of common infrastructure and "public" services.

The distinguishing institutional feature of RCAs when compared to local governments is their private creation by developers as an adjunct of the process of housing development. Otherwise, they function very much like small local governments—automatic mandatory membership, use of an elected governing board, provision of collective goods and

services, and enactment of rules pertaining to individual and household behavior. It is in the method and circumstance of creation that RCAs are most unlike local governments. The creation of new RCAs is directly linked to the development of new residential communities, whereas the creation of local governments is seldom as closely tied to housing development.

While RCAs are private organizations in the way they are created, they are public organizations in the types of functions they perform. Therefore, RCAs are often called "private governments" or "quasi-governmental" organizations (Ostrom, Bish, and Ostrom, 1988; Oakerson, 1989b). In this sense RCAs can be distinguished from private clubs and purely voluntary neighborhood associations, as well as from municipalities.

RCAs in the U.S. have three basic legal forms; condominiums, homeowners' associations, and cooperatives (ACIR, 1989).³ In Korea RCAs are found exclusively in apartment communities. RCAs can also be categorized as territorial or nonterritorial, according to their geographical boundaries. Territorial RCAs encompass real estate and define a set of boundaries much like a municipality. Nonterritorial RCAs include only high-rise buildings or sets of units on individual lots (ACIR, 1989). Most apartment RCAs in Seoul, although composed of multiple high-rise buildings, are territorial.

The growth of RCAs in the U.S. has exploded during the last 30 years. The estimated number of RCAs in the U.S. is about 130,000 in 1989, compared to fewer than 5,000 in 1960. Much of this growth results from the dramatic increase in planned unit development (PUD) zoning and condominium ownership projects (ACIR, 1989; Dowden, 1989).

C. RCAs as Common-Property Institutions

The key to understanding RCAs is recognizing that they are common-property institutions, much like those discussed in Chapter I. RCAs have not been previously studied from this perspective. In addition to individually-owned, private housing, RCAs include a substantial amount of common space and facilities created with the development of residential communities. In condominiums, for example, each housing unit is individually owned, but the buildings, grounds, and common facilities are owned in common. These commons are neither private property belonging to individual owners nor public property cared for by government; instead, the commons is owned by the association of homeowners. This study applies common-property theory to RCAs. Common-property theory suggests both a set of characteristic problems associated with any commons and a set of characteristic institutional arrangements for addressing these problems. Institutionally, RCAs possess the necessary characteristics to be considered potentially effective common-property arrangements.

1. Boundary Conditions

Without clear boundaries, the commons cannot be effectively claimed as common property. The boundaries of the RCA refer both to jurisdictional boundaries that define its territory and to the definition of membership. The territorial jurisdiction of an RCA is unambiguously given by property lines that can be physically marked. Membership is mandatory and automatic on the purchase of a housing unit within the RCA. Because the members of the RCA are owners of the commons, they have the right to exclude outsiders, being clearly entitled to control the property within the RCA boundaries. The degree to which outsiders can effectively be excluded, or even whether the RCA community wants to exclude them, in every case, is a separate question.

2. Governance and Collective Action

Although certain types of rules are externally given, RCAs have " the capacity for formulating, modifying, and enforcing their own rules as well. RCAs also have the capacity to raise revenue and create internal decision-making arrangements.

In the United States, rules pertaining to RCAs are generally structured at three different levels, although they vary slightly from state to state (Hyatt, 1988; IREM, 1984). The first level of rules consists of state legislation. Most states have legislation referred to as a Horizontal Property Act or a Condominium Act. The second level of rules consists of both a declaration by developers that defines the extent of common space to be commonly owned and RCA bylaws that specify how the RCA shall function. The third level of rules refers to operational rules that regulate the decisions and behaviors of individuals and households, including residents and employees.

State legislation legally enables RCAs to be created by allowing private developers to do so. It also requires homeowners to be RCA members and allows RCAs to regulate members and levy mandatory fees. Within the opportunities and limits created by state law, the declaration and bylaws serve the essential role of an RCA constitution. In particular, the declaration generally contains the rules on membership and jurisdictional boundaries, and the bylaws provide the governance framework by specifying governing structure, voting and election, and regulation of resident behavior. The bylaws also include fiscal rules that not only authorize RCAs to raise revenue from members, but also limit their ability to do so.

Based on the bylaws, RCAs establish operational rules on the use of the commons. The RCA rules regulate the user behavior and allocate use among joint and alternative uses. Although private housing is subject to private uses by individual residents, particular types of private uses can be controlled by the RCA in the interest of regulating

external effects. There are two types of regulations—use regulation and architectural regulation. RCAs have rights to regulate resident behavior of all users. Even details such as drying clothes or cooking in a balcony can be regulated by RCAs. Architectural regulation sets the guidelines that property owners must follow when changing the exterior of their unit or structurally altering the unit. These regulations can be important to enhancing and preserving the property value or character of communities.

The RCA bylaws generally allocate decision-making among three types of arrangements. The first type is decision-making by all members. The RCA members participate in membership meetings, voting, and elections. Voting rights are given one per unit, not per resident (ACIR, 1989). The second type is decision-making by a board of directors. While certain matters that affect the RCA must be put before the general membership meeting, most decisions are made by the board of directors—the official governing body of the RCA. The members of the board of directors are elected by and from the members of the RCA. The primary responsibility of the board is formulating, modifying, and enforcing rules pertaining to the operation of the RCA (ACIR, 1989; Hyatt, 1988). The board often establishes a management office as its administrative body. The third type is decision-making by committees. Once a board of directors has been elected and its officers chosen, the next step is to appoint committees. The committee system can aid the board and facilitate the operation of the RCA by researching issues prior to their debate at meetings (IREM, 1984).

D. RCAs in a Local Public Economy

1. Partitioning Urban Space

As common-property institutions, RCAs in effect partition urban

space by enclosing the common space within their boundaries and treating this space as common property rather than as open-access, public property. Fences can be built and access by outsiders controlled. By partitioning urban space, however, RCAs do not necessarily aim at completely isolating themselves from the rest of the city, although they do seek to buffer or shield themselves from some outside forces. They do aim at making property-owners responsible for the care of common space in proximity to their place of residence (see Newman, 1972). RCAs thus tend to complement local governments, and provide some of the services that RCA residents would otherwise receive from governments. In some cases, they enable their immediate residents to enjoy the common residential facilities that governments might fail to maintain.

In St. Louis County, Missouri, for example, five different types of units are involved in street service provision: state, county, municipality, developer, and subdivisions (see ACIR, 1988: ch.6; Oakerson, 1989a). While residential streets are common property of subdivisions, arterial streets are public property of municipalities, the county, or the state. In 1986, at least 427 private subdivisions, organized as RCAs, maintained their own streets. They restricted access and controlled traffic within their boundaries, while paying for and arranging for maintenance of their own streets. RCAs, although they are private jurisdictions in a legal sense, function as collective provision units for the residential streets within their jurisdictions.

2. RCAs as Provision Units

Just as RCAs effectively partition and manage urban space as common-property institutions, by the same token they fit into a local public economy as service provision units. RCAs are capable of providing certain collective services that are packageable at the community level. They are one of various types of provision units in a differentiated local public economy.

a. Differentiating a local public economy

Many traditional scholars of public administration have argued that there is only one right way to organize local government in a large metropolis: a single, areawide unit of government and uniform arrangement of subunits. However, metropolitan areas frequently are organized by numerous independent jurisdictions of various size and type. These various units interact through processes of cooperation, competition, conflict, and conflict resolution (V. Ostrom, 1990) and enable individual citizens to have a number of opportunities to choose service packages that best suit their preferences (Ostrom, Tiebout, and Warren, 1962; V. Ostrom, 1989). Such local systems can be better understood as public economies maintained by multiple actors, rather than as purely governmental arrangements that are dominated by a single unit of government. A number of studies have shown that if local public economies are properly differentiated, they tend to be more responsive to citizen preferences, efficient in service production, and equitable in-service finance and delivery.⁴

Counties, townships, municipalities, and special districts are units in a public economy, much like households and firms in a private market. RCAs are also viable units in a local public economy. Although RCAs are private in a legal, nominal status, functionally they are public organizations in that they provide community services (ACIR, 1989). The creation of housing developments is followed by the creation of RCAs as collective-goods provision units that are very closely matched to the physical characteristics of those communities. In other words, as new housing is developed, new RCAs are formed, and the local public economy is more differentiated.

b. Separation of provision and production

The study of local public economies distinguishes the concept of provision from the concept of production (Ostrom, Tiebout, and Warren;

1962). Provision, in general, refers to collective choices that determine: (i) what and how much service to provide; (ii) what and how to regulate; (iii) how much revenue to raise and how to raise it; and (iv) what arrangements to make for community service production (ACIR, 1987; Ostrom, Tiebout and Warren, 1962). Production refers to the more technical process of transforming resource inputs into outputs--making a product, constructing a facility, or rendering a service (ACIR, 1987).

The separation of provision from production enables RCAs to be viable as provision units for a wide array of services in a local public economy. RCAs are "provision units" in that they, in general, make collective choices regarding the provision of community services that a government would otherwise provide. RCAs, however, are not necessarily production units. They can make arrangements for production by contracting with other actors in a public economy including governments and private service agencies. In consequence, the RCA is able to be responsive to resident preferences by matching the scale of provision to the boundaries of the immediate residential community, while it can utilize economies of scale in production by contracting with production agencies of large scale.

c. Functions in a local public economy

RCAs internalize the effects of community service provision. Since public goods have indirect consequences that are called externalities or spill-over effects, their users have incentives to free-ride in provision. RCAs, however, are potentially capable of internalizing the benefits by providing certain public goods that are not packageable to individuals, but are packageable at a community or neighborhood level (Ostrom, Tiebout, and Warren, 1977). As a result, RCAs have incentives to collectively provide public goods within their communities.

The functions of RCAs as provision units--levying mandatory fees,

regulating resident behavior, adjusting disputes among residents, and providing services of security, garbage collection, pest control, and maintenance—are typical of provision units in local public economies (ACIR, 1987 and 1989; Oakerson, 1989a and 1989b; Garreau, 1987; Ellickson, 1982; Ostrom, Bish, and Ostrom, 1988; Parks and Oakerson, 1989; Rich, 1979). Efficiency in a local public economy is enhanced by different-size provision units for different services with different conditions of packageability (ACIR, 1987; Ostrom, Tiebout, and Warren, 1962; V. Ostrom, 1989 and 1990).

In this sense, RCAs are potentially an important institution in the organization of a local public economy. Without RCAs, many public services in urban residential communities would be provided by large local governments and produced by large bureaucracies rather than through the collective action of immediate residents. Yet, the provision of public goods by RCAs does not aim for complete separation of residential communities from larger local or regional units of government, but for their self-governance and representation of their preferences within a public economy (see Kotler, 1969; ch.9).

E. Theoretical Controversy about RCAs

RCAs are capable of generating important benefits for their members, developers, local governments, and the community as a whole. Members often benefit from steady or increasing home values created by the land-use restrictions in their communities. In addition, RCAs often provide their members with a wide range of services that are not available from local governments or that supplement the services provided by local government. Developers benefit by being able to provide more attractive and marketable homes in a stable, livable environment, often at cost savings to both the developer and the

purchaser. Local governments benefit by obtaining development that is self-financing, features desirable amenities, and adds to the local tax base. The larger community benefits from RCAs through the increased range of housing choices available to potential home buyers (Tarlock, 1989).

Critics of RCAs argue, to the contrary, that many homeowners do not understand the implications of living in an RCA community and are unprepared for community control. In particular, those who have not lived in an RCA community may be uncomfortable with dual citizenship in the RCA as well as the local government in which the RCA is located. Concerning taxation, RCA members may pay higher taxes as a result of being in an RCA when the appraisals of individual homes reflect the added value of common facilities. RCA members may complain of double taxation—paying both property taxes and mandatory RCA fees. RCA fees alone may prove a burden to members, particularly those with moderate or fixed incomes (ACIR, 1989). RCA regulations may be so detailed as to be excessive to certain members. Uniform regulations by RCAs may result in conflicts among different interests of residents. Indeed, RCAs in the U.S. frequently limit the size of mail boxes, the presence of clothes lines, and the number and ages of overnight visitors (Barton and Silverman, 1989).

One of the potential advantages of provision by RCAs is their relatively small size. Functionally, as provision units, RCAs are indistinguishable from municipalities (with respect to homeowners) in the U.S. Participation in collective action is enforceable once a home is acquired within the jurisdiction. RCAs are, however, generally much smaller than municipalities. As an agreement for undertaking collective action, a small RCA may, therefore, be able to rely on lower cost, consensual mechanisms for collecting revenue to provide public goods and regulating resident behavior.

Theoretically, RCAs as an institution can be evaluated according

to the following criteria: preference aggregation and expression, fiscal equivalence, and accountability (ACIR, 1989). In terms of aggregating preferences to provide services, an RCA allows a community to act collectively, without requiring the willing consent of each and every homeowner, operating in much the same manner as a local government. But, RCAs tend to be much smaller, with boundaries that are closely matched to a particular subdivision or housing development. As a consequence, RCAs allow more diverse preference expression and more precise fiscal equivalence by closely matching association boundaries to particular subdivisions and housing developments, and by using revenue-raising instruments such as mandatory fees for services that are closely matched to benefits received (Oakerson, 1989b). There are also potential advantages in accountability. Frequent elections and relatively easy, informal access to association officers would tend to increase the potential accountability of an RCA "government" to its members (Oakerson, 1989b).

Proponents of RCAs argue, therefore, that they provide for greater consumer choices, increased local self-determination and community control, greater economic efficiency in land use, more efficient and responsive service provision, more stable neighborhood land values, and more attractive residential neighborhoods (ACIR, 1989).

F. Conclusion: Research Questions

1. What is the nature of the commons in urban areas? What kinds of problems occur in a residential commons? How do they affect the way it is organized?

Theoretically, the urban commons is conventionally organized as open-access. Urban residential areas are dichotomized as private space and public space. If the urban residential commons is treated as open-

access, and if public space is not successfully cared for by government, it may be abused beyond sustainable limits and lead to a reduction of the housing stock. Alternatively, a residential commons can be assigned to the care of the association of home owners and residents in the community and organized as common property rather than open-access, public space. Common facilities within the RCA boundaries are neither private property belonging to individual owners, nor public property cared for by government. Space within the boundaries of RCAs is no longer dichotomized as private space and public space, but as private space and common space. Empirically, we need to know more about how such an institution operates in an urban context.

2. How are RCAs as common-property institutions organized? How have RCAs as common-property institutions been adapted to urban problems? How do RCAs address the characteristic problems of common-property communities?

Theoretically, access control, regulation of use, and maintenance, all tend to be characteristic of common-property communities. Do these same problems apply in urban residential settings? Various types of threats to collective action tend to exist in any type of collective-action institution like RCAs. In RCAs, the free-riding problem can occur in the relationship between residents and the RCA; the shirking problem, between employees and the RCA; the corruption problem, between RCA officers and private service agencies; conflicts, between managers and the RCA governing body, and among residents. Empirically, we need to learn how these characteristic problems and threats to collective action are addressed by RCAs in the urban residential context.

3. How do RCAs function as service provision units? What types of services are provided by RCAs? How are arrangements for service production made?

As service provision institutions RCAs are expected to provide various types of collective services. Those collective services generally aim at maintaining the housing stock and infrastructure related to housing, maintaining the security, health, and peace of the community, and improving the quality and convenience of life. Theoretically, RCA institutions have the capacity to provide collective services. Empirically, are they able to do so?

4. Do RCAs have an important role to play in urban areas? How do they fit with other institutions, including local governments, in the urban setting? Is there a comparative advantage for RCAs in urban areas with respect to certain functions?

Theoretically, RCAs are viable units in a local public economy. They in effect partition urban space by enclosing the common space within their territories and treating this space as common property rather than as open-access, public property. By providing some of the services that RCA residents would otherwise receive from governments, RCAs would tend to complement local governments. Empirically, we need to know more about the types of relationships between RCAs and other units that function in a local public economy.

5. The empirical questions raised above will be addressed in this study through case studies of apartment communities in Seoul. The major questions can be grouped as follows: (1) how are RCAs in Seoul organized as common-property institutions? (2) how do they deal with the characteristic problems of the commons? (3) how do they function to provide various types of collective services? and (4) how do they fit into the context of the metropolitan, public economy of Seoul?

Notes

1. Thomas C. Schelling, in his Micromotives and Macrobehavior (1978: 101), discusses "tipping" as follows:

Tipping is a name that was first applied to neighborhood migration. It was observed that the entrance of a few members of a minority into a neighborhood often caused some among the formerly homogeneous population to leave, or to show signs of leaving. Their departure left openings, so more members of the minority could enter; the increase in new residents induced more of the old to leave, and so forth in the familiar process.

2. The relationship of a residential commons to private housing stock is not necessarily restricted to the case of residential safety. Failure of the urban residential commons to yield other consumption goods and services may affect the housing stock. Residents may also move to another residential area where the streets and parks are better. In other words, the value of private housing is determined by the condition of the residential area as well as the condition of housing itself.

3., In condominium associations, a homeowner holds title to an individual residence, while holding title to the common spaces of the entire condominium in common interest with all other owners. The condominium association does not own any common property; instead, the association manages common property for the common owners. In a homeowners' association the unit owner owns both the interior and exterior of an individual home and a plot of land around it. The association both owns and manages common properties. Members of cooperatives do not own real property. Instead, they own a share in a corporation that owns and maintains the buildings, common grounds, and facilities (ACIR, 1989: 10).

4. See ACIR, 1987; Parks and Oakerson, 1989; V. Ostrom 1989 and 1990; Ostrom, Tiebout, and Warren, 1962; Ostrom and Bish, 1977; Ostrom and Ostrom, 1971; Ostrom, Bish, and Ostrom, 1988; Bish and Ostrom, 1973; Savas, 1978; Schneider, 1986.

Chapter III

INSTITUTIONAL ARRANGEMENTS RELATED TO APARTMENT COMMUNITIES IN SEOUL

The purpose of this chapter is to describe the basic institutional arrangements common to apartment communities in Seoul. These arrangements include provisions of a presidential decree, a standard set of bylaws adapted by nearly all apartment communities, units of the metropolitan government of Seoul, and related institutions organized at district and sub-district levels.

A. Apartments in Seoul

1. General Description of the Organization of Seoul

Seoul is located on the downstream of the Han River that runs across the central part of the Korean peninsula. The city extends over 605.4 km² and has a population of about 10,577,000, over one fourth of the whole population of South Korea (in 1989). Seoul has been the capital of Korea since 1392.

The Metropolitan City of Seoul is composed of 22 districts. In each of them is located an executive office of the metropolitan government. Each district, called a "gu," is composed of 15 to 35 subdistricts, called a "dong." A *dong* is the smallest formal administrative unit, in which an administrative office of the metropolitan government is located. Across the whole city of Seoul, there are 494 *dong*.

The metropolitan government of Seoul was made subject to the direct control of the prime minister under a special legislative measure enacted in 1962, whereas other cities are under the control of the minister of Domestic Affairs. Although the metropolitan government is not a unit of the national government, the mayor is appointed by the

president of Korea on the recommendation of the prime minister. The mayor of Seoul is treated at the ministerial level. Chief executives of *gu* and *dong* governments are appointed by the mayor of Seoul. The representative assemblies of the Metropolitan City of Seoul and *gu* were abolished in 1960, and only recently reinstated, in 1991. Assembly members of Seoul and *gu* are elected directly by citizens.

Each *dong* office deals with about 20,000 citizens on average, so that it alone cannot directly contact every citizen in its jurisdiction. *Tong* is established in this context in order that citizens can contact government offices through their *tong* heads (discussed later in this chapter), and *vice versa*. A *tong* is a subdivision of a *dong*, but there is neither a formal administrative office nor a regular public official at the level of *tong*. A *ban* is a subunit of a *tong*. Like the *tong*, it has no formal government office.

The sizes of *tong* and *ban* are not uniform across Seoul, but vary with the characteristics of the jurisdiction, such as population density and physical boundaries. Within apartment communities, in general, one to four apartment buildings compose one *tong*, and a *ban* is constituted by households on the same floor or along the same building entrance (see Figure 3.1).

2. Statistics on Apartments in Seoul

Seoul had a total of 1,506,000 housing units in 1989. Among them, 823,000 (54.6 %) were detached houses, while 683,000 (45.4 %) were common housing units (i.e., multi-unit housing) including apartments. Among common housing units, 478,000 (31.7 % of total housing units) units were apartments (Seoul Metropolitan Government, 1990).

Seoul is geographically divided by the Han River into sections "north of the River" and "south of the River" (see Figure 3.2). The size of the north side is 298.2 km², while the south is 307.2 km²; the population of the north is 5,477,000, and the south is 5,100,000.

Figure 3.1.

The organizational structure of the metropolitan administration in Seoul

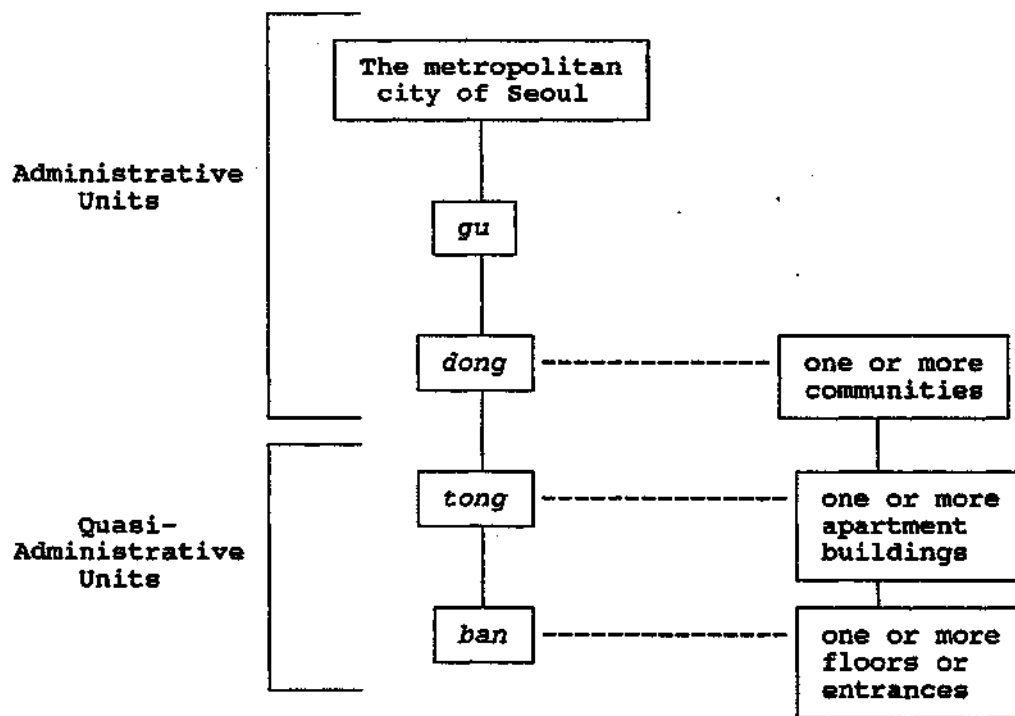
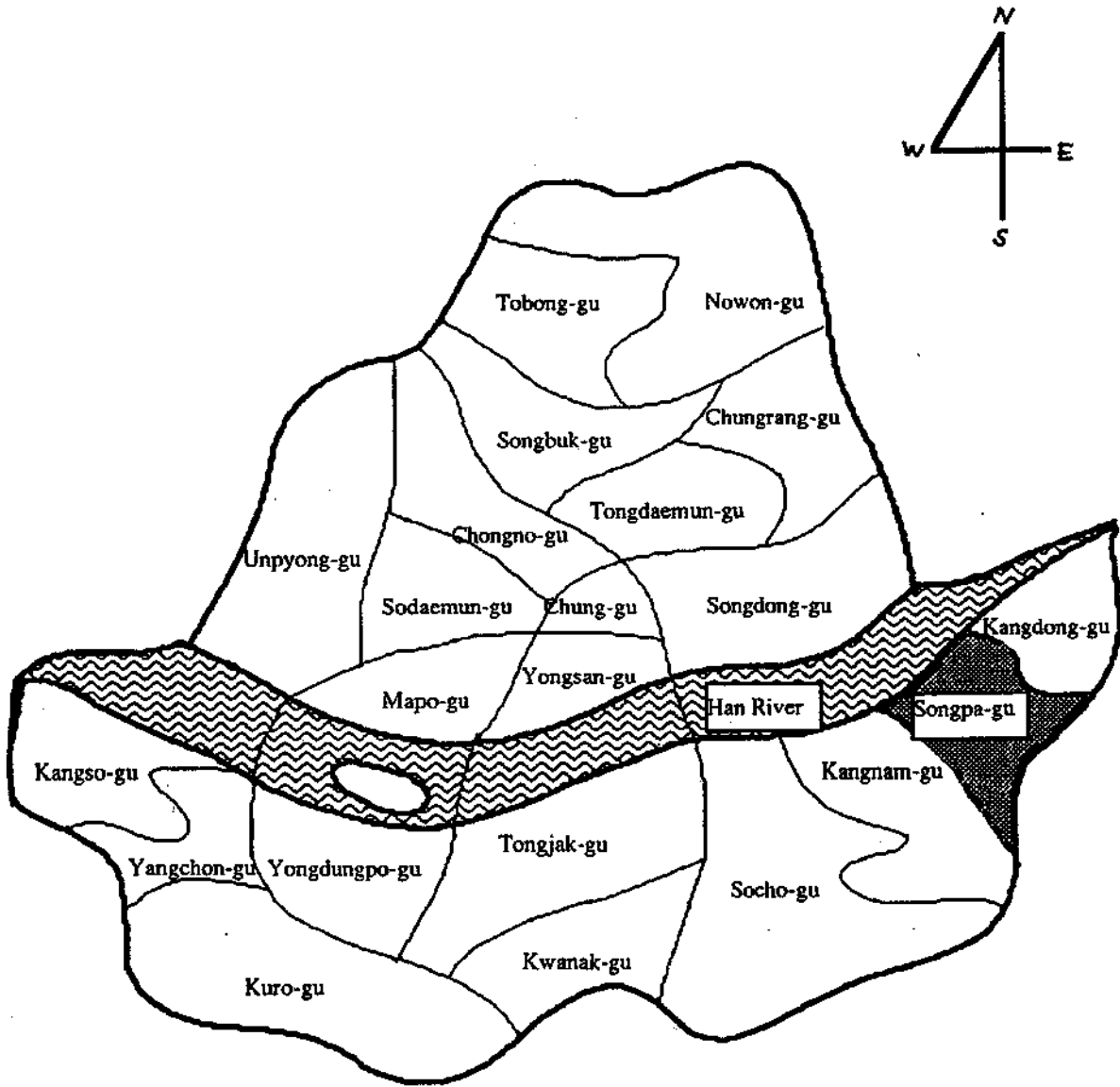


Figure 3. 2. Administrative Districts of Seoul



Apartments are not evenly located all over Seoul, but are disproportionately dense on the southeast side. Four districts on the southeast side—*Songpa-gv.*, *Kangnam-gu*, *Socho-gu*, and *Kangdong-gu*—have 43.03 percent of all apartments in Seoul.

There are three types of developers of apartment communities—the metropolitan government, the Korea Housing Corporation (KHC), and private developers. The proportion of apartments developed by each is 21.18 %, 26.91 %, and 51.96 %, respectively. The first apartment "community" in Seoul (and Korea) was *Mapo Apartment Community*, developed in 1962 by the KHC (*Hyundai Jutae*, 1990). Since 1962, 1,466 apartment units were built in the 1960's, 169,035 apartment units in the 1970's, and 265,185 apartment units in the 1980's (for annual detailed data, see Table 3.1).

Apartments in Seoul are classified for statistical purposes in several ways. One way is by type of heating system: centrally heated or individually heated. Three out of four apartments in Seoul are centrally heated. Apartments are also classified by unit size, but not by number of bedrooms. The unit size is measured by the *pyong* (1 *pyong* = 35.583 ft²). The distribution of apartments in Seoul by unit size is introduced in Table 3.2. They also are classified according to ownership. About 95 percent of the apartments in Seoul are privately owned, while the remaining 5 percent are owned either by the metropolitan government or by the KHC.

3. Development of Apartment Communities

The development of apartment communities must be approved by the mayor before development begins. Developers must submit information on grounds, site plans, and the architectural designs of apartment buildings and common facilities. Once the development has been approved, developers must present apartment sales plans to the mayor. The plans must include the documents of community boundaries and specify

Table 3.1. Annual data on the development of apartments in Seoul

Year	Number of Apartments
1962 - 1965	1,466
1966 - 1970	22,315
1971	5,765
1972	2,117
1973	7,057
1974	13,595
1975	29,403
1976	10,222
1977	16,961
1978	32,003
1979	29,597
1980	15,501
1981	16,342
1982	22,376
1983	29,385
1984	23,026
1985	13,547
1986	23,957
1987	28,132
1988	70,649
1989	22,268
Total	435,686

(Source: The Ministry of Construction)

Table 3.2. Distribution of apartments in Seoul by unit size

Unit size (in pyong *)	Number of Apartments	Ratio (%)
smaller than 13	27,538	6.3
13 - 14.9	44,722	10.3
15 - 17.9	46,201	10.6
18 - 19.9	31,817	7.3
20 - 24.9	74,524	17.1
25 - 29.9	61,874	14.2
30 - 34.9	66,672	15.3
35 - 39.9	30,192	6.9
40 - 44.9	13,769	3.2
45 - 49.9	18,415	4.2
50 - 59.9	15,633	3.6
larger than 60	4,612	1.0
Total	435,969	100.0

(Source: The Ministry of Construction)

* 1 pyong = 35.583 ft²

the amount and types of apartment units for sale.

Once the development and sale of apartments have been approved, developers declare an intent to develop a specific parcel of land as an apartment community by filing appropriate documents with a local court.¹ After declaration, they must put advertisements in newspapers and build model apartments for people to see what types of apartments will be developed. The apartment prices are announced by developers. The process for selecting qualified purchasers is administered by the Korea Housing Bank under the supervision of the Ministry of Construction. In this process, developers are prohibited by law from arbitrarily designating particular individuals as purchasers.² Those who want to buy apartments under development must file some documents with the Korea Housing Bank by a designated date, which is usually two or three months after development begins. If the number of applicants for apartment purchase exceeds the number of apartments supplied, purchasers are selected by lot. The whole amount of the apartment purchase price except a small portion financed by a bank loan, (usually less than 10 percent of the apartment price) must be paid by purchasers by the expected date of occupancy. The entire period from purchasing grounds for the construction of apartments to occupancy normally takes 3 to 4 years.

B. The Organization of Apartment Communities

Seoul's apartment communities are related to a complex system of rules. The Presidential Decree on Common Housing Management (PDCHM) provides constitutional-choice rules for apartment communities in the sense that it enables developers and apartment owners to create communities (E. Ostrom, 1990). Within the limits established by the PDCHM, the declaration by developers together with community bylaws

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perform the function of a community constitution. By making collective choices within the limits and opportunities allowed by the bylaws, specific operational rules are formulated in each apartment community. The whole rule system pertaining to apartment communities is related to various legal acts (see Figure 3.3).

1. Presidential Decree on Common Housing Management (PDCHM)

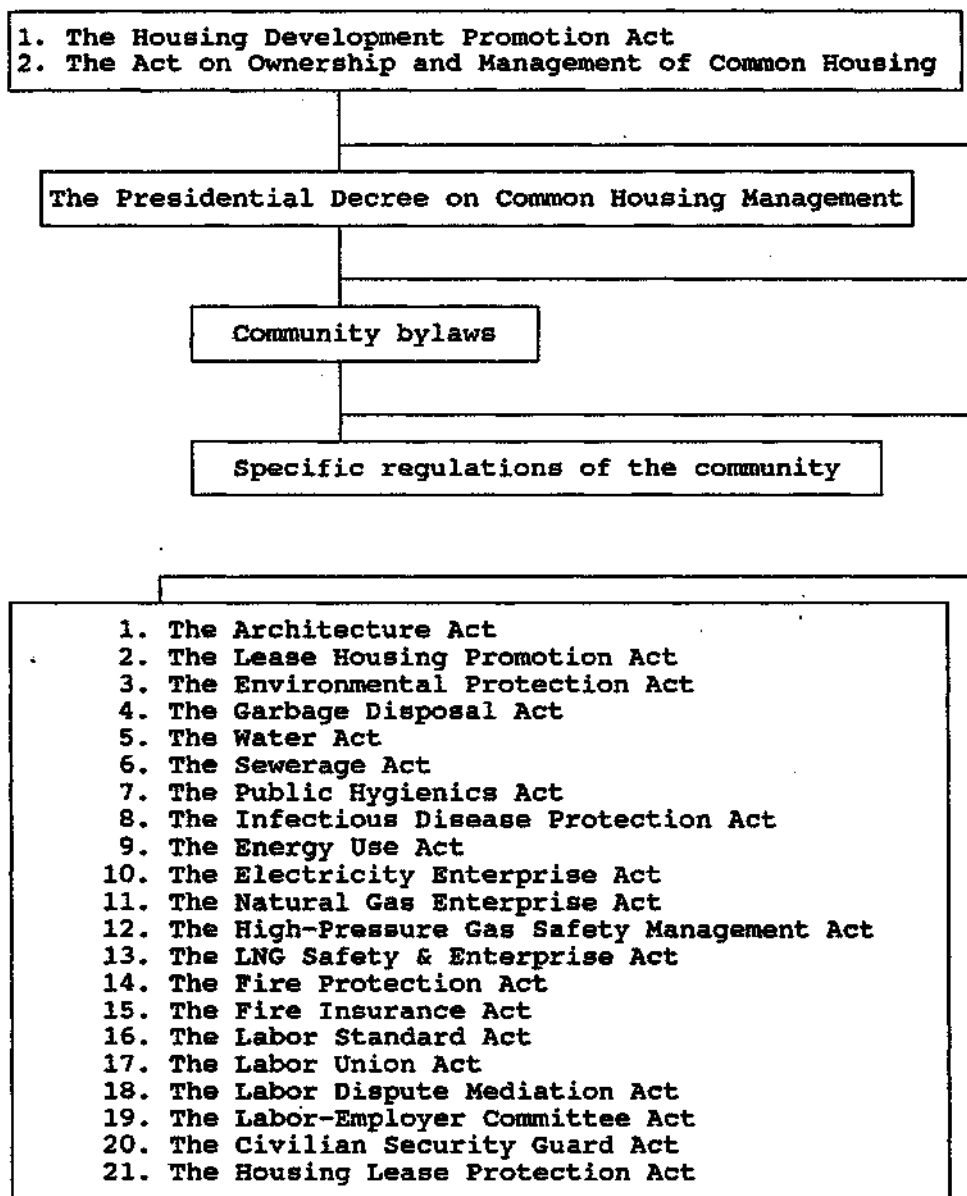
The PDCHM was issued in 1979, and amended in 1981, 1983, and 1989. It was based on the Housing Development Promotion Act (HDP) and the Act on Ownership and Management of Common Housing (AOMCH). In particular, HDP, Article 38-1 of HDP authorizes the promulgation of the PDCHM.³ Excerpts from the PDCHM are in Appendix 3.1.

The decree applies to three types of common housing: (1) common housing of 300 or more units, (2) elevator-installed common housing, and (3) centrally heated common housing. The PDCHM is a mandatory rule that requires the owners, of common housing to establish an RCA.

The PDCHM provides a basic framework for the governance of apartment communities by specifying the subjects to be addressed in bylaws and by prescribing rules pertaining to membership, voting, the constitution of governing and managing bodies, financial processes, and mandatory fees. In so doing, the decree determines certain institutional arrangements, but it leaves other institutional arrangements to be specified by the community.

The decree prescribes that the organizational structure of the community shall be composed of an elected representative assembly, a board of directors, and a management office. It specifically provides for the election of assembly members, and it specifies the Qualifications for election to the assembly, as well as the authority and responsibility of the assembly. The decree requires the assembly to organize a board of directors and to constitute a management office by choosing between two alternative arrangements for management--self-

Figure 3.3. The legal system related to apartment communities



(Refer to Korea Research Institute for Human Settlements, Working Paper 87-13: 24; Kim, 1990: 6)

organized management and professional management. It also enumerates the authority and responsibilities of the management office.

The decree prescribes personnel and equipment standards for management offices. It also prescribes procedures for licensing professional housing management agencies and standards for the personnel and equipment of the agencies. The responsibilities of developers in the management of the community are also enumerated by the decree.

The PDCHM defines each apartment unit as a private domain and the rest of the space that may exist within the boundaries of the community as a common domain. It also defines the owners of apartment units as community members. Because the RCA is not based on individual residents, but on individual apartment units, membership is restricted to one legal owner from each apartment unit. The decree requires that the bylaws prescribe the rights and duties of owners as members, but does not specify those rights and duties except in a few cases. Voting rights in the community are given only to owners. The voting rules for some types of decisions by owners and by the representative assembly are also prescribed in the decree.

The decree enumerates the purposes for which mandatory fees can be used, and prohibits communities from levying fees other than those enumerated. An annual audit by a certified public accountant (CPA) on the collection and use of mandatory fees is mandated by the PDCHM.

The PDCHM requires that general managers of management offices be certified housing managers (CHMs), and recommends that other manager positions should also be occupied by CHMs. The qualifications and examinations for CHMs are specified by the decree. The CHM system was introduced by a 1989 amendment, and the examinations for CHMs were first administered in 1991. In fact, the rules on the mandatory employment of CHMs have not yet been applied to existing general managers.

The PDCHM prescribes certain aspects of the relationship between apartment communities and government. Certain community actions require

approval by the mayor of Seoul: establishment of the community and its assembly; the personnel and equipment of a self-organized management office (at the time of its organization); transition from self-organized management to professional management; and changes in the use of common facilities, such as the transformation of playgrounds into parking lots. If community proposals satisfy the standards that are prescribed by the decree, the mayor must approve them. The requirement for mayoral approval can be understood as governmental oversight to ensure that developers and communities abide by the relevant law. The mayoral authority is routinely delegated to the executive offices of the metropolitan government of Seoul, i.e., gu offices.

Originally issued in 1979, the decree was amended in 1981. In the original decree, the establishment of the assembly was not mandatory. Those apartment communities without assemblies continued to be 'managed' by the management offices constituted by developers. The 1981 amendment required the establishment of the assembly and the separate creation of a management office. In 1983, the decree was again amended to introduce special maintenance funds (discussed more fully in Chapter VI) and to require the adoption of bylaws. This requirement was intended to protect ordinary members against the probability of dominance by a few community leaders. It is likely that many apartment communities without bylaws were organized on an *ad hoc* basis before the 1983 amendment. The form of the organization could change depending on who held office. According to the investigation by the metropolitan government of Seoul in 1982, all of the 223 apartment communities selected by random sampling were found to be quite transitory in the organizations of their assemblies and management offices.⁴ Book-keeping and accounting requirements were tightened and opened to residents. The required audit by CPAs was introduced. Management by developers during the first year after development also became compulsory. The decree was again amended in 1989 to introduce the CHM system.

The PDCHM and its amendments were drafted by the Ministry of Construction. The ministry, however, is seldom involved in monitoring how the decree is implemented, except for licensing housing management agencies and supervising them. The authority to enforce the decree is assigned to the metropolitan government headed by the mayor. But, neither are the mayor nor other offices of the metropolitan government directly involved in enforcement activities. Instead, the authority is usually delegated to gu offices.

Disputes in the interpretation of the decree can be judicially settled by courts. In general, however, the metropolitan government, as well as the Ministry of Construction, involves itself in interpreting the decree prior to recourse to courts. Requests for authoritative interpretation of the decree go to these central agencies, not to gu offices.

2. Bylaws

a. General contents

Apartment communities in Seoul are managed by developers until the representative assembly is established. During this transitional period, the bylaws prepared by developers apply to these apartment communities. Once the representative assembly has been constituted by owners, it must establish the bylaws first of all.

In general, the bylaws of apartment communities are all very similar. They borrow the basic structure of the bylaws from neighboring communities or adapt the Standard Bylaws prepared by the KHC in 1984 (see Appendix 3.2). Copying existing bylaws from similar communities may save time and effort and be less risky than negotiating and creating a totally new document (see, E. Ostrom, 1986). It can be assumed, in most instances, that the bylaws of apartment communities do not differ substantially from the Standard Bylaws.

The bylaws, first of all, describe the declaration by developers

during the development process—defining the membership and jurisdictional boundaries of the community. The bylaws then specify what is private space and common space within the community.

The decree requires that the bylaws prescribe the status, right, and responsibility of owners. With respect to the assembly, while the decree prescribes the qualifications for assembly members and the authority and responsibility of the assembly, the bylaws specify the types of assembly meetings and quorum. With respect to the board of directors, while the decree prescribes the selection of a chairperson, at least one treasurer, and at least three directors, the bylaws specify their authority and responsibilities. With respect to the management office, while the decree prescribes its authority and responsibility and specifies standards for the personnel and equipment, the bylaws specify the organizational structure of the management office and, sometimes, the maximum number of employees.

Fiscal rules are also included. The bylaws specify the period of the fiscal year. Book-keeping, budgetary process, and annual audit are mandated by the decree and specified by the bylaws in greater detail. With respect to mandatory fees, while the decree specifies the contents and calculation method, the bylaws specify procedures for collecting fees and keeping bank accounts. Charges on late payment or nonpayment and on private use of common facilities are also prescribed by the bylaws.

Most bylaws assign legal liability for management activities to the general manager in self-organized management system and to the professional housing management agency in professional management system. The bylaws also enable the representative assembly, by the approval of a simple majority of its members, to make operational rules required to enforce the bylaws.

b. Decision-making procedures and voting rules

Many collective decisions in apartment communities are made either by the assembly or by the management office, without voting by owners. But, certain major community decisions must be made jointly by the community of owners and the assembly, or only by the community.

The decree prescribes that approval by a simple majority of owners must precede an assembly decision by a two-thirds majority to choose the initial management type or terminate the existing management system. The voting rules applied to other community-wide decisions are specified by the bylaws. The bylaws prescribe that approval by a simple majority of owners must be followed by approval by a two-thirds majority of assembly members to establish or amend the bylaws. The bylaws also prescribe that assembly members be elected by a simple majority vote of owners.

Most community bylaws, as well as the Standard Bylaws, state that a rule of unanimity applies when the community makes a decision to sell common property or to alter or construct common facilities. These community decisions can be made only by a unanimous vote of all legal owners. The assembly is not authorized to act on these matters.

3. Membership

Residents in the community include three different types: owners, tenants, and their family members and roommates. Owners have legal title to their apartments, formalized by filing ownership documents with a local court. As stated earlier, only owners of apartment units can be understood as members. One membership is assigned to one apartment unit, and is mandatory for all owners.

Owners, whether they are resident-owners or absentee-owners, have the authority and responsibility to (1) use private space; (2) use common space as prescribed by the bylaws; (3) express opinions to the representative assembly or management office; (4) vote for assembly

members; (5) serve as a member of the assembly if elected; and (6) vote on other matters as prescribed by the bylaws. Tenants have the authority and responsibility of (1), (2), and (3). The family members and roommates either of owners or of tenants also have the authority and responsibility of (1), (2), and (3). In other words, residents other than owners have all rights except the right to vote.

One vote is given to one apartment unit, because one membership is assigned to one unit. Proxy voting is permitted; tenants can vote for their absentee-owners with the permission of the owners. Agreement to abide by the bylaws is presumed on the basis of the purchase of and/or residence in apartments within the community.

4. The Representative Assembly

The establishment of an apartment community begins with the organization of a representative assembly and the assembly's enactment of the bylaws. The assembly is the legislative, policy-making body of the community. In new apartment communities, once a simple majority of apartment units have been occupied, the assembly must be created by the community of owners.

However, there may be difficulty in constituting the initial assembly within the first year for two reasons. First, residents of new apartment communities may not be well prepared to organize themselves, and some of them may be unfamiliar with the assembly, as a governing body, unless they have lived in other residential communities organized by an RCA (see ACIR, 1989). Second, developers are responsible for repairing or compensating for architectural defects that are found during the first year after development. Once the assembly has been organized, the management office is under the control of the assembly, not the developer. Therefore, developers may be reluctant to make arrangements for apartment owners to constitute the assembly because the community would be better situated to search for architectural defects

and obtain redress during the first year.

If owners fail to organize the representative assembly before the compulsory period of management by developers ends, apartment communities follow one of two courses of action. Those communities developed by the KHC continue to be managed by the KHC. Those developed either by private developers or by the metropolitan government tend to be managed by professional housing management agencies designated by the developer, until the assembly is organized. Once the assembly has been organized, developers must transfer management authority to the assembly.

a. Election

The bylaws prescribe methods of electing and discharging assembly members and filling vacancies. In general, one assembly member is elected from one apartment building. Two or more assembly members, however, may be assigned to large apartment buildings in proportion to population. Or, one assembly member may be elected from two or more apartment buildings. Those owners resident for more than 6 months by the election date are eligible for election to the representative assembly. No restriction on length of residence is applied to the initial assembly. Some communities customarily allow residents other than owners of apartments to serve in the assembly. Some prohibit any resident from simultaneously holding the two offices of assembly member and tong head (discussed later) or other positions. In some communities, those owner-residents who have their business within the community are not eligible for election to the assembly.

The election of assembly members is administered by an election administration committee. The committee is directed by the chairperson of the assembly. It is discharged immediately after the election. Candidates register with the committee, and file an application, a residence document, and an apartment ownership registration document.

Although only owners are allowed to vote, voters usually are not actually required to present their ownership registration documents, because it makes the election process too complicated. In communities where apartment buildings have security booths, each security booth is designated as a polling place. In some communities without security booths, tong or ban heads visit each apartment unit to collect ballots. The results of the election are posted in each building entrance and published in monthly newsletters.

In fact, most candidates tend to run unopposed. As a result, most elections in apartment communities are a vote of approval or disapproval rather than a contest among candidates. In the apartment buildings where no owner declares his candidacy, the tong head and ban heads choose a candidate.

b. Authority and responsibilities

The assembly, as the governing body of the community, has the authority and responsibility under the PDCHM to decide on the following by the approval of a two-thirds majority of the members:

- (1) choosing the initial management system of the community (following the approval by a simple majority of the community members).
- (2) terminating the existing management system of the community (following the approval by a simple majority of the community members).
- (3) selecting a professional housing management agency if professional management is chosen.

The assembly also has the authority and responsibility under the PDCHM to decide the following by the approval of a simple majority of the members:

- (1) establishment and amendment of the bylaws (following the approval by a simple majority of the community members).
- (2) levying monthly mandatory fees.

- (3) financial processes of keeping bank accounts^
- (4) establishment of the standard operational rules for the maintenance of common grounds and common facilities.
- (5) designating, hiring, and dismissing management employees if self-organized management is chosen.
- (6) making arrangements for the repair of common facilities.
- (7) coordination of conflicts among residents.
- (8) establishment of the penalties for violators of the bylaws or public order.

The assembly cannot be dissolved—not by government, the KHC, or professional housing management agencies—except by owners.

c. Meeting of assembly

The assembly must notify residents of the agenda, date and place of assembly meetings five days in advance. To encourage participation of assembly members who have their own full-time jobs, meetings are usually held at night. Large communities generally have separate meeting rooms, while in many small communities the assembly meets in the management office.

The bylaws specify two types of assembly meetings—regular meetings and extraordinary meetings. Regular meetings of the assembly are convened quarterly, and extraordinary meetings are convened upon the request of either the chairperson, or the treasurer, or at least three directors, or at least one fourth of all owners. The chairperson must publicize the agenda, date, and place of the meeting in advance. The chairperson may control access by others than assembly members to the meeting. Meeting records must be kept open to residents. Specific prerequisites for calling extraordinary sessions are prescribed by the bylaws.

If the bylaws prescribe nothing about a quorum, a simple majority of all members, in person or by proxy, constitutes a quorum. This rule

is followed quite strictly in most communities, because it protects the assembly from domination by one or a few members of the board of directors, and assures that all decisions represent a simple majority of assembly members.

5. The Board of Directors

Once assembly members have been elected, the assembly meets to elect directing members from among the members of the assembly. Unless otherwise stated in the bylaws, the election of a chairperson requires the approval of a simple majority of assembly members. One chairperson, at least one treasurer, and at least three directors are required by the PDCHM. The bylaws specify the number of treasurers and directors. Some large communities add the position of vice chairperson.

The bylaws specify terms of offices and prescribe their conditions of renewal. The terms of the assembly and the board of directors are generally 1 or 2 years. The loss of community membership automatically results in the loss of the position.

The chairperson of the assembly, who represents both the community and its assembly, presides at all meetings of the assembly and the board of directors, and serves as the principal liaison to the management office. The chairperson is a co-signer of the community bank account together with the general manager of the management office. All withdrawals require both signatures. The chairperson also signs all contracts on behalf of the community.

The treasurer is responsible for overseeing the financial affairs of the management office, ensuring that all transactions, unit owner rosters with assigned mandatory fees, collections, and actions on collecting delinquent accounts are properly completed. The treasurer also serves as an auditor in supervising the monthly and annual accounting of the management office.

The responsibilities of directors are specified by the bylaws.

Directors divide the responsibilities for assisting the chairperson among general affairs, accounting, and engineering. These responsibilities may be more specific in some communities.

The influence of the board of directors is inversely correlated with community size. Large communities tend to have a large number of assembly members. Large assemblies tend to have difficulty in holding frequent assembly meetings, due to the problems of obtaining a quorum or finding a sufficiently large meeting place. As a result, large communities tend to rely more upon board meetings than upon the general meeting of all assembly members.

6. Management Office

One of the assembly's most important responsibilities is to establish the management office. The management office tends to be staffed by full-time and/or part-time employees, not by resident-volunteers.

a. Authority and responsibilities

The authority and responsibilities of the management office are as follows:

- (1) Collecting and using monthly mandatory fees: The management office may give warnings to defaulters of mandatory fees, or publicize their unit numbers, or charge late payment fees, or request local courts to attach their property.
- (2) Maintaining common grounds and common facilities: To fulfill this duty, the management office is authorized to collect monthly mandatory fees, make maintenance plans, monitor and repair common facilities regularly, control access to common space, and regulate use.
- (3) Providing and arranging for a number of urban services, such as security, cleaning, pest and rodent control, heating, and fire

services: The arrangements for the production of these services vary with specific needs of the community and characteristics of the service. Some types of services are produced by the management office, while other services are produced by private agencies.

- (4) Making budget proposals, including extraordinary budget proposals, to the assembly.
- (5) Keeping financial documents open to residents and the assembly, and providing them to the gu office upon request.
- (6) Making long-term maintenance plans, and collecting and depositing the reserve funds, so-called "special maintenance funds."
- (7) Maintaining the safety of certain common facilities—heating, electrical, LNG (liquefied natural gas), and disposal systems: The management office must employ experts on safety management, regularly check and monitor safety levels, keep records on safety levels, control access to those facilities, and promptly repair them as soon as potential dangers are found.
- (8) Enforcing the decisions and orders of the assembly.

b. Types of management

Apartment communities choose one of two management types: self-organized or professional. Management by developers occurs only in the first year after development. The selection of a management type is one of the assembly's major decisions, requiring agreement by a two-thirds majority of its members as well as a prior approval by community members. If the assembly fails to obtain agreement of a two-thirds majority, the current management system is sustained until agreement is reached. The assembly must report the organization of its management office to the gu office. In particular, the selection of self-organized management must be approved by mayor.

(1) Self-organized management

One management option is for the assembly to organize its own management body. All management employees are then appointed or discharged by the chairperson with the approval of the assembly. A self-organized management body is under strict control of the assembly. Even detailed decisions must be signed by the chairperson prior to execution. The assembly usually involves itself in the process of management through the board of directors and committees. The personnel and equipment of the management office must satisfy standards as required by the PDCHM.

Because the decree requires that the assembly must select a management type by a two-thirds majority of assembly members, communities cannot easily switch from one management type to another, especially from self-organized type to professional type. The assembly can more easily control the self-organized management body. Because there were only a few professional housing management agencies prior to the mid-1980's, most of the earlier communities chose self-organized management, and initially established their bylaws on this premise.

(2) Professional management

The other option is for the assembly to contract with a professional housing management agency, which then organizes the management office. A general manager and department or section managers are appointed and discharged by the central agency, and other employees are appointed and discharged by the general manager. The organizational structure and size of the management office are decided in the contract.

Central agencies control their management offices through internal management rules, orders, approvals, monitors, supervision, and training. Management rules, such as budget rules and contract rules, that are made by the assembly or management office in a self-organized management system, are prepared by the central agency. The central

agency routinely and periodically gives instructions to its management offices. For example, it may require its management offices to check heating and water systems before winter and to regularly monitor the operational conditions of those systems. The central agency's personnel and equipment are available to help its management offices in emergencies, as well as to monitor performance. Training of management employees is one of the essential functions of central housing management agencies.

Professional management offices must obtain the approval of the central agency with respect to budgets, monthly mandatory fees, large-scale contracts, and replacements of employees. Approval by the central agency must precede approval by the community assembly, whereas self-organized management offices require only the assembly's approval. Records of maintenance, conditions of the commons, revenues and expenditures, and other community affairs are reported to the central agency on a daily, monthly, quarterly, or annual basis.

Professional management offices, although they are directed by their central agencies, are also under the control of assemblies. Evaluations and recommendations of the assembly with respect to managers have an effect on the central agency because the assembly has the authority to change from one agency to another.

When an assembly decides to change from self-organized management to professional management, or when the assembly initially chooses professional management, it must report its decision to the mayor of Seoul. Although the organization of professional management does not require approval by mayor, the assembly must document the approval of the simple majority of owners in writing, and supply a record of the assembly meetings on the selection of a management type, the resume of the selected professional housing management agency, and an auditor's report of the community's last-term accounts.

(3) Developer's management

Because residents of newly-developed apartment communities are not well prepared to govern themselves, the PDCHM requires that developers comprise the management body during the first year after development. Even during this mandatory period of management, the assembly can take over the authority of governance and management if it is organized. Developers are responsible for preparing the initial bylaws and helping the assembly get organized. In addition, they are charged by the PDCHM with repairing or compensating for architectural defects on minor facilities for one year and on major facilities for two years after development.

The KHC has a housing management division, which organizes management offices in new apartment communities. Neither the metropolitan government of Seoul nor any private developer has its own organization for producing management services. Therefore, they contract with professional housing management agencies.

Once an assembly is organized, it selects a management type. Those communities managed by the KHC during the first year tend to organize their own management offices, owing to the assistance of the KHC. In fact, all KHC-developed communities in Seoul have chosen self-organized management. Communities tend to renew the contracts of the professional agencies hired by the developer during its period of management. If the assembly is not organized during the first year, KHC continues to manage the RCA until it is organized, while other types of developers leave management duties to the current management agencies. After the first year, the management office assumes the responsibility for organizing the assembly, if it has not yet been organized.

c. Structure and job assignment

Management offices have various types of organizational structures that differ according to community size, management type, and the

economic status of residents. In general, the management office is composed of both a management unit and an engineering unit. A management unit, which is named "management department" in large management offices or "management section" in small management offices, is in charge of the following: (1) accounting, (2) personnel management, (3) book-keeping, (4) security service, (5) public relations with residents, (6) purchase and stock, (7) contracts, (8) insurance, (9) job training, (10) building & street cleaning, (11) access control, (12) fire prevention service, (13) pest and rodent control service, and (14) assistance to the assembly.

An engineering unit, which is often denoted as a "mechanical engineering department or section" or as an "electrical engineering department or section," is responsible for the following: (1) operation and maintenance of heating, water, sewerage, electrical, fire, communication, elevator, and cargo-lift systems, (2) maintenance of fences, streets, roofs, and exterior walls, (3) monitoring dangerous facilities, (4) safety management, (5) long-term maintenance, and (6) gardening.

The management office is supervised by a general manager. The general manager is not only charged with managing the office, but is also engaged in public relations with residents, the assembly, governmental agencies, service production agencies, and adjacent business.

7. Monthly Mandatory Fees

a. Contents

The assembly levies mandatory fees monthly on each apartment unit within its jurisdiction. However, the assembly cannot levy the mandatory fees for unlimited purposes. The PDCHM enumerates the purposes for which mandatory fees can be levied. According to this decree, monthly mandatory fees can be used to finance general

management, cleaning, pest and rodent control, elevator maintenance, heating and hot water supply, and the maintenance of common property. The assembly is not authorized by law to levy mandatory fees for any other purposes.

However, user fees can be charged for using certain common facilities like cargo-lifts or tennis courts. While mandatory fees are levied on all apartment units, use charges are applied to users only. On the other hand, fire insurance fees for both private apartment units and the whole apartment building may be collected from each apartment unit using the same procedure as for monthly mandatory fees.

b. Calculation methods

According to the PDCHM, monthly mandatory fees are levied in the same amounts as actual expenditures. In principle, the total community revenue raised through mandatory fees is equal to the total community expenditure. Monthly mandatory fees, therefore, are not determined prior to expenditures, but are assessed at the end of every month on the basis of how much the community spent for the month.

According to the decree, mandatory fees for those services that can be measured or metered for each apartment unit are based on the quantity that each unit consumes. Most services in the community, however, cannot easily be metered. Mandatory fees for these services are based on the size of each apartment unit. The calculation method is summarized in Table 3.3.

Residents of large apartment units do not always benefit more from the services provided by the community than those of small apartment units. Thus, mandatory fees that are levied on the basis of unit size can be regarded as having some of the characteristics of a property tax, as well as to some extent a charge for amounts consumed.

The calculation methods are specified as follows:

- (1) Mandatory fees based on unit size: The total expenditures are shared

Table 3.3. Calculation method for the monthly mandatory fee

$\text{total cost} / \text{the total area (pyong) of all apartment units}$ $= \text{the cost per pyong}$
$\text{the cost per pyong} * \text{the size (pyong) of the apartment unit}$ $= \text{the fee levied on the apartment unit}$

by all apartment units of the community, based on unit size.

Examples: general management, cleaning, pest and rodent control, maintenance, and heating services.

Exceptions: The expenditures for security guards are calculated on the building basis, not the community basis if the number of apartment units per security guard differs between apartment buildings. The apartment units of the apartment buildings without elevators are exempt from mandatory fees for elevator maintenance, and apartment units on first or second floors may also be exempt.

- (2) Mandatory fees based on quantity consumed: Charges on hot water supply are calculated, based on quantity consumed. If a meter is installed in each apartment unit, mandatory fees for heating also may be levied, based on quantity consumed.

c. Management

Monthly mandatory fees are levied according to the procedure depicted in Figure 3.4. The management office calculates shares of mandatory fees assigned to each apartment unit. The calculation of mandatory fees must be audited by the treasurers and confirmed by the assembly. But, the calculation must be examined by the central housing management agency prior to the audit by the assembly in the case of professional management. Bills are sent to each apartment unit by the management office. Residents must make payment by the due date to nearby banks designated by the management office. Payments are automatically deposited in the community account, and the banks send receipts to the management office. There are charges for late payments. The rates of these charges are shown in Table 3.4.

If a household fails to pay monthly mandatory fees over a long period, usually over six months, in spite of repeated notices by the management office, the community may apply to local courts for compulsory sale of the apartment by auction. This rule is supplied in

Figure 3.4. The procedure for levying monthly mandatory fees

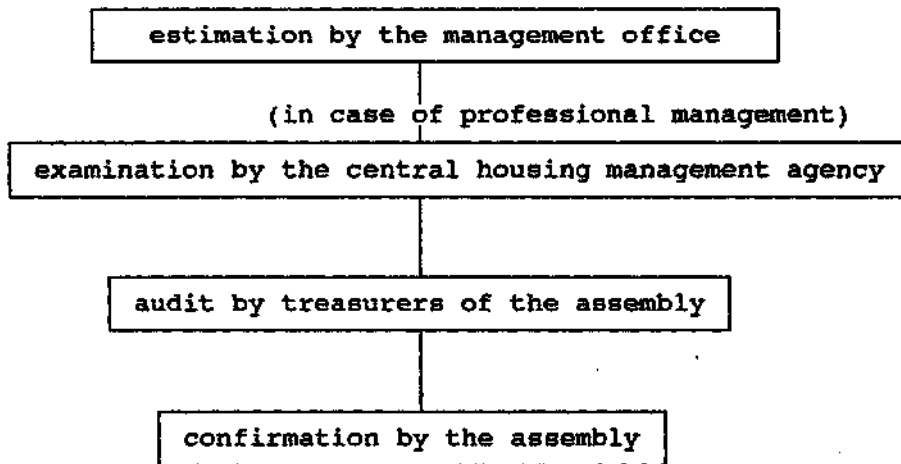


Table 3.4. The rates of late payment charges that apply to monthly mandatory fees

Number of unpaid months	Rates of late payment charges (%)
1	5.0
2	5.0
3	5.0
4	6.6
5	8.2
6	9.8
7	11.4
8	13.0
9	14.6
10	16.2
11	17.8
12	19.4

the Act on Ownership and Management of Common Housing, which underlies behind the PDCHM, together with the Housing Development Promotion Act (Park and Seo, 1989; Park and Kim, 1991). A single apartment owner can represent the community as the plaintiff; the defendant is prohibited from participating in the auction.

C. The Institutional Context of Apartment Communities

1. *Tong* & *Ban* Heads

a. The organization of *tong* & *ban*

Tong and *ban* heads are quasi-public officials. Although the law on the employment of public officials does not apply to *tong* and *ban* heads, they are actually under the control of *dong* offices. They do not receive salaries, but are exempt from some mandatory public fees, such as fees for garbage collection, red cross membership, and public TV, in addition to admission fees to the city-sponsored art events.

Tong and *ban* heads usually are not elected-by residents, but appointed by *dong* offices. In particular, it is usual for *dong* offices to nominate *tong* heads in new *dong*. Some of them are self-nominated. In general, it is very rare for *tong* heads to be elected by the direct vote of residents (Choi, 1985).

Ban heads are also appointed by *dong* offices, based on recommendations of *tong* heads. Because there are more than 200 *ban* per *dong* on average, *dong* offices do not directly nominate *ban* heads. *Ban* heads are generally proposed to *tong* heads or *dong* offices by a number of residents. Some of them are self-nominated, or sometimes nominated by rotation among *ban* residents (Choi, 1985). Unlike *tong* heads, *ban* heads are often nominated directly by residents in *ban* meetings.

b. Authority and responsibilities

Tong and *ban* heads are appointed in order that the government can better deliver services, keep good public relations, and monitor public opinion (Choi, 1985). They function as neither independent governmental offices nor as service provision or production units, but only as liaisons between *dong* offices and citizens.

Tong heads are generally engaged in the following activities:

- (1) registration of residence.
- (2) reporting residents' opinions to *dong* offices.
- (3) leadership in the *Saemaul Undong*? (New Village Movement) at the *tong* level.
- (4) fostering good public relations between government and citizens.
- (5) leadership of the civil defense system at the *tong* level.
- (6) organizing the communication system for emergencies at the *tong* level.

Ban heads, as assistants to *tong* heads, have similar responsibilities. The basic difference is that *ban* heads are charged with holding a *ban* meeting. Every *ban* in Korea is strongly encouraged by the national government to hold a meeting, called "*Ban sang hwe*," once a month. The date for *Ban sang hwe* is established by the Ministry of Home Affairs. *Ban* heads must hold this monthly *ban* meeting as scheduled. The practice of *Ban sang hwe* began in June, 1976. Its purpose was initially to foster better public relations with the government, but it currently functions as a means for governments to monitor public opinion.

c. Relationship to apartment communities

Tong and *ban* heads constitute a part of the institutional infrastructure for the governance of apartment communities. While the assembly is generally constituted by representatives of each apartment building, *tong* and *ban* heads represent each *tong* and *ban*. Because each

apartment building includes a number of *ban*, residents have redundant representation, in addition to their elected representatives in the assembly (see Figure 3.1).

Tong and *ban* heads function as a bridge between residents and apartment community management offices, as well as *dong* offices. Although assembly members also communicate directly with residents, the communication may be sporadic. By contrast, *tong* and *ban* heads regularly meet with residents in *Ban sang hwes*. Opinions of residents expressed in *Ban sang hwes* are recorded by *ban* heads and reported to *dong* offices by way of *tong* heads. *Dong* offices report selected opinions to *gu* offices. Residents of apartment communities generally utilize *Ban sang hwe* as monthly meetings of residents to discuss their community affairs. Comments on community services, complaints about apartment management, and evaluations of community employees need not be reported to the *gu* office, but directly to the management office by *tong* heads. In this context, *Ban sang hwe* is a basic institutional element of apartment communities, and *tong* and *ban* heads are an important part of the infrastructure of community governance.

Another important function acquired by *tong* and *ban* heads is the nomination of assembly members. According to the PDCHM and the bylaws of each community, assembly members are to be nominated and elected by residents themselves. However, many communities elect their assembly members on the basis of the candidate nominations by *tong* and *ban* heads, because it is a long and complicated process to get residents directly involved in the nominating process. Usually, the chairperson of the assembly requests *tong* and *ban* heads to nominate one candidate per election precinct (usually one-half or one apartment building). In this case, a single candidate is approved or disapproved by secret ballot. In some communities, *tong* and *ban* heads visit each apartment unit to get the signatures required for approval of the candidate. *Tong* and *ban* heads thus can exercise considerable influence over the apartment

community through the election process. *Dong* offices also can influence the community by way of *tong* and *ban* heads.

2. Women's Associations

a. Organization

Women's associations, like *tong* and *ban* heads, are organized by *dong* offices. They were initially established as one of the organizations for *Saemaul Undong* by the name of "Saemaul women's association" by the national government in 1970. It is no longer common to attach the prefix "Saemaul" to the names of women's associations.

Membership in women's association is not compulsory. Actually, women's associations are composed only of married women. They are variously called "women's association," or "mothers association," or "married women's association." There is a national organization of women's association. Although women's associations can be organized at any level, the basic formal organizational unit for the women's association is *the dong*. Dong-level women's associations are identified by the *dong* name. Apartment communities usually have their own women's associations at the community level, identified by the community name. The women's associations organized in apartment communities tend to be independent of *dong* offices.

b. Functions

Women's associations are basically voluntary charity organizations. They do not provide or produce urban services like RCAs, nor are their activities confined to their neighbors, but are extended to anonymous people in other areas. Women's associations generally do the following:

- (1) Joint purchasing: Women's associations engage in direct transactions with businesses, farmers, and fishermen for less expensive joint purchases in behalf of their members and neighbors.

- (2) Education for women: Women's associations provide for the education of neighborhood women, in subjects such as cooking, knitting, etiquette, cultural subjects, and so on.
- (3) Recycling: Women's associations recycle cans and newspapers as a means of financing their organizations and helping people in need, as well as for environmental protection.
- (4) Charity: They make donations of money, food, and clothing to orphanages, homeless senior centers, policemen, cleaning workers, garbage collection workers, poor neighbors, and victims of calamity.
- (5) Traffic control around schools and kindergartens.
- (6) Monitoring of service performance, especially garbage collection, water, sewerage, and traffic safety.
- (7) Cleaning or maintaining of playgrounds and gardens, such as removal of broken glass and caring for flowers.

Women's associations are not authorized to levy mandatory fees on residents for their services. They seldom levy membership fees, but receive donations from members. The major financial sources for women's associations are the gains from various projects, such as joint purchases, recycling, and sale. They sometimes receive informal donations from neighboring businesses.

c. Relationship to RCAs

The activities mentioned above are performed by the women's associations of apartment communities as well as by dong-level associations. Women's associations in apartment communities function, first of all, as a pressure group in relation to the assembly and management office. Although they have no formal role in community affairs, they exercise considerable influence with community officials. For example, opening a new business within an apartment community must be approved by the assembly. In this process the assembly usually refers the issue to the women's association for its recommendation.

Negative response from women's associations can frequently defeat the proposal. In addition, women's associations are involved in decisions such as the selection of a housing management agency and major types of maintenance, such as exterior repainting (discussed in Chapter V).

Tong and *ban* heads are usually housewives, because they need to stay in the neighborhood and contact *dong* public officials during the day. In addition, *tong* and *ban* heads usually join women's associations. Women's associations, when acting together with *tong* and *ban* heads, have even greater leverage with the assembly and management office. In particular, most of the people in attendance at *Ban sang hwe* are also women; therefore, both female *tong* and *ban* heads and women's association members represent the views of residents to the assembly or management office.⁶

Assembly members, by contrast, are usually male. Only the legal owner of an apartment unit may be elected to the assembly, and most legal property owners in Korea are male. As a result, there is a tendency for conflict between women's associations and representative assemblies, primarily due to their difference in composition.

D. Conclusion

The constitution of apartment communities is based primarily on the PDCHM and the specific bylaws that are established by each apartment community within the limits of the decree. The PDCHM prescribes that a representative assembly, a board of directors, and a management office shall be established by the community. With respect to membership, only owners of apartment units can be understood as community members. Only owners have voting rights, and only they are authorized to constitute an assembly.

The decree specifies the subjects to be addressed in bylaws and

prescribes rules pertaining to membership, voting, the constitution of governing and managing bodies, financial processes, and mandatory fees. In so doing, the decree determines certain institutional arrangements, but it leaves others open to the community.

Apartment communities overlay the governmental boundaries of Seoul. One or more apartment communities correspond to a *dong*; one or more apartment buildings, to a *tong*; and one or more floors or entrances, to a *ban** *Tong* and *ban* heads and women's associations also function as organizational infrastructure in the governance of apartment communities in various ways. *Gu* offices exercise the mayoral authority to approve the organization of communities, assemblies, and management offices, and other community affairs. *Dong* offices, although they do not have a formal role in the organization of apartment communities, can exercise influence over the community through *tong* and *ban* heads and, sometimes, through women's associations.

Government plays an important role in the organization of apartment communities by providing a general institutional framework through the PDCHM, monitoring how it functions, and enforcing its provisions. In addition, certain institutions related to government, such as *tong* and *ban* heads and women's associations, are involved in the governance of apartment communities. Nevertheless, the apartment community itself makes a number of basic decisions: the establishment and amendment of the bylaws, the organization of an elected assembly and its board of directors, the choice of management type, the amount of revenue to be raised by mandatory fees and user fees, and the maintenance of common property.. In this sense, the responsibility for caring for common property of the community and providing related services is carried out by apartment communities themselves.

Notes

1. The use of land, e.g. farming, residence, commerce, industry, or conservation, is specified by local governments in Korea. Once the development of apartments has been approved, the grounds owned by developers are specified as apartment grounds.
2. The national government involves itself in the private market for apartments at this stage because the demand for apartments generally outnumbers their supply in Seoul. Once development has been terminated, however, the government is no longer involved in this market, and apartment units are bought and sold among individuals without government intervention.
3. Acts are enforced by decrees in Korea. The presidential decree is one type of decree. According to Article 38-1 of HDP, "Residents, users, and the governing body of common housing and common facilities must manage them according to a presidential decree."
4. [Mae-il Kyoungje Shinmun] Daily News, December 23, 1982.
[Chosun Ilbo] Daily News, December 24, 1982.
5. *Saemaul Undong* is a movement for developing new communities that was initiated by government of the Republic of Korea in 1970 under the slogan of "diligence, self-help, and cooperation."
- "6. [Chosun Ilbo] Daily News, February 4, 1984.

Appendix 3.1. The Presidential Decree on Common Housing Management

Article 1: Legal foundation

The Presidential Decree on Common Housing Management is established by the Housing Development Promotion Act, Article 38 and Article 39.

Article 2: Legal objects to which the decree applies: Common housing developed under the Housing Development Promotion Act.

Article 3: Responsibilities of the management body

1. The management body is responsible for the following:
 - (1) maintenance of common grounds and common facilities.
 - (2) security, cleaning, and garbage collection services.
 - (3) collection and deposit of mandatory fees and other fees.
 - (4) collection and deposit of special maintenance funds.
 - (5) execution of the decisions of the assembly.
2. The management body must keep financial documents open to residents.
3. Standards of management personnel and equipment: The mayor is in charge of monitoring, through gu offices, how the standards are followed.

Article 3-2: Audit

1. Centrally-heated apartment communities with 300 or more units must be audited by certified public accountants (CPAs) once a year.
2. The management body must report audit results to the assembly and keep them open to residents.

Article 4: Safety management

1. The management body must maintain the safety of the following facilities:
 - (1) high-pressure gas facilities.
 - (2) central heating system.
 - (3) generators and transformers.
 - (4) dangerous material storage.
 - (5) fire prevention system.
 - (6) elevators and cargo-lifts.
2. The management body must employ licensed personnel for safety management.
3. The management body must monitor safety conditions.
4. The management body must keep records on safety conditions.
5. The management body must control access to common facilities and repair them if potential dangers are found.

Article 5: Responsibilities of residents

1. Residents must allow management employees to enter apartment units for management purposes.
2. Residents are prohibited from doing the following:
 - (1) arbitrary alteration of the architectural design of private space.
 - (2) private use of common space.
 - (3) posting notices in common space for private purposes.
 - (4) keeping pets.
3. Residents shall observe the bylaws.

Article 6: Transformation of common facilities must be approved by the Minister of Construction.

Article 7: Definition of common housing by the PDCHM

1. common housing with 300 or more units,
2. elevator-installed common housing,
3. centrally-heated common housing.

Article 8: Compulsory management by developers during the first year after development

Article 9: Bylaws

1. Owners of apartment units must establish the bylaws.
2. The initial bylaws may be prepared by developers.
3. The bylaws must prescribe the following (but must not restrict the rights of others than residents):
 - (1) rights' and duties of owners.
 - (2) the organization and operation of the assembly.
 - (3) the authority and responsibility of the assembly.
 - (4) the collection, deposit, and use of mandatory fees, special maintenance funds, and penalties for nonpayment.
 - (5) in self-organized management; the organization and operation of the management body, and the qualification, salary, authority, and responsibility of management employees.
 - (6) the responsibility of accounting managers.
 - (7) definition of private domain and common domain.
 - (8) penalties for violators of the bylaws and public order.

Article 10: Representative assembly

1. Owners must elect representatives and organize the assembly.
2. Qualification of assembly member: residence for at least 6 months (except for assembly members of the first assembly after development).
3. The assembly must select one chairperson, at least one treasurer, and at least three directors from the members.
4. The assembly must choose a management type (or select a professional housing management agency) by the approval of a two-thirds majority of the members.
5. The assembly must obtain the approval of a simple majority of owners before choosing a management type.
6. The assembly decides the following by the approval of a simple majority of the members:
 - (1) establishment and amendment of the bylaws.
 - (2) budgetary supervision and audit.
 - (3) operational rules for the maintenance and operation of common facilities.
 - (4) appointment and dismissal of management employees if self-organized management is chosen.
 - (5) repair, replacement and improvement of the common facilities.
 - (6) coordination of conflicts among residents.
7. The assembly must publicize the agenda, date and place of assembly meetings five days in advance.
8. The assembly must promptly publicize the decisions in meetings, financial statements on monthly mandatory fees, and results of the suggestions by residents.
9. The assembly must notify the mayor of the following:
 - (1) the name and location of the community and its assembly
 - (2) the organizational structure of the assembly
 - (3) the bylaws
10. Developers should make arrangements for residents to organize the assembly.
11. The assembly must keep meeting records open to residents.

Article 11: Self-organized management body

1. The management body must satisfy standards for personnel and equipment.
2. The management body should be under the control of the assembly.
3. Assembly members must not be employed by the management body.

Article 12: Approval of the self-organized management body

1. The assembly must apply for the approval of the self-organized

management body to the mayor with the following information:

- (1) the name and location of the community and its assembly.
 - (2) the name of the developer and the development date.
 - (3) the location of the management office, and name and address of its general manager.
 - (4) expected date of opening.
2. The following documents must be attached to the application:
- (1) the bylaws
 - (2) personal information on engineers and detailed statements on engineering utilities
 - (3) a map of the community and its neighbors
 - (4) the organizational structure of the management body

Article 13: Standards for the mayoral approval of the self-organized management body: The mayor must approve it if it satisfies the standards prescribed by the PDCHM.

Article 14: Transition from self-organized management to professional management

1. The assembly must obtain the approval of a simple majority of owners to select a professional housing management agency.
2. The assembly must report the transition of its management type to the mayor with the following documents:
 - (1) approval of owners in writing.
 - (2) assembly meeting records.
 - (3) information on the professional housing management agency.
 - (4) the current balance of accounts.

Article 14-2: The period of contract with professional housing management agencies should be two years or more.

Article 15: Mandatory fees

1. Monthly mandatory fees are the total of the following fees:
 - (1) general management (including salaries).
 - (2) cleaning.
 - (3) pest and rodent control.
 - (4) elevator maintenance.
 - (5) heating.
 - (6) hot water.
 - (7) maintenance.
2. The management body is prohibited *from* collecting mandatory fees for other than the above purposes. But, common electricity and water and fire insurance may be collected using the same procedure as for mandatory fees.
3. The management body may charge user fees for cargo-lifts.
4. The management body may repair common facilities attached to two or more units, and charge those units.
5. In case that a professional housing management agency is designated by the developer, the monthly mandatory fees must not exceed the sum of average monthly mandatory fees during management by the developer and the increase based on the inflation rate.
6. The management body must separate monthly mandatory fees and special maintenance funds.

Article 16: Developer's compulsory repair

1. major facilities: for two years after development
minor facilities: for one year after development
2. The assembly may request developers for repair, and the developers must promptly respond to the requests.

Article 17: Developer's deposit for the compulsory repair: 3/100 of the total development costs must be deposited on the bank account of the

community for the periods prescribed in Article 16-1.

Article 18: Termination of the developer's compulsory repair
Article 19: Types and standards of housing management license
Article 20: Licensing procedure of housing management business
Article 21: Scope of housing management business
Article 22: Licensed housing management agency's report of business opening to the mayor
Article 22-2: Business records on housing management

Article 23: Deposit of special maintenance funds
1. The following common housing must deposit special maintenance funds:
(1) common housing with 300 or more units
(2) elevator-installed common housing
(3) centrally heated common housing
2. The management body must prepare long-term maintenance plans.
3. The special maintenance funds should be based on long-term maintenance plans; otherwise, the RCA bylaws may establish a fund between 3/100 and 20/100 of the sum of average costs for elevator maintenance, heating and hot water, and routine maintenance.
4. The special maintenance funds must be deposited on the community account of the bank designated by the Minister of Construction.
5. The management body must submit proposals to the mayor with the approval of the assembly in order to withdraw from the accounts.

Article 24: Transfer of management

Article 25: Employment of certified housing managers (CHMs)
1. Apartment communities with less than 500 units (or less than 300 units if centrally heated or elevator-installed): Either CHMs or assistant CHMs must be employed.
2. Apartment communities with 500 or more units (or 300 or more units if centrally heated or elevator-installed): CHMs must be employed.

Article 26: Qualification for taking the CHM examination
Article 27: The assistant CHM examination
Article 28: The CHM examination
Article 29: Standards for the pass of the examination
Article 30: Execution of the examination
Article 31: The examination committee
Article 32: Application for the examination
Article 33: Stipends of the examination committee
Article 34: Penalty for the misbehavior in the examination

Article 35: Delegated authority of the Minister of Construction

Appendix 3.2. The Standard Bylaws
(Prepared by the Korea Housing Corporation)

Chapter I. General Provisions

Article 1. Purpose of the bylaws

Article 2. Definition of terms

1. owners: legal owners of apartment units
2. occupants: others who live with owners
3. private space: each apartment unit
4. common space: the rest space of apartment buildings except apartment units, common facilities, grounds, and all other commons

Article 3. Definition of the community boundaries

Article 4. Governing body and management body

1. Owners must establish the assembly and management body.
2. The offices of the assembly and management body should be located in a specific place, such as the community official building.

Article 5. Observance of the rules

Residents shall observe the bylaws and other related law.

Article 6. Effect of the rules

Chapter II. Responsibilities of Owners

Article 7. Status of owners

1. It begins with obtaining the ownership of a unit, and expires with its loss.
2. Those who newly obtained or lost the status of owner must promptly report to the management office.

Article 8. Right of owners

1. Owners have the right to:
 - (1) use their apartments for residence.
 - (2) use common facilities as prescribed by the bylaws.
 - (3) vote for assembly members.
 - (4) serve as a member of the assembly if elected,
 - (5) vote for the amendment of the bylaws.
 - (6) make comments on management to the assembly.
 - (7) vote for the selection of a management type.
2. Occupants have the right of (1), (2) and (6).

Article 9. Voting right

1. One vote is given to one apartment unit even though two separate households share one unit.
2. Owners may vote by proxies who are occupants.

Article 10. Voting rules

1. simple majority voting
 - (1) election of assembly members.
 - (2) establishment and amendment of the bylaws.
 - (3) selection of a management type.
2. unanimous voting
 - (1) selling common properties.
 - (2) alteration or construction of common facilities.

Article 11. Responsibilities of owners and occupants

1. They shall not disturb public order.
2. They should maintain common grounds and facilities.
3. They must pay mandatory fees and share of special maintenance funds.
4. The payments should be made by owners even though their units are leased by tenants.
5. Residents are prohibited from doing the following without the permission as prescribed by the Housing Development Promotion Act (HDP A):
 - (1) alteration or construction of common facilities.
 - (2) use of common facilities other than prescribed by the HDP A.

- (3) destruction of buildings (whole or part).
- 6. Residents are prohibited from doing the following without the approval of the assembly:
 - (1) alteration or construction of common facilities other than those in Article 5 of chapter II.
 - (2) private use of common space.
 - (3) posting notices in common space for private use.
 - (4) keeping pets.
- 7. Residents must allow management personnel to enter their apartment units for management purposes.
- 8. The management office must notify residents of the visit for maintenance purposes in advance.
- 9. Residents should not organize or join other organizations than those permitted by the bylaws.
- Article 12. Legal liability of the damage on common property
- Article 13. Transfer of the authority and responsibility
- Article 14. Fire insurance

Chapter III. Representative Assembly

Article 15. Representatives of apartment buildings

- 1. Assembly members are elected (# of members) from each apartment building.
- 2. Assembly members are elected by the approval of a simple majority of owners.
- 3. The office term is () year(s), and renewable (or not).
- 4. The status of assembly member expires with the loss of the owner status.

Article 16. Structure of the board of directors

- 1. 1 chairperson, () treasurers, and () directors
- 2. The directing members are elected by the approval of a simple majority of assembly members from the members.

Article 17. Authority of the assembly

- 1. The following must be decided by the approval of a simple majority of assembly members:
 - (1) amendment of the bylaws.
 - (2) budgetary processes, auditing, and levying of mandatory fees.
 - (3) operational rules for maintenance .
 - (4) appointment and dismissal of management employees if self-governed management is chosen.
 - (5) repair of common facilities.
 - (6) coordination of conflicts among residents.
 - (7) penalty for violators of the rules.
 - (8) suggestions by 10 or more residents.
- 2. Change or selection of a management type must be made by the approval of a two-thirds majority of assembly members.
- 3. The assembly must obtain the approval of owners prior to the decision on a management type.
- 4. The assembly must publicize its decisions to residents.

Article 18. Meeting

- 1. Regular session: quarterly
- 2. Extraordinary session: called by the chairperson, the treasurer(s), at least three directors, or at least one fourth residents
- 3. The chairperson must publicize the agenda, date and place of the meeting in advance.
- 4. The chairperson may control access by others than assembly members to the meeting.
- 5. The assembly must keep meeting records open to residents.
- 6." A quorum of the assembly meeting is a simple majority of assembly members.

Article 19. Authority of the board of directors

- 1. chairperson: representing the assembly

2. director: assisting the chairperson
3. treasurer: auditing and other financial supervision

Article 20. Responsibilities of the board of directors

1. stipends for directing members
2. financial guaranty of the chairperson
3. Resign of chairperson should be approved by the assembly.

Chapter IV. Management Body

Article 21. Self-organized management

1. The organization of the self-organized management body must be approved by the mayor.
2. Management employees must be appointed by the chairperson of the assembly.

Article 22. Professional management

1. A professional housing management agency must be selected by the approval of a two-thirds majority of assembly members.
2. The chairperson is authorized to make a contract for professional management.
3. The contract must be approved by the assembly in advance.

Article 23. Responsibilities of the management body

1. maintenance of common grounds and common facilities
2. security, cleaning, garbage collection, and pest and rodent control
3. collection and deposit of mandatory fees
4. execution of the decisions of the assembly
5. planning long-term maintenance, and collection and deposit of special maintenance funds
6. keeping financial documents

Article 24. Legal liability of management

1. general manager in self-organized management system
2. the central housing management agency in professional management system

Article 25. Organizational structure of the management office

Article 26. Guaranty of the management body

Article 27. Use of common property: Use of common property by the management body may be allowed by owners as far as it is concerned with management activities.

Chapter V. Accounting

Article 29. General rule: by accounting law and social customs

Article 30. Fiscal year: from () to ()

Article 31. Book-keeping

Article 32. Budget

1. All revenues and expenditures must be included in the budget.
2. Proposals must be submitted to the assembly three months in advance.
3. The budget must be confirmed by the assembly one month in advance.
4. Execution of the budget must be reported quarterly to the assembly.
5. Supplementary budget

Article 33. Balancing of accounts

Article 34. Audit

1. The management body must be audited by CPAs once a year, but the audit may be omitted by the approval of two-thirds majority of owners.
2. The management office must report the auditing results to the assembly and keep them open to residents.

Article 35. Monthly mandatory fees: same as Article 15 of the Presidential Decree on Common Housing Management

Article 36. Charge for late payment of monthly mandatory fees

Article 37. Charge for use of specific types of common facilities

Article 38. Management of monthly mandatory fees

Article 39. Specific regulations on accounting

The assembly may make specific regulations pertaining to accounting.

Chapter VI. Definition of Common Property and Maintenance

Article 40. Definition of private space and maintenance

Article 41. Definition of common space and maintenance

Chapter VII. Long-term Maintenance and Special Maintenance Funds

Article 42. Long-term maintenance plans

Long-term maintenance plans should be made by the management body.

Article 43. Deposit of special maintenance funds

Article 44. Use of special maintenance funds

1. The management body must report to the mayor with the approval of the assembly in order to withdraw special maintenance funds.

2. The funds are prohibited from being used for purposes other than the following;

(1) maintenance activities that are planned in advance.

(2) maintenance activities required by at least two architecture experts even though they are not planned in advance.

Chapter VIII. Public Order

Article 45. Warning

1. The chairperson may give warning to violators of the bylaws and disturbers of public order.

2. The chairperson may stop illegal behavior or report it to the related governmental agencies.

Chapter IV

SAMPLING DESIGN AND CASES SELECTED FOR STUDY

A. Sampling Design

Songpa-gu, the site of this research, is located on the far southeast of Seoul (see Figure 3.2). The district extends over 33.8 km², about 5.6 percent of the whole area of Seoul. It had a population of 628,249 in 1989. There are 25 *dong*, 855 *tong*, and 7,406 *ban* in *Songpa-gu*. The annual budget of the *Songpa-gu* office was about 82 million dollars¹ in the 1989 fiscal year. Because most of the facilities for the 1988 Summer Olympic Games are located in *Songpa-gu*, the nickname of this district is "*Olympic gu*." The district is devoted predominantly to residential (70.1 %) and recreational (26.4 %) use. Commercial areas compose only 3.5 percent of the district's territory. Housing is predominantly apartments (68.6 percent of all housing units), followed by detached housing (25.1 %) and others (6.3 %).

Fifty-two apartment communities have been organized in *Songpa-gu*. There is great variation in physical characteristics among these communities. The size of the grounds ranges from 0.9 acres to 163.6 acres; certain communities with extensive grounds correspond to subdistricts, i.e., *dong*, while some of the small communities include only limited grounds around one or two apartment buildings. In a related vein, the number of apartment buildings in a community ranges from 1 to 163, and the number of apartment units in a community ranges from 120 to 6,000. Apartment units also vary in size, ranging from 7 *pyong* (1 *pyong* = 35.583 ft²) to 68 *pyong*. Some apartment buildings are high-rise, and others are low-rise, ranging in height from 24 floors to 5 floors. *Songpa-gu* is a newly-developed district and has a relatively short history, less than 20 years, in the development of apartments; the first community in this district was developed in 1975 and a number of

apartment communities are still under development. The 52 apartment communities in *Songpa-gu* are ordered by their ground size, from large to small, in Table 4.1. This table also includes the information on total floor size, year of development, number of apartment units, unit size range, number of apartment buildings, building height, heating system, developer type, and management type of each community.

In selecting cases for research, apartment communities without substantial grounds were excluded because the focus of research is in part on the partitioning of urban space. Only those communities with at least 6 acres of common grounds or at least 4 apartment buildings were included. As a result, 16 communities were excluded from consideration, leaving a study "universe" of 36 communities in *Songpa-gu*.

The population size, economic status, and age of apartment communities may all make a difference in community governance and service provision. Community size is relevant, for the theory of collective action indicates that size may have a negative relationship to the ability of a group to act collectively; that is, other things being equal, collective action is easier in smaller groups (Olson, 1965). Community economic status is also relevant because financial capacity can clearly affect the success of the community in maintaining the commons, particularly in case of management by agents. Community age may also be important, for American experiences with RCAs indicate that older communities are better able to act collectively; however, they also have a greater need to undertake maintenance activities (ACIR, 1989).

Measurement problems exist for both size and economic status. Community size refers to population. Because precise figures on population are not available for apartment communities, however, the indicator used for community size in this study is the number of apartment units. One measure of the economic status of a community is its resource base, i.e., the value of apartment units. The prices of

Table 4.1. Selected Characteristics of 52 apartment communities in Songpa-gu, ranked by size of ground space (Continued)

Serial #	Ground space (acre)	Floor space (acre)	Number of units	Number of BLDGs	Unit size (pyong)	Development year	Developer type	Management type	BLDG type	Heating type
1	163.6	170.6	5,540	122	25-64	1988	Metro	pro	high	cent
2	80.6	111.4	3,930	30	34-36	1977	KHC	self	low	cent
3	77.5	68.7	6,000	163	13-20	1975	Metro	self	low	ind
4	75.3	164.9	4,494	56	32-68	1988	Metro	pro	high	cent
5	60.8	53.9	5,390	123	7-17	1976	KHC	self	low	ind
6	50.7	43.3	3,600	74	13-17	1980	Metro	self	low	ind
7	50.2	25.6	1,316	21	31-59	1985	private	pro	high	cent
8	48.7	101.7	3,402	31	28-65	1979	private	self	high	cent
9	45.9	39.7	3,720	68	13-19	1976	KHC	self	low	ind
10	44.6	32.6	3,000	60	7-15	1982	Metro	self	low	ind
11	43.9	40.6	3,280	71	15-17	1976	KHC	self	low	ind
12	39.2	58.5	1,356	18	38-66	1986	Metro	pro	high	cent
13	34.5	63.5	2,130	54	17	1976	KHC	self	low	ind
14	29.6	54.0	1,842	26	26-53	1982	private	pro	high	cent
15	27.1	46.7	1,507	16	15-25	1980	private	self	high	cent
16	24.3	24.3	744	10	27-53	1984	private	pro	high	cent
17	23.6	18.9	1,320	31	13-27	1981	KHC	self	low	ind
18	22.0	11.3	730	18	13-19	1976	KHC	self	low	cent

BLDG: building
 Metro: metropolitan government of Seoul
 KHC: Korea Housing Corporation
 private: private developer
 pro: professional
 self: self-organized
 high: high-rise
 low: low-rise
 cent: centrally-heated
 ind: individually-heated

Table 4.1. Selected Characteristics of 52 apartment communities in Songpa-gu, ranked by size of ground space (Continued)

Serial #	Ground space (acre)	Floor space (acre)	Number of units	Number of BLDGs	Unit size (pyong)	Development year	Developer type	Management type	BLDG type	Heating type
19	15.4	28.9	936	14	31-53	1984	private	pro	high	cent
20	15.3	7.4	1,230	9	19-51	1980	private	self	high	cent
21	11.8	22.7	672	11	31-55	1985	private	pro	high	cent
22	10.6	11.3	900	15	14-18	1985	Metro	pro	low	cent
23	10.3	23.3	749	7	44	1988	private	pro	high	cent
24	10.2	19.2	576	6	27-53	1983	private	pro	high	cent
25	10.1	26.8	430	13	28-34	1980	private	self	low	cent
26	10.0	19.3	648	9	28-44	1984	private	pro	high	cent
27	9.6	18.5	555	7	24-53	1984	private	pro	high	cent
28	9.4	9.4	440	15	22-31	1980	private	self	low	cent
29	8.7	18.2	838	7	19-45	1986	private	self	high	cent
30	8.5	9.1	1,316	10	11-23	1989	Metro	pro	high	cent
31	8.5	16.8	514	8	32-44	1984	private	pro	high	cent
32	8.4	16.6	480	6	31-54	1985	private	self	high	cent
33	7.9	14.9	555	7	27-39	1983	private	self	high	cent
34	7.4	4.3	750	6	17-29	1983	private	pro	high	cent
35	7.2	14.0	378	5	27-59	1985	private	self	high	cent
36	6.1	15.5	750	6	19-32	1988	private	pro	high	cent

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 KHC: Korea Housing Corporation
 private: private developer
 pro: professional
 self: self-organized
 high: high-rise
 low: low-rise
 cent: centrally-heated
 ind: individually-heated

Table 4.1. Selected Characteristics of 52 apartment communities in *Songpa-gu*, ranked by size of ground space

Serial #	Ground space (acre)	Floor space (acre)	Number of units	Number of BLDGs	Unit size (pyong)	Development year	Developer type	Management type	BLDG type	Heating type
37	5.4	10.2	495	4	21-31	1984	private	pro	high	cent
38	5.0	9.9	435	4	21-31	1986	private	pro	high	cent
39	4.9	9.1	252	3	31-52	1985	private	pro	high	cent
40	4.8	8.8	275	4	27-43	1985	private	pro	high	cent
41	4.6	2.7	120	2	43	1983	private	self	high	cent
42	4.3	8.4	264	4	29-48	1985	private	pro	high	cent
43	4.2	12.1	443	4	23-44	1988	private	pro	high	cent
44	3.7	9.5	415	4	25-30	1987	private	pro	high	cent
45	3.4	6.7	226	3	25-45	1984	private	self	high	cent
46	3.3	7.2	493	1	14-28	1988	private	pro	high	cent
47	3.3	6.0	336	3	27-32	1990	private	pro	high	cent
48	2.6	5.2	210	3	25-34	1986	private	pro	high	cent
49	2.4	4.7	120	2	48	1984	private	pro	high	cent
50	2.4	5.6	215	2	28-32	1989	private	pro	high	cent
51	1.2	0.2	132	1	21-24	1986	private	pro	high	cent
52	0.9	0.9	120	1	31	1989	private	pro	high	cent

These last 16 communities (serial number 37 to 52) are excluded from consideration for study.

BLDG: building
 Metro: metropolitan government of Seoul
 KHC: Korea Housing Corporation
 private: private developer
 pro: professional
 self: self-organized
 high: high-rise
 low: low-rise
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apartments generally depend on unit size, in addition to community age, location, and architectural design. Other conditions being equal, larger apartment units are more expensive than smaller apartment units. For this reason, communities with mostly large units are assumed in this study to be relatively wealthy, and are defined as "high-status" communities. Communities with mostly small units are defined as "low-status" communities.

The 36 communities have been classified according to the number of apartment units, year of development, and unit size. With respect to the number of apartment units, communities were dichotomized into small and large at 1,000 units. Assuming that five residents live in each apartment unit, on the average, communities with 1,000 units have an estimated population of 5,000. The 36 communities divide evenly between small and large. With respect to the year of development, communities developed before 1982 are classified as "old," while those developed in 1982 and thereafter are classified as "new." The development of *Songpa-gu* began to boom after the government announced plans in 1981 to construct facilities related to the 1988 Summer Olympic Games. Among the 36 communities, 14 are old, and 22 are new. With respect to unit size, small apartments, usually called "*Kukmln jutaek*" (civil housing), have a maximum size of 34 *pyong*. Seventeen communities have mostly small units, and 19 have mostly large units.²

Table 4.2 classifies the 36 apartment communities according to these criteria. One case is selected from each cell, except that cells IV and V are excluded because they are less typical—Cell V is empty. Cases were selected to maximize the contrast on a particular variable between pairs of cases, while minimizing variation on the other variables for those pairs. The cases selected from Cells I and II and from Cells VII and VIII are intended to contrast community age, while being similar in population size and unit size. The cases from Cells I and III and from Cells VI and VIII are intended to contrast population

Table 4.2. Classification of 36 apartment communities

		Number of Units			
		Small		Large	
		Age	Old	New	Old
Unit size					
Small	I	II	III	IV	
	18, 25, 28	22, 34, 36	3, 5, 6 9, 11, 13 15, 17, 20	10, 30	
Large	V	VI	VII	VIII	
		16, 19, 21 23, 24, 26 27, 29, 31 32, 33, 35	2, 8	1, 4, 7 12, 14	

The numbers in this table refer to serial numbers for communities in Table 4.1. Bold numbers are communities selected for study.

size, while being similar in unit size and community age. And, the cases from Cells II and VI and from Cells III and VII are intended to contrast unit size, while being similar in population size and community age.

The pairs of cases selected are summed up in Table 4.3. The six cases selected for research are not only evenly classified with respect to population, community age, and unit size, but also provide a contrast with respect to developer type and management type. The selection of communities from contrasting categories is intended to provide a cross-section of the communities in *Songpa-gu* for in-depth studies of the six cases. A summary of the six communities by each variable category is in Table 4.4.

Table 4.3. Contrasted Pairs of Cases

Category	Cases	Number of units	Unit size (pyong)	Development year
I, II	18, 22	730, 900	13-19, 14-18	1976, 1985
I, III	18, 9	730, 3720	13-19, 13-19	1976, 1976
II, VI	22, 29	900, 838	14-18, 19-45	1985, 1986
III, VII	9, 8	3720, 3402	13-19, 28-65	1976, 1979
VI, VIII	29, 1	838, 5540	19-45, 25-64	1986, 1988
VII, VIII	8, 1	3402, 5540	28-65, 25-64	1979, 1988

The numbers in this table refer to serial numbers for communities in Table 4.1.

Bold numbers indicate values for contrasting cases.

Table 4.4. Cases Sorted Among Variable Categories

Variable	Classification	Cases
Population	Smaller	18, 22, 29
	Larger	1, 8, 9
Age	Older	8, 9, 18
	Newer	1, 22, 29
Unit size	Smaller	9, 18, 22
	Larger	1, 8, 29
Management	Self-organized	8, 9, 18, 29
	Professional	1, 22
Developer	Secul Gov't	1, 22
	KHC	9, 18
	Private	8, 29

The numbers in this table refer to serial numbers for communities in Table 4.1.

B. Summary Descriptions of the Six Communities

In this section, the six communities selected for research are briefly described. More details on these communities with respect to their assemblies, boards of directors, management offices, community services, and budgets are given in Appendix 4.1.

1. *Olympic Village*

Olympic Village is located in *Oryun-dong, Songpa-gu, Seoul*. To the north of this community, across a six-lane street is a public park, called Olympic Park; to the east and west, across eight-lane streets, are other apartment communities; and the south side is adjacent to farming fields on the edge of the city. Built by the metropolitan government of Seoul in 1988, *Olympic Village* was used for housing players, reporters, and executive members during the Olympic Games.

The size of the grounds, number of apartment units, and unit sizes in *Olympic Village* are all relatively large. There are 122 high-rise apartment buildings on 163.64 acres, ranging in height from 6 floors to 24 floors. All apartment buildings have elevators. The community has 5,540 centrally-heated apartment units, with sizes ranging from 25 *pyong* to 64 *pyong*. There are 8 market buildings and 1 indoor swimming pool within the community, in addition to 5 schools, 2 kindergartens, and various governmental offices, including the *dong* office, police station, and a post office. The community has allocated an extensive amount of space for small parks, 22 small playgrounds, lawns, gardens, parking lots, streets, and sidewalks. Unlike other apartment communities in *Songpa-gu*, all of the buildings have underground parking areas.

There are 62 assembly members, and a board of directors composed of a chairperson, 3 vice chairpersons, 3 treasurers, 3 technical inspectors, and 12 others. The community has contracted with a professional management firm, which employs 535 people in the management

office. Total expenditures were \$9,674,400 (\$1,746 per apartment unit and \$41 per *pyong*³) in the 1990 fiscal year.

2. *Chamsil Chugong* Apartment Community 2:

Individually-Heated System (*Chamsil-I*)

Chamsil Chugong Apartment Community 2, coterminous with *Chamsil 2-dong*, is really 2 different communities, both developed by the KHC in 1976. In addition to being organized as separate communities, what distinguishes the two communities is the type of heating system. This section discusses the community that has an individually-heated system.

To the north of this community, across a ten-lane street, called "Highway 88," lies the *Han* River; to the west, across a four-lane street is the *Chamsil Chugong* Apartment Community 1; the east side is adjacent to the Centrally-Heated *Chamsil Chugong* Apartment Community 2 without physical boundaries; and to the south, across an eight-lane street are the *Shlnchon* subway station and *Chamsil Chugong* Apartment Community 3.

Chamsil-I is a relatively old community, compared to other communities in *Songpa-gu*. The size of the grounds and number of apartment units are relatively large, while unit sizes are relatively small. There are 68 five-floor apartment buildings on 45.88 acres. No apartment buildings have elevators. The community has 3,720 small-size, individually-heated apartment units, composed of 3,590 13-*pyong* units and 130 15-*pyong* units. There are 4 markets, in addition to 3 schools, 1 kindergarten, and various governmental offices, including the *dong* office, police station, and a post office within *Chamsil-C*⁴. The community has a fairly large number of small playgrounds, small parks, gardens, and lawns, but has a relatively small amount of parking space and streets.

There are 68 assembly members, and a board of directors composed of a chairperson, 3 treasurers, and 7 members. The community has selected the self-organized management system; 26 people are employed in

the management office. Total expenditures were \$511,400^s (\$137 per apartment unit and \$9 per *pyong*) in the 1990 fiscal year.

3. *Chamsil Chugong* Apartment Community 2:

Centrally-Heated System (*Chamsil-C*)

Chamsil-C is located on the northeast part of the *Chamsil Chugong* Apartment Community 2. The west and south sides of the community are adjacent to *Chamsil-I*; the north side, to Highway 88; and the east side, to the *Chamsil Chugong* Apartment Community 5.

The size of the grounds, number of apartment units, and unit sizes in this community are all relatively small. There are 18 five-floor apartment buildings on 22.01 acres. No apartment buildings have elevators. The community has 730 small, centrally-heated apartment units, each only 19 *pyong*. There is 1 market, but no schools or governmental offices within the community. The community is very similar in appearance to *Chamsil-I* in terms of the architectural design of buildings, grounds, and facilities.

There are 24 assembly members, and a board of directors composed of a chairperson, 2 treasurers, and 4 members. The community has selected the self-organized management system; 17 people are employed in the management office. Total expenditures were \$393,700⁶ (\$539 per apartment unit and \$30 per *pyong*) in the 1990 fiscal year.

4. *Changmi* Apartment Community

The *Changmi* Apartment Community is located in *Chamsil 6-dong*, *Songpa-gu*, Seoul. This community is geographically divided into two areas by a four-lane street. One area was built on January 27, 1979, and the other on September 3 of the same year, by the same private developer. The second area was merged with the first at the time of development. The north side of this community is adjacent to Highway 88; to the south, across a four-lane street is an extensive business

district; and the east side is adjacent to the *Songnae* subway station; and the west side abuts a ten-lane street that leads to the *Chamsil* Bridge.

Changmi is a relatively old community. The size of the grounds, number of apartment units, and unit sizes in *Changmi* are all relatively large. There are 31 14-floor apartment buildings on 48.68 acres. All apartment buildings have elevators. The community has 3,402 centrally-heated apartment units, with sizes ranging from 28 *pyong* to 65 *pyong*. There are 3 market buildings and 1 indoor swimming pool within the community, in addition to 2 schools and various governmental offices, including the *dong* office, police station, and a post office. Like *Olympic Village*, this community has a fairly extensive amount of common space for small parks, 12 small playgrounds, lawns, gardens, parking lots, streets, and sidewalks.

There are 41 assembly members, and a board of directors composed of a chairperson, 3 treasurers, and 6 members. The community has selected the self-organized management system; 166 people are employed in the management office. Total expenditures were \$4,240,000 (\$1,246 per apartment unit and \$34 per *pyong*) in the 1990 fiscal year;

5. *Karak Halla* Apartment Community

The *Karak Halla* Apartment Community is located in *Karak 2-dong*, *Songpa-gu*, Seoul. Its east and south sides are bounded by eight-lane streets; the west side, by a commercial area; and the north side, by a forest. Built by the metropolitan government of Seoul in 1985, *Karak Halla* is a relatively new community.

The size of the grounds, number of apartment units, and unit sizes in *Karak Halla* are all relatively small. There are 15 five-floor apartment buildings on 10.6 acres. No apartment buildings have elevators. The community has 900 small-size, centrally-heated apartment units—510 14-*pyong* units, 240 16-*pyong* units, and 150 18-*pyong* units.

One market building is located at the center of the community, but no schools or governmental offices are located within the community. The community has only a minimal amount of parking spaces, 3 small playgrounds, and 1 very small park, but there are fairly extensive lawns between apartment buildings.

There are 15 assembly members, and a board of directors composed of a chairperson, treasurer, and 3 members. The community has contracted with a professional management firm, which employs 23 people in the management office. Total expenditures were \$743,700 (\$826 per apartment unit and \$54 per *pyong*) in the 1990 fiscal year.

6. *Karak Woosung* Apartment Community

The *Karak Woosung* Apartment Community is located in *Karak bondong, Songpa-gu*, Seoul. This community is surrounded by detached housing areas and commercial areas. Built by a private developer in 1986, *Karak Woosung* is a relatively new community.

The size of the grounds and number of apartment units are relatively small, while unit sizes are relatively large. There are 7 high-rise apartment buildings on 8.67 acres, ranging in height from 13 floors to 15 floors. All apartment buildings have elevators. The community has 838 centrally-heated apartment units, with sizes ranging from 24 *pyong* to 45 *pyong*. There is one market building at the center of the community, but neither schools nor governmental offices are located within the community. Like *Karak Halla*, this community also has a relatively small amount of common facilities on the grounds.

There are 10 assembly members, and a board of directors composed of a chairperson, 2 treasurers, and 3 members. The community has organized its own management system and employs 44 people in the management office. Total expenditures were \$969,000 (\$1,156 per apartment unit and \$43 per *pyong*) in the 1990 fiscal year.

• Notes

1. The Korean monetary unit is the won. But, most monetary amounts in this study will be reported in US dollars. One US dollar equaled 750 won in 1989.

2. Community 20 is classified as a community with small apartment units because only 90 of 1,230 units in this community are large. This community is the only one that has a small number of large apartment units along with mostly small units. Sixteen communities with both small and large apartment units are classified as communities with large apartment units, because the size of apartment units in these communities is skewed towards large.

3. Assuming that all expenditures for the community are funded by mandatory fees (in fact, less than 5 percent of the expenditures are funded from sources other than mandatory fees, such as interest from savings, user charges, and late payment fees), 25-pyong apartment units are charged \$ 1,025 (= 25 x 41 dollars) of mandatory fees, and 64-pyong apartment units are charged \$ 2,624 (= 64 x 41 dollars), per year. In Korea, the comparison of mandatory fees is usually based on the amount per pyong, rather than the amount per apartment unit.

4. Chamsil-C stands for Chamsil Chugong Apartment Community 2: Centrally-Heated System.

5. This amount does not include electric and water charges. Nor are heating and hot water costs included, because apartments are individually, heated in this community.

6. This amount does not include electric and water charges.

Appendix 4.1. Detailed Descriptions of the Six Communities

1. Olympic Village

a. Representative assembly

There are 62 assembly members in Olympic village, each one representing a single tong. While assembly members in most apartment communities in Seoul tend to represent each apartment building, the assembly members of this community represent each tong. If one or two assembly members are elected from each apartment building, the total number of assembly members will be over 122 in this community. Assuming that an assembly composed of over 122 members cannot efficiently work at the community level, due to the problems of obtaining a quorum or finding a sufficiently large meeting place, Olympic Village constitutes the assembly by representatives from each tong.

There are 31 tong in Olympic Village, and a tong is composed of 2 to 5 apartment buildings. Each tong is represented by two assembly members. The term of office is 2 years and renewable. Assembly members receive no salaries, but some expenditure is used for assembly meetings, amounting to \$16,700, 0.17 percent of the total expenditure of the community, in 1990.

b. Board of directors

The organization of the board of directors is as follows (The figures in parentheses indicate the number of positions.):

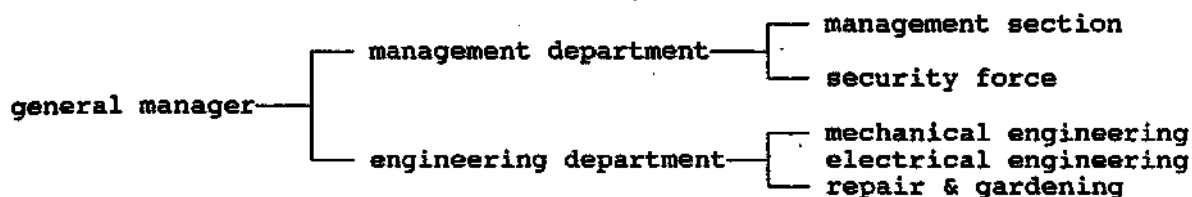
- chairperson (1)
- vice-chairperson: general affairs (1)
 - public relations (1)
 - common facilities (1)
- treasurer (3)
- technical inspector (3)
- others: general affairs (2)
 - accounting (2)
 - mechanical engineering (2)
 - electrical engineering (2)
 - repair (2)
 - gardening (2)

The term of directing members is 1 year and renewable. The bylaws prescribe that the community may pay monthly stipends of \$667 and \$67 to the chairperson and each of the treasurers, respectively.

c. Management office

The management office of this community employs 535 people: 12 in office work (including general manager), 33 in the mechanical engineering department, 30 in the electrical engineering department, 15 in the repairing and gardening department, and 445 security guards.

The organizational structure of this management office is as follows:



This community has selected the professional management system. Hankook Housing Management Company recruits managers and employees, supplies management techniques and information, and arranges for the use of some equipment which is too expensive for a single management office to keep. This community buys all these management services in one package from this company. The amount of the service commission which was paid to Hankook Housing Management Company was \$125,000, 1.29 percent of the total expenditure of the community, in 1990.

d. Community services

Security services are provided and produced by both Olympic Village and the police, respectively. Security guards and the police do not usually work together. Four hundred and forty five security guards are located in 122 apartment buildings, 5 community entrances, and other security posts within the community. Those who are assigned to building entrances work on twelve-hour shifts. Those who are in the community entrances work from sunset to sunrise. Those who are in the security posts on community streets work at night as necessary.

Olympic Village and an adjacent public park, called "Olympic Park," together compose one police precinct. The number of policemen in this police station is 12, whereas security guards employed by Olympic Village are 445. The security guards of this community produce routine security services, such as patrol and access control, while the police are involved in the investigation of criminal cases and other duties assigned by the national police agency and the metropolitan police agency.

Cleaning services in common areas are provided by the community. Olympic Village contracts with three private cleaning agencies. These agencies produce cleaning services for buildings, streets, sidewalks, parking lots, gardens, parks, and playgrounds. Cleaning services for mechanical systems, such as boilers and pipes, and water and sewerage systems are regularly produced in-house by the mechanical engineering department. A chimney is cleaned by another private professional agency once a year.

A stream running through Olympic Village is not common property of the community, but public property of the city. This stream, if polluted, would make a negative environmental effect on this community. Although formal responsibility for cleaning its area is not assigned to Olympic Village, this community coproduces cleaning services for the stream area within the community boundaries, together with the Oryundong office, on 1st and 15th days of every month.

Garbage collection services in Olympic Village are provided by the division of cleaning of the Songpa-gu office and produced by a private agency. Residents pay for garbage collection directly to the metropolitan government of Seoul. Formal responsibility for monitoring the production of garbage collection services is assigned to the Oryundong office. The apartment management office, on behalf of the residents of this community, also monitors the performance in garbage collection and exercises influence over the private agencies and the

Songpa-gu office.

Library services are unique to Olympic Village. Among 52 apartment communities in Songpa-gu, Olympic Village is the only community that provides and produces library services. In order to establish the library, each of the 23 members of this library donated 10,000 won (750 won = 1 dollar) and purchased books. Used books were also donated by residents of this community. The members of the library work on 4-hour shifts in turn. There are check-out fees, ranging from 200 won to 700 won. These fees are used for purchasing additional books.

e. Expenditure

The fiscal year of this community begins on January 1. The total revenue of this community was \$9,777,800, and the total expenditure was \$9,674,400, in the 1990 fiscal year. Community revenues include monthly mandatory fees, late payment charges, cargo lift charges, interests from savings, and other miscellaneous gains. Monthly mandatory fees made up 98.43 percent of the total revenue.

General management costs include salaries of employees, fire insurance payments, transportation and communication costs, office supplies, assembly meeting costs, stipends of the chairperson and treasurers, and the service commission to Hankook Housing Management company. The general management costs were \$4,297,000, 44.42 percent of the total expenditure of the community. Salaries of security guards were \$2,732,900, 63.6 percent of the general management costs and 28.25 percent of the total expenditure.

Electric charges include the charges on each apartment unit and common electric charges for elevators and other common facilities. They were \$2,207,574, 22.82 percent of the total expenditure. Individual electric charges are levied as metered for each unit. Electric charges for heating are included in heating costs. Electric charges for elevators are levied on the basis of unit size. Units on first and second floors are exempt from electric charges for elevators.

Heating costs are calculated by adding boiler oil costs and electric charges for heating. These costs are levied on the basis of unit size. The total heating costs were \$1,467,300, 15.17 percent of the total expenditure. Hot water charges were levied as metered for individual units. Routine maintenance costs were \$184,000 (1.90 %), cleaning costs were \$380,000 (3.93 %), public health costs were \$168,700 (1.74 %), elevator maintenance costs were \$127,000 (1.33 %), common water charges were \$80,000 (0.84 %), and deposits for special maintenance funds were \$35,000 (0.59 %).

2. Chamsil Chugong Apartment Community 2: Individually-Heated System

a. Representative assembly

There are 68 assembly members in Chamsil-I, each one representing a single apartment building. The term of office is 2 years and renewable. Assembly members receive no salaries, but some expenditure is used for assembly meetings, amounting to \$8,600, 1.68 percent of the total expenditure of the community, in 1990.

b. Board of directors

The board of directors is composed of a chairperson, 3 treasurers,

and 7 members. The term of directing members is also 2 years and renewable. In this community, assembly members without full-time jobs tend to be elected to the board of directors and devote themselves to supervising the management office during the day. The bylaws prescribe that the community may pay monthly stipends to the chairperson, but do not specify the amount. The treasurers are also paid small stipends for their financial examination on monthly mandatory fees.

c. Management office

The management office of this community employs 26 people: 12 in office work (including general manager) and 14 in the engineering section. The bylaws of this community limit the total number of management employees up to 39, including general manager. Like most self-organized management offices, the management office of this community does not have a labor union .

d. Community services

Security services are provided and produced by Chamsil-I and the police, respectively. However, because this community employs only two security guards located at the main community entrance, patrol within the community is usually produced by the police that are located within this community. Chamsil-I attempts to save the costs for security services by relying upon the police that are responsible for serving the community. There are no security booths in apartment buildings. The expenditure for security services in 1990 was \$13,000, 2.5 percent of the total expenditure of the community.

Cleaning services in common areas are provided and produced by the community. The management office employs 20 cleaning workers. They are not counted as regular full-time management employees, but only paid on a daily basis. Fifteen of 20 cleaning workers are located in buildings, and the remaining 5 workers, on the grounds. Cleaning services for mechanical systems are produced in-house by the engineering section. The expenditure for cleaning services in 1990 was \$80,500, 15.74 percent of the total expenditure of the community: \$25,400 (4.97 %) for grounds and \$55,100 (10.77 %) for buildings.

Garbage collection services in Chamsil-I are provided and produced by the Songpa-gu office. Residents pay for garbage collection directly to the metropolitan government of Seoul. Formal responsibility for administering garbage collection services within the jurisdiction of Chamsil 2-dong, i.e., Chamsil-I and Chamsil-C, is assigned to the Chamsil 2-dong office. The apartment management office also involves itself in monitoring the production of garbage collection services by cooperating with the Chamsil 2-dong office.

e. Expenditure

The fiscal year of this community begins on January 1. The total revenue of the community in the 1990 fiscal year was \$511,400, and the total expenditure was the same as the total revenue. Monthly mandatory fees made up 86.85 percent of the total revenue. Electric charges and water charges for each apartment unit are not collected through monthly mandatory fees by the community, but directly by the city. Heating costs also are not levied, because the apartment units of this community are individually heated.

Community expenditures include general management costs, cleaning costs, public health costs, and maintenance costs. Out of \$334,300 of general management costs (65.37 % of total expenditure), salaries of

management employees were \$304,000, 59.52 percent of the total expenditure of the community. Cleaning costs were \$80,500 (15.74 %). Public health costs were \$4,200 (0.83 %). Maintenance costs were \$61,400 (12.01 %).

3. Chamsil Chugong Apartment Community 2: Centrally-Heated System

a. Representative assembly

There are 24 assembly members in Chamsil-C. Those apartment buildings with over 30 units are represented by two assembly members, while those with 30 or less units are represented by one assembly member. The term of assembly members is 2 years and renewable. Assembly members receive no salaries, but some expenditure is used for assembly meetings, amounting to \$6,200, 1.57 percent of the total expenditure of the community, in 1990.

b. Board of directors

The board of directors is composed of a chairperson, 2 treasurers, and 4 members. The term of directing members is 1 year and renewable. The bylaws prescribe that the community may pay stipends to members of the board of directors if necessary. The chairperson is paid monthly stipends by the community, and the treasurers are also paid small stipends for their financial examination on monthly mandatory fees.

c. Management office

The management office of this community employs 17 people: a general manager, 7 in the management section, 4 in the engineering section, and 5 in the maintenance section. The bylaws of this community limit the total number of management employees to 18, including the general manager. The management office of this community does not have a labor union.

d. Community services

Security services are provided and produced by Chamsil-C and the police, respectively, as in Chamsil-I. The management office employs 4 security guards. Two of them are located at the community entrance, and the remaining two guards are engaged in patrol. There are no security booths in apartment buildings. Patrol is also produced by the police. The police located within the jurisdiction of Chamsil-I do not make a distinction between Chamsil-C and Chamsil-I.

Cleaning services in common areas are provided and produced by the community. The management office employs 2 cleaning workers, who are not regular management employees. They are located on the grounds. Cleaning services for mechanical systems are produced in-house by the engineering section. Cleaning services for buildings are provided by residents themselves. Each building has 2 to 4 entrances, in which stairs are located without elevators to fifth floor. There are ten apartments per entrance, which compose one ban. The provision of cleaning services for stairs is usually arranged at the ban level through Ban sang hwe. Some ban collectively produce these services by the immediate residents themselves, while others collectively employ part-time cleaning workers. A chimney is cleaned by a private agency once a year. The expenditure for cleaning services by the management

office was \$11,600 dollars, 2.94 percent of the total expenditure, in 1990.

Garbage collection services in Chamsil-C are provided and produced by the Songpa-gu office. The Chamsil 2-dong office is formally responsible for monitoring the production of garbage collection services. The dong office does not make a distinction between Chamsil-C and Chamsil-I. The apartment management office, together with the Chamsil 2-dong office, is also engaged in monitoring garbage collection services.

e. Expenditure

The fiscal year of this community begins on January 1. The total revenue of the community in the 1990 fiscal year was \$420,800, and the total expenditure was \$393,700. Monthly mandatory fees made up 98.85 percent of the total revenue. Community expenditures include general management costs, cleaning costs, public health costs, routine maintenance costs, heating system maintenance costs, heating costs, common electric charges, and common water charges. Electric charges and water charges for each apartment unit are not collected through monthly mandatory fees by the community, but directly by the city.

Out of \$130,500 of general management costs (33.15 % of total expenditure), salaries of management employees were \$113,100 (28.72 %). Cleaning costs for community grounds were \$11,600 (2.94 %). Public health costs were \$6,800 (1.72 %). The total costs for maintenance services were \$39,600 (10.08 %) : \$21,100 for routine maintenance and \$18,500 for heating system maintenance. Heating costs were \$194,700 (49.45 %), common electric charges were \$9,900 (2.52 %), and common water charges were \$560 (0.14 %).

4. Changmi Apartment Community

a. Representative assembly

There are 41 assembly members in Changmi Community. Those apartment buildings with 125 or less units are represented by one assembly member, while other buildings are represented by two members. The term of assembly members is 1 year and renewable. Some assembly members of this community hold additional positions of tong head and attempt to coordinate between the assembly and tong heads. Changmi holds tong meetings that are attended by tong heads, assembly members, and members of the women's association. The tong meeting is unique to this community. Assembly members receive no salaries, but some expenditure is used for assembly meetings, amounting to \$11,200 dollars, 0.26 percent of the total expenditure of the community, in 1990.

b. Board of directors and committees

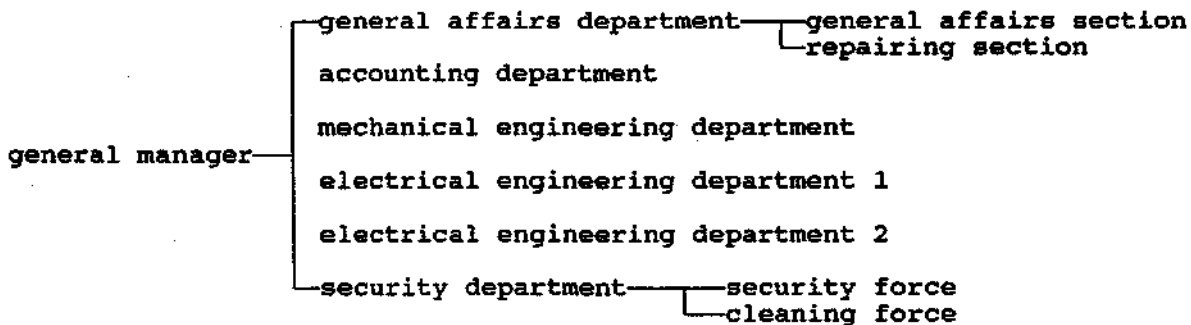
The board of directors is composed of a chairperson, 3 treasurers, and 6 members. The term of directing members is also 1 year and renewable. There are also two standing committees—management committee and engineering committee. The board and two standing committees strictly control the management office. Those directing members and committee members, who have part-time jobs or are unemployed, tend to stay in the assembly office during the day and supervise the management office. The bylaws specify only the maximum amount of expenditure for the assembly, but the chairperson is customarily paid monthly stipends.

The treasurers are also paid small stipends for their financial examination on monthly mandatory fees.

c. Management office

The management office of this community employs 166 people: a general manager, 21 in the general affairs department, 6 in the accounting department, 17 in the mechanical engineering department, 25 in the electrical engineering department, and 96 security guards. Fifty-four cleaning workers are not counted as regular management employees. The maximum number of employees specified by the bylaws is 210. This office does not have a labor union.

The organizational structure of the management office is as follows:



d. Community services

Security services are provided and produced by Changmi and the police, respectively. Eighty two of 96 security guards are located in 31 apartment buildings, and the remaining 14 security guards are located at the community entrances or on patrol. The expenditure for security services in 1990 was \$633,700, 14.95 percent of the total expenditure of the community.

Security services are also produced by the police that are located within the jurisdiction of this community. The police precinct of this police station includes the 3rd Changmi Apartment Community with 120 units and adjacent office districts, as well as the Changmi Community. The police patrol and maintain five security posts within the community. The police station, composed of 12 policemen, is devoted more to the investigation of criminal cases rather than routine patrol within this community.

Cleaning services for grounds and buildings are provided and produced by Changmi. Only four among 54 cleaning workers are male. While male workers are assigned to grounds cleaning, the remaining 50 women work on building cleaning. A chimney is cleaned by a professional agency once a year.

Fifty-four cleaning workers, as well as 96 security guards, are usually monitored by residents. Their job status greatly depends upon the evaluations of residents. The expenditure for cleaning services in 1990 was \$215,700, 5.09 percent of the total expenditure. This expenditure includes salaries of cleaning workers. Cleaning services for mechanical systems are produced in-house by the mechanical engineering department.

Garbage collection services in this community are provided by the

Songpa-gu office and produced by a private agency. The Chamsil 6-dong office is formally responsible for monitoring the production of garbage collection services. The apartment management office, together with the dong office, is also engaged in monitoring the private agency.

e. Expenditure

The fiscal year of this community begins on January 1. The total revenue of the community was \$4,538,000, and the total expenditure was \$4,240,000, in the 1990 fiscal year. Community expenditures include general management costs, cleaning costs, public health costs, elevator maintenance costs, heating costs, individual electric charges, common electric charges, common water charges, routine maintenance costs, and deposits for special maintenance funds.

Out of \$1,378,500 of general management costs (32.51 % of total expenditure), salaries of management employees except cleaning workers were \$1,270,000 (29.96 % of total expenditure). Cleaning costs were \$215,700 (5.09 %), public health costs were \$25,500 (0.6 %), heating costs were \$855,400 (20.18 %), individual and common electric charges were \$1,405,500 (33.16 %), and common water charges were \$51,900 (1.22 %).

5. Karak Halla Apartment Community

a. Representative assembly

There are 15 assembly members in Karak Halla, each one representing a single apartment building. The term of office is 2 years and renewable. Assembly members receive no salaries, but some expenditure is used for assembly meetings, amounting to \$2,400, 0.32 percent of the total expenditure of the community, in 1990.

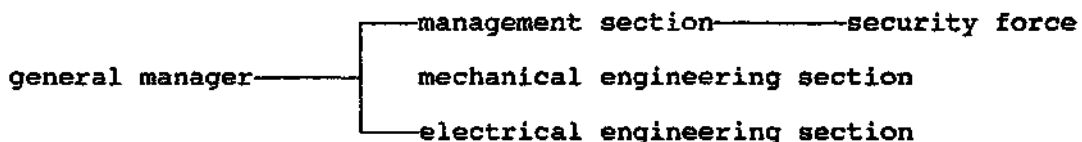
b. Board of directors

The board of directors is composed of a chairperson, 1 treasurer, and 3 members. The term of directing members is also 2 years and renewable. The chairperson is customarily paid monthly stipends by the community, and the treasurers are also paid small stipends for their financial examination on monthly mandatory fees.

c. Management office

The management office of this community employs 23 people: a general manager, 14 in the management section (including 10 security guards), 4 in the mechanical engineering section, and 4 in the electrical engineering section.

Its organizational structure is as follows:



This community has selected the professional management system. The management office is directed by Hankook Housing Management Company. The amount of service commission paid to the central agency in 1990 was \$7,300, 0.98 percent of the total expenditure of the community.

d. Community services

Routine security services, such as patrol, are provided and produced by Karak Halla. The police rarely enter the community, except for the investigation of criminal cases. The Karak 2-dong police station, which serves this community, is generally more involved in detached housing areas and public space in Karak 2-dong, where security guards are not employed by residents.

Karak Halla has no security posts in its apartment buildings. Security posts are located at the four community entrances. Eight of 10 security guards are assigned to these entrance posts on twelve-hour shifts. The expenditure for security services was \$66,900, 9.0 percent of the total expenditure of the community, in 1990.

Cleaning services in common areas are provided by the community. The management office arranges for production by a private cleaning agency. Cleaning is provided for buildings, streets, sidewalks, parking lots, gardens, parks, and playgrounds. Cleaning services for mechanical systems are produced in-house by the mechanical engineering section. A chimney is cleaned by another private agency once a year. The expenditure paid to cleaning agencies in 1990 was \$46,600, 6.27 percent of the total expenditure of the community.

Garbage collection services in Karak Halla are provided by the cleaning division of the Songpa-gu office and produced by a private agency. Residents pay for garbage collection directly to the metropolitan government of Seoul. Formal responsibility for monitoring the production of garbage collection services is assigned to the Karak 2-dong office. The performance of the garbage collection agency, in fact, is monitored by the apartment management office, not by the dong office.

e. Expenditure

The fiscal year of this community begins on May 1. The total revenue was \$745,900, the total expenditure of the community was \$743,700, in the 1990 fiscal year. Monthly mandatory fees made up 99.11 percent of the total revenue. Community expenditures include general management costs, public health costs, maintenance costs, cleaning costs, heating costs, electric charges, water charges, garbage collection tax, and fire insurance payments.

Out of \$235,000 in general management costs, salaries of employees amounted to \$180,600, 24.28 percent of the total expenditure of the community. Electric charges were \$142,500 (19.16 %). The boiler oil costs were \$123,300 (16.58 %). The garbage collection tax (collected through mandatory fees) was \$1,060 (0.14 %). Water charges were \$13,300 (1.79%). Public health costs were \$9,300 (1.26 %). Maintenance costs were \$166,400 (22.37 %) (\$25,600 in the 1989 fiscal year). Cleaning costs were \$46,600 (6.27 %). Fire insurance payments were \$1,120 (0.15 %).

6. Karak Woosung Apartment Community

a. Representative assembly

There are 10 assembly members in Karak Woosung. Those apartment buildings with 100 or more units are represented by two assembly members, while other buildings are represented by one member. The term of assembly members is 2 years and renewable. Assembly members receive no salaries, but some expenditure is used for assembly meetings, amounting to \$4,800, 0.5 percent of the total expenditure of the community, in 1990.

b. Board of directors

The board of directors is composed of a chairperson, 2 treasurers, and 3 members. The term of directing members is 2 years and renewable. However, board meetings are very occasional in this community. Unlike most large communities, this community usually holds assembly meetings rather than board meetings, by virtue of the small size of the assembly. The chairperson is customarily paid monthly stipends by the community, and the treasurers are also paid small stipends for their financial examination on monthly mandatory fees.

c. Management office

The management office of this community employs 44 people: a general manager, 3 in the management section, 8 in the mechanical engineering section, 7 in the electrical engineering section, and 28 security guards. The maximum number of employees specified by the bylaws is 45. This office does not have a labor union.

d. Community services

Security services are provided and produced by Karak Woosung. Most of 28 security guards are located in 7 apartment buildings. The police rarely get involved in providing security services in the community, except for criminal investigations. All types of routine patrol are produced only by security guards.

Cleaning services for grounds and buildings are provided by the community and produced by a private agency. Cleaning services for mechanical systems are produced in-house by the mechanical engineering section. A chimney is cleaned by a private agency once a year.

Garbage collection services in this community are provided by the Songpa-gu office and produced by a private agency. Although formal responsibility for monitoring the production of garbage collection services is assigned to the Karak bon-dong office, the apartment management office is more involved in doing so.

e. Expenditure

The fiscal year of this community begins on July 1. The total expenditure of the community was \$969,000 in the 1990 fiscal year. Community expenditures include general management costs, cleaning costs, public health costs, elevator maintenance costs, heating costs, individual electric charges, common electric charges, common water charges, routine maintenance costs, and deposits for special maintenance funds.

Out of \$417,000 of general management costs (43.03 % of total expenditure), salaries of management employees except cleaning workers

were \$369,400 (39.19 %) . Cleaning costs were \$40,000 (4.12 %) , public health costs were \$6,700 (0.83 %) , routine maintenance costs were \$27,600 (2.93 %) , elevator maintenance costs were \$9,300 (0.98 %) , deposits for special maintenance funds were \$12,200 (1.29 %) , individual and common electric charges were \$238,600 (25.31 %) , and common water charges were \$12,800 (1.36 %) .

Chapter V
CHARACTERISTIC COLLECTIVE-ACTION PROBLEMS
IN APARTMENT COMMUNITIES: AN ANALYSIS

The purpose of this chapter is to discuss the characteristic collective-action problems of the commons in apartment communities. These problems include access control, regulation of use, and maintenance. The chapter analyzes the ways in which these problems are resolved, and compares both problems and solutions among the different physical and institutional characteristics of the six communities.

A. Property Arrangements in Apartment Communities

Apartment communities in Seoul are a complex bundle of private property and common property. Individual apartment units are private. Most of the apartment units in Seoul are privately owned, while only about 5 percent of them are owned by either the metropolitan government of Seoul or the Korea Housing Corporation (KHC). Even the publicly-owned apartment units are subject to private use. Apartment owners are legally entitled to common property within the community as well as to their private property. However, no one can claim exclusive rights to any particular portion of common property. All apartment owners of the community jointly own and use the common property of the community.

Market buildings are also located within all six apartment communities. The smaller communities, *Karak Halla*, *Karak Woosung*, and *Chamsil-C*, have just one market building at the center of the community, while the larger communities, *Olympic Village*, *Chamsil-I*, and *Changmi*, have eight, five, and three market buildings within the community, respectively. The market buildings are not the property of apartment dwellers. Developers sell store units located in the market buildings,

just as they sell apartment units to individual applicants, and the market buildings became the common property of those who own store units. Merchants associations, not apartment communities, are responsible for maintaining the market buildings, even though those buildings are located within the apartment community.

In addition, *Olympic Village*, *Chantsil-1*, and *Changmi* have governmental offices, such as *dong* offices, police stations, and post offices, within their boundaries. These governmental buildings and facilities are not the common property of the community, but governmental property. There are also schools owned, not by the community, but by the city or by educational foundations.

To sum up, apartment communities in Seoul include (1) private property--individual apartment units, (2) the common property of residents, such as community streets, apartment buildings, and grounds, (3) the common property of merchants, such as market buildings, and, sometimes, (4) public property, such as *dong* offices, police stations, and post offices, and (5) public or private schools. Although access to individual apartments, the common property of residents, and schools can be restricted, market buildings and public offices are substantially open-access facilities.

The "commons owned by the apartment community," is labelled the "RCA commons" in this study, referring only to the common property of residents. Only the RCA commons is directly organized by apartment communities. It is still the RCA, however, that has general control over the whole apartment community and regulates access to the community, including all other property within it. The RCA commons refers to (1) common space and facilities on the grounds, and (2) common space and facilities in and around apartment buildings. The common space and facilities on the grounds include fences, community entrances, official community buildings, senior centers, streets, sidewalks, parking lots, street lights, trees, lawns, gardens, parks, playgrounds,

tennis courts, security posts, traffic signs, and facilities for water, heating, electricity, sewerage, and LNG (liquified natural gas) lines. The common space and facilities in and around apartment buildings consist of exterior walls, building entrances, lobbies, stairs, hallways, elevators, basements, roofs, joint TV antennas, cargo-lifts, facilities for water, heating, electricity, sewerage, and LNG lines, and parking lots.

Caring for the commons in apartment communities is neither private action by individual residents, nor administrative action by governmental agencies, but collective action by the community. It should be expected that RCAs will confront problems very similar to those faced by other types of commons communities. Previously, we referred to problems of access-control, use-regulation, and maintenance as characteristic of the commons. Three basic questions guide the analysis in this chapter: (1) Do apartment communities exhibit these characteristic problems, (2) how do RCAs address these problems, and (3) with what degree of success?

B. Access Control

1. Introduction

Access control refers to who is allowed to use the commons. In the context of apartment communities, access control is undertaken as a part of security services. As a matter of law, the presidential decree requires apartment communities to provide security services and control access to common facilities if necessary. Internally, the bylaws of the six communities also require management offices to undertake access control as needed for the purpose of maintenance and safety. Empirically, each of the six communities does distinguish residents from non-residents and control access by non-residents.

All six communities employ security guards; however, the number of security guards varies substantially, ranging from 2 to 445 (see Table 5.1). Besides employing security guards, the communities post warning signs in front of restricted common space or facilities to keep off. They also make an effort to communicate with residents and enable them to better understand the importance of access control. The following excerpts from the monthly newsletters of two communities illustrate the concern:

Olympic Village Newsletter: Our community is having residents display community stickers on their cars for the purpose of better security in the community. This program is aimed for the easy identification of resident cars from outsiders' cars at the five community entrances from midnight to 5 AM, as well as for more effective parking control. Please, do not forget to pick up the community sticker and post it on the top-right of the front window. Our community will strictly control entry by large vehicles (trucks or buses) at the community entrances (but, school buses may use the main community streets except the streets between buildings) beginning April 1 (March, 1990).

Karak Woosung Newsletter: If you have not yet posted community stickers on your car, please do it now, in order for the management office to effectively control parking by outsiders' cars (August, 1991).

Access control is closely related to boundary conditions. All six communities have physical boundary conditions that enhance their ability

Table 5.1. Comparison of security forces

Community	# of Units	Total Guards	BLDG Guards	Exp	Exp/U	Exp/p	Ground Size	# of BLDGs	# of Ent	BLDG Type	Mgmt type
Olympic	5,540	445	414	2,732,900	493.30	11.70	163.64	122	5	high	pro
Chamsil-I	3,720	2	0	13,000	3.49	0.27	45.88	68	3	low	self
Changmi	3,402	96	82	633,700	186.27	5.08	48.68	31	5	high	self
Halla	900	10	0	67,000	74.44	4.90	10.60	15	4	low	pro
Woosung	838	28	24	182,000	217.18	8.30	8.67	7	3	high	self
Chamsil-C	730	4	0	26,000	35.62	1.87	22.01	18	2	low	self

of Units: number of apartment units
 Total Guards: total number of security guards
 BLDG Guards: number of security guards located in apartment buildings
 Exp: total expenditure for security services (in US dollars)
 Exp/U: Exp per apartment unit (in US dollars)
 Exp/p: Exp per pyong (in US dollars)
 Ground Size: size of the grounds (in acres)
 # of BLDGs: number of apartment buildings
 # of Ent: number of community entrances
 BLDG Type: architectural type of apartment building
 Mgmt Type: type of management system
 high: high-rise
 low: low-rise
 pro: professional
 self: self-organized

to restrict access by outsiders. The communities are mostly adjacent to highly contrasting land uses, such as wide streets, forests, or fields. Although the detached housing and commercial areas surrounding *Karak Woosung* are not as sharp a contrast, they are clearly distinguishable from the high-rise apartment buildings of the community. Even *Chamsll-I* and *Chamsil-C* are clearly distinguished from one another by building colors. In addition, all apartment buildings in the six communities prominently display the name and logo of the community on the outside of each apartment building.

The communities are completely surrounded by fences, except that there are no fences between *Chamsll-I* and *Chamsll-C*. The fences are about 5-7 feet high, made of either wire net or bricks, or both. Fences provide a clear line of demarcation between the common space within the community and the public space outside, effectively marking the community territory as non-public property. Although fences do not completely thwart access by outsiders, they keep passers-by, both pedestrians and motorists, from gaining casual access to the community.

In addition to being surrounded by fences, there are only a limited number of entrances to each community, ranging from 2 to 5 (see Table 5.1). None of the six communities, although they are adjacent to arterial streets, are used for through-traffic.

Access control is also related to conditions of "excludability." Certain circumstances make control difficult or undesirable. In the context of apartment communities, the existence of public, open-access facilities within the community, such as governmental offices, schools, and market buildings, necessitates access by non-residents to the community for purposes other than visiting residents. Regardless of the technical feasibility of access control at the community level, no apartment community has the legal authority to restrict access by those who intend to use public facilities. As long as public facilities are located within the community boundaries, therefore, it is impractical to

refuse outsiders entry to the community, at least during the day. Yet, apartment developers tend to locate public facilities within the community for the convenience of residents (see Table 5.2). Often, however, the necessary intrusion is kept to a minimum by institutional or physical design. Because *Olympic Village* and *Chamsll Chugong* are each coterminous with a dong, the governmental offices within these communities are used mostly by the immediate residents. The governmental offices located within *Changml* are used by non-residents, but the offices are located at the edge of the community. Market buildings also create incentives for outsiders to gain access and, in the case of merchants, to extend access. Only *Olympic Village* and *Changml* have large market buildings, and they are located at the edge of the community.

2. Types of Control

a. Organizing a security force

Responsibilities related to access control in the six apartment communities are assigned to management offices and undertaken mostly by security guards. Posted either at the community level or at the building level, security guards are assigned various duties that depend on where they are located. The duties are very similar from one community to another.

(1) Security guards at the community level

In general, the security guards located at community entrances are responsible for controlling access by large vehicles, such as trucks or buses, and peddlers, as well as for interrogating and recording passing cars from midnight to sunrise. Security guards on patrol move about the community either on foot or by bicycle. They are responsible for monitoring fences around the community and controlling access to restricted areas, such as boiler rooms, oil tanks, chimneys, and fenced

Table 5.2. Public facilities located within the six communities

Community	Number of apt units	Number of markets	dong office	police station	post office	Number of schools
<i>Olympic</i>	5,540	8	yes	yes	yes	5
<i>Changmi</i>	3,402	3	yes	yes	yes	2
<i>Chamsil *</i>	4,450	5	yes	yes	yes	3
<i>Halla</i>	900	1	no	no	no	0
<i>Woosung</i>	838	1	no	no	no	0

* *Chamsil* includes both *Chamsil-I* and *Chamsil-C*, because there is no fence between these two communities. In other words, they are physically one community, but organized as different communities.

gardens and lawns. Besides access control, they are also responsible for monitoring service performance related to cleaning, pest and rodent control, and garbage collection related to the streets and other common areas of the grounds.

(2) Security guards at use-points

(a) Security guards at building entrances

Olympic Village, Changml, and Karak Woosung also post security guards at the entrances of apartment buildings, with the following responsibilities:

- (i) identifying visitors.
- (ii) monitoring fire systems, elevators, and service performance related to cleaning, garbage collection, and pest and rodent control inside and around apartment buildings.
- (iii) notifying the management office of accidents, people moving in or out, and defects in the fixtures located in and around apartment buildings.
- (iv) receiving applications for the use of cargo-lifts,
- (v) maintaining security booths,
- (vi) keeping a list of the automobile plate numbers of building residents for the purpose of controlling parking,
- (vii) patrolling the outside space around apartment buildings and parking lots.

By virtue of the relatively small number of apartments per entrance, the building guards remember residents and their cars, and sometimes even their relatives and friends. They also recognize delivery persons. In addition to access control, the post functions as a building "office" available twenty-four hours a day.¹ In *Chamsil-I*, *Chamsil-C*, and *Karak Halla*, where no security guards are posted at the entrances of apartment buildings, tasks such as monitoring fire systems and service performance or patrolling around apartment buildings and

parking lots are undertaken by security guards on patrol.

(b) Controlling access to common facilities

The physical boundaries of most common areas and facilities within each community are highly visible. Certain facilities, such as basements or boiler rooms, are completely enclosed, making it feasible to undertake access control at the use-point level by installing locking systems and other types of mechanical and electrical systems, or by assigning responsibility for monitoring each facility to security guards.

Non-resident parking is controlled in all six communities. Generally, parking spaces are not assigned individually to each apartment unit because there are fewer spaces than apartments. The only exception among the six communities is underground parking provided by *Olympic Village* and allocated to each apartment unit. Because all six communities tend to have fairly extensive boundaries, up to 164 acres, as well as fairly large populations of about 3,300 to 25,000,² it is not feasible for security guards at the community level to identify every resident. All six communities issue stickers for cars that are registered with the management office and attempt to distinguish outsiders' cars from residents' cars. At the building level, however, security guards can easily distinguish outsiders' cars from the relatively small number of building resident cars. They usually record the plate numbers and parking time of outsiders' cars, and leave a warning message if they are parked for too long. The security guards on patrol also leave warning messages on cars that do not have community stickers.

Gardens and lawns are usually low-fenced by wire nets to control casual access by pedestrians. Even if not fenced, access to gardens and lawns is controlled by security guards. Although access to playgrounds is open, the use of play facilities by teenagers and adults is regulated

by "security guards.

Access to major common supply systems for water, electricity, sewerage, and liquified natural gas is quite strictly controlled. These facilities are always locked, and no one except authorized personnel, who are responsible for the operation and maintenance, are permitted to gain access. Access to RCA official buildings is not controlled during the day, but the buildings are locked after a designated time.

b. Business permits

Outside shops are prohibited from doing business within the community, except for delivery, without a permit. Business permits are issued in advance by the management office. The term of the permit is usually one year and is renewable, but permits can be issued daily. Outside shops are not required to present business permits at community entrances or building entrances as long as they are clearly identified by their logo or vehicle.

Peddlers who display goods on the sidewalks or streets are usually expelled by security guards. Sometimes, peddlers are denied access at community entrances, if they can be identified. In all six communities, however, sale from vehicles is usually permitted for the day, as long as goods are not displayed on the ground. In fact, for the convenience of residents, sale of fruits, vegetables, and fish from small trucks is not strictly controlled. Although permits should be obtained each day from the management office, security guards at community entrances or building entrances sometimes allow sale from vehicles without a permit.

3. Benefits and Costs

Theoretically, communities decide to increase or decrease the level of access control by comparing the benefits to be gained with its costs. In analyzing the economic problem in access control, however, measurement problems exist for both benefits and costs.

a. Benefits

At the community level, access control provides a number of benefits. The neighborhoods surrounding the six communities are generally crowded, and offer many incentives for people to gather. *Olympic Village* is adjacent to the *Olympic Park*, which lies on the other side of a six-lane street. The park has a number and variety of sports facilities, including a swimming pool (largest in Korea open to the public), cycling stadium, outdoor concert stage, and several gymnasiums for fencing, gymnastics, and wrestling. *Chamsil* Community is adjacent to a subway station, and located in its neighborhood is the Olympic Complex that includes the Olympic Main Stadium, baseball stadium, and* gymnasium (each the largest of its kind in Korea). In particular, professional baseball games are held almost every day in the summer. *Changmi* is also adjacent to a subway station, and within a ten-minute walk is the largest department store in Korea, and the largest indoor entertainment center in Korea, "Lotte World." In addition, many government agencies, including the Ministry of Environment and the Korean Veteran Association, are located in the neighborhood. *Karak Halla* and *Karak Woosung* are also adjacent to business areas that include offices, shops, and restaurants.

If it were not for access control in the six communities, crowds would spill over into them from their surrounding neighborhoods. In fact, the common areas inside the communities are much less crowded than the areas outside. The types of access control practiced by apartment communities appear to be effective, psychologically as well as physically, in reducing congestion.

In all six communities, the streets between buildings are not restricted simply to pedestrian and vehicular movement, but are also used for play and recreation. Residents jog, play badminton, play with balls, and rest on the benches, day and night. In particular, children play on the streets, sidewalks,, and parking areas, as well as in the

playgrounds. Variety of use, recognized by Jane Jacobs (1961) as an urban value, is one of the benefits of access-control. The physical design of a community is capable of either encouraging or discouraging the provision of security (Newman, 1972). In fact, the highly visible physical boundaries of the six apartment communities seem to create perceptions of safety on interior streets.

Building guards are responsible for undertaking access control only for the buildings assigned to them, so that access control by building guards benefits building residents more selectively. Building guards are also financed at the building level. Each apartment unit's share of the mandatory fees for security services differs in *Olympic Village*, *Changml*, and *Karak Woosung*, based on the number of building guards and apartment units in each building.

In all six communities, stairs, corridors, and hallways are designed to be monitored from the outside, i.e., from buildings next door or from the grounds. Building guards not only stay at building entrances, but also patrol stairs, corridors, hallways, elevators, basements, and roofs. Common space in the building is often used as if it were an indoor playground. Children ride bicycles or play with toys.

b. Costs

While access control benefits apartment communities, it also imposes costs on residents by creating inconveniences in a number of ways. Fences and a limited number of community entrances require residents to take detours for entry or exit. Stopping pedestrians and cars at building entrances or community entrances is also an inconvenience. Business permits restrict the opportunities for more diverse shopping. Residents, who must register their cars with the management office and renew the registration, spend time doing so.

Besides these inconveniences, the cost of access control is monetary. Although the out-of-pocket costs of access control are not

directly recorded as such, they can be represented by the expenditure for certain related activities. Because most access control is undertaken by security guards in all six communities, this study assumes the expenditure for the security force to be the out-of-pocket cost of access control. In principle, however, the expenditure for maintaining fences, as well as for printing and distributing community stickers, should also be counted as access-control costs.

As can be seen in Table 5.1, the size of a security force, i.e., the number of security guards, varies substantially between high-rise communities and low-rise communities. The three high-rise communities employ 445, 96, and 28 security guards, whereas the three low-rise communities employ 2, 4, and 10 security guards.

The expenditure for security guards also varies greatly. For example, while *Olympic Village* has only 1.5 times as many apartment units as *Chamsil-I*, it spends 210 times as much for security guards. Both the expenditure per apartment unit and the expenditure per *pyong* for the security force are larger in high-rise communities.

Although access control at the building level is technically more feasible than at the community level, it is more costly in low-rise communities due to the architectural design of apartment buildings. All three, low-rise communities have the same type of buildings: five-floors, no elevators, no hallways, and ten apartment units per entrance. If these communities were to locate security guards at all building entrances, they would need to employ one security guard per ten apartment units. All high-rise buildings have elevators, but their heights vary; some buildings have hallways, while others do not. The high-rise buildings with hallways on every floor have only one or two building entrances, and require only one or two security guards. Even without hallways, high-rise buildings have more apartment units per building entrance than low-rise buildings; for example, there are 50 apartment units per entrance in 25-floor buildings without hallways.

At each entrance of a high-rise building, there is one security booth and two security guards on twelve-hour shifts. According to Table 5.1, whereas the low-rise communities locate no security guards in apartment buildings, the high-rise communities locate 80-90 percent of their security guards at building entrances (see Figure 5.1.A). There is no legal requirement, however, that security booths be located at every entrance of a high-rise apartment building. *Karak Hyundai Apartment Community 2*, a high-rise community, locates a security booth halfway between two apartment buildings, instead of at each building entrance (see Figure 5.1.B).

Because of physical design, low-rise buildings may have less need for posting security guards in each building. Arguably, low-rise buildings are better designed for access control on two accounts. First, because there is less distance between low-rise buildings than between high-rise buildings, the streets around low-rise apartment buildings can be more closely monitored by residents through windows and balconies. Second, apartments in low-rise buildings are more easily monitored from the grounds, unlike the top-floor units in high-rise buildings. As Jacobs (1961) contended, the surveillance provided by the casual passerby on foot or in a car may be important as a deterrent to criminal activity. In fact, American experiences with residential buildings in different heights indicate that taller buildings contribute to greater criminal activity (Newman, 1972).

The number of security guards used at the community level, i.e., at community entrances or on patrol, is related neither to the number of community entrances nor the size of grounds. For high-rise communities, however, it is positively related to the size of grounds. Whereas *Olympic Village* and *Changmi* employ 31 and 14 security guards at the community level, respectively, *Chamsil-I* and *Chamsil-C* employ only 2 and 4 security guards, respectively. This difference may also be affected by economic status. Both *Olympic Village* and *Changmi* are also high-

Figure 5.1.A. Location of security booths in apartment buildings.

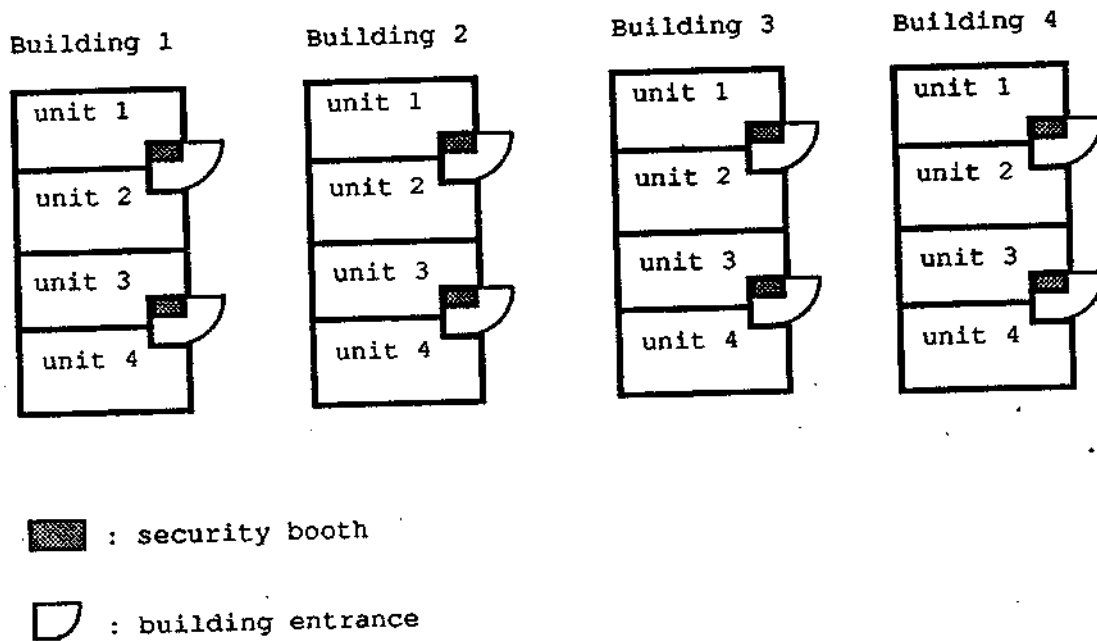
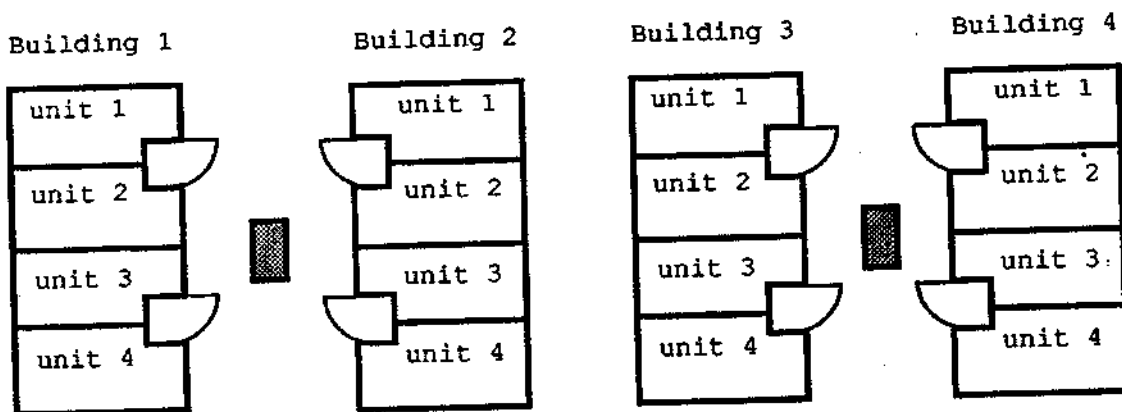


Figure 5.1.B. Location of security booths for apartment buildings in Karak Hyundai Apartment Community 2



status communities.

Chamsil-I posts its two security guards at the main community entrance on 12-hour shifts. *Chamsil-C* posts two security guards at the community entrance, and the other two, on patrol. These communities, both low-rise and low-status, employ only a minimal number of security guards, in order to meet the requirement of providing security services prescribed by the PDCHM. They attempt to relegate responsibility for maintaining security within the community to police, while high-rise and high-status communities supplement the police with their own security guards. The police, however, do not undertake access control.

Together, these two communities comprise a single dong—*Chamsil 2* dong—being more or less isolated from surrounding neighborhoods by fences and wide streets. In addition, the governmental jurisdictions of the *dong* office, police station, and post office of *Chamsil 2* dong coincide with the boundaries of these two communities. In fact, persons other than residents and their guests may have little need or incentive to gain access to the two communities. The level of access by outsiders to these communities is relatively low; consequently, there may be less need for access control.

On the other hand, *Karak Halla*, although it is a low-rise and low-status community, employs 10 security guards—a relatively large number of security guards, compared to *Chamsil-I* and *Chamsil-C*. The fairly large investment in access control by this community may be affected by its management type, which is professional. In 12 apartment management offices organized by *Hankook* Housing Management Company, the proportion of security guards to the total management employees ranges from 43 percent to 83 percent (see Table 5.3). Professional housing management agencies have incentives to employ more security guards, because the amount of the service commission paid to the agencies is proportional to the size of the management office. In other words, they have fewer incentives to reduce the number of security guards. In addition, they

Table 5.3. Comparison of 12 apartment management offices in Seoul organized by *Hankook* Housing Management Company and four self-organized communities

Community	Units	Management Employees	Security Guards	Sec/Man
Olympic Village	5,540	535	454	84.02
Chamsil Woosung	1,842	167	133	79.64
Asian Village	1,356	144	114	79.17
Karak Halla	900	23	10	43.48
Karak Samhwan	648	55	39	70.91
Sangyong Daechi 1	630	57	42	73.68
Chamsil Hanyang 1	576	55	38	69.09
Daechi Woosung 1	476	48	36	75.00
Sangyong Daechi 2	364	41	27	65.85
Ghil-dong Plaza	354	36	26	72.22
Karak Woosung	264	19	9	49.37
Chamsil Hanyang 3	252	28	18	64.29
Chamsil-I	3,720	26	2	7.69
Changmi	3,402	166	96	57.83
Karak Woosung	838	44	28	63.64
Chamsil-C	730	17	4	23.53

Chamsil-I, Changmi, Karak Woosung, and Chamsil-C, all are self-organized communities.

Units: number of apartment units

Management Employees: number of management employees

Security Guards: number of security guards

Sec/Man: (Security Guards/Management Employees) x 100

attempt to enhance the quality of community services by employing more security guards. *Karak Halla* also is relatively small compared to the size of the police precinct serving it and therefore tends to be ignored by police.

4. Institutional Problems Related to Access Control

Because responsibility for access control is delegated to the management office in the six communities, the management office has more information related to access control and more incentive to obtain selective benefits through various strategies. As a result, there may arise several principal-agent problems.

a. Corruption of managers

Corruption of managers is a problem arising from the institutional arrangements related to access control. The discretion required to control access creates opportunities for corruption, particularly in issuing permits to businesses outside the community. The issuance of business permits does not require approval by the assembly. In this process, managers are vulnerable to corruption by shops seeking permits.

One example is found in the relationship between outside dry-cleaning shops and managers. Dry-cleaning shops receive orders not only at the shop, but also by visiting apartment units and collecting clothes. They have incentives to enter the community in order to receive more orders and collect clothes. The number of business permits issued to outside shops is limited in order to protect businesses within the community. In the process of selecting outside shops or renewing business permits, managers are subject to bribery. Some shops bribe the board of directors of the women's association, and the women's association puts pressure on the management office, using the pretext of housewives' evaluations. Obtaining a business permit is quite competitive in large communities with a large number of residents as

consumers. Some outside shops make an established payment to managers every month in large communities.

Corruption exists not only between outside shops and managers, but also between inside shops and managers. Inside shops bribe managers to secure protection from outside competition. Besides restricting small outside shops from doing business in the community, management offices may strictly prohibit access by shuttle buses from large department stores in the neighborhood. All of the six communities prohibit department store buses from entering the community (but allow entry to shuttle buses from kindergartens or other educational institutes).

Corruption in the relationship between business and managers is not an accident. Its cause and the reaction to it are best understood in terms of the institutional arrangements related to access control. Management offices have the most authority and responsibility for undertaking access control. Their performance is not closely monitored by the assembly, because the way that access control is administered does not clearly increase the budget, compared to maintenance for example. Instead, the assembly attends more to the organizational and financial affairs of management activities that clearly affect expenditures. Most decisions on access control are made by a single manager, including organizing the security force and issuing business permits. Shared interests by business and managers ensure mutual cooperation between them and maintain corruption through silence.

b. Shirking by security guards

Shirking by security guards is a potential problem in the six communities. The security guards at the community entrance or on patrol are not easily monitored by residents, because they do not always stay at one place nor are their assignments noticeable. On the other hand, the security guards located in apartment buildings are monitored rather strictly by the building residents themselves. The guards must be

present for 24 hours on 12-hour shifts. They are easily monitored by residents during the day, and even by residents returning home at night. Their continued employment in each apartment building is highly dependent on the evaluations of the building residents.

The building guards are customarily paid tips by residents, in addition to the monthly salaries paid by the community. Decisions about tips are usually at the *ban* level through *ban sang hwe*. Once their amount has been determined, *ban* heads collect the money for tips from each apartment unit. Shares by each apartment are equally divided by all apartments of the *ban*. As a response to tips, building guards are loyal to and subordinate to their residents. More often than not, however, residents also ask security guards to serve them selectively, and reward them by giving tips individually. In this way, security guards provide private goods for particular residents, as well as public goods for the building community.

5. Conclusion

According to the findings in the six communities, outsiders have relatively easy access to the community, except at night. Yet, access is constrained in these communities by fences, a limited number of community entrances, and security guards in charge of access control. The most exclusionary constraint is in outsiders' doing business in the community. If access control is successful, the space within the community will be less crowded, compared to its neighborhood; and the streets, sidewalks, parks, and buildings within the community will be relatively safe. In fact, none of these communities are overwhelmed by outsiders. All six communities are much less crowded than their neighborhoods. They are also perceived as safe even at night, so that the streets, sidewalks, and parks are also used for children's play and family recreation. Based on these indirect measurements of access level, all six communities appear to undertake effective access control.

The presidential decree is concerned directly with regulation of use in apartment communities and prohibits residents from engaging in certain types of behavior. According to the decree, the architectural design of apartments cannot be altered without prior approval by the Minister of Construction. In addition, the exclusive private use of common space and facilities is prohibited. The decree also prohibits residents from keeping pets in apartments. The PDCHM requires further that the representative assembly formulate operational rules related to these regulations.

All six communities make operational rules related to use regulation. Although no communities mention use regulation as such in their bylaws, security guards undertake use regulation in each community. Regulation of use, together with access control, is a part of security services. The six communities use various methods to obtain compliance with use regulations. No communities, however, have the police power to arrest or fine violators. Instead, they use newsletters, warnings, persuasion, mediation, and user charges for the purpose of use regulation. More than access control or maintenance, use regulation is related directly to residents themselves. The responsibility for use regulation is assumed by residents as well as management offices. In general, use regulation is not specified by community rules in detail, but is based largely on social custom.

The concern of the six communities with use regulation is shown in their newsletters. Here are excerpts from the monthly newsletters of four communities:

Olympic Village Newsletter: To make our community better, please do not do the following: (1) use loud voices, play loud music, and blow car horns, especially at night; (2) block stairs and hallways with domestic things; and (3) litter grounds with trash (May, 1991).

Karak Halla Newsletter: Lawns are dying due to careless use by residents, especially children. Please, for the sake of a nice residential environment in our community, cooperate to protect the lawns (May, 1991).

Karak Woosung Newsletter: Please, pack your garbage completely. Pay more attention to wet garbage in order that liquid garbage does not drop on the floor. Otherwise, floors and elevators will be dirty and smell bad (June, 1991).

Changmi Newsletter: Residents are prohibited from keeping pets in apartments, according to the PDCHM, Article 5-2. But, pets are still found in apartments, and some residents complain about pets. Please, remove pets from your apartments (September, 1990).

2. Potential Benefits and Costs: The Conditions of Regulation

Like access control, community decision-making in use regulation is affected by the benefits to be gained from use regulation and its costs. Measurement problems, however, also exist for both benefits and costs.

a. Benefits

Why do the six communities undertake use regulation? Why is use regulation important in these communities? The reason is that they benefit from use regulation. Because all six communities are relatively densely-populated compared to *Songpa-gu* and the city as a whole (see Table 5.4), and the supply of common space within the community is limited, they are potentially subject to crowding. Without use regulation, therefore, a few highly subtractive uses would drive out others, leaving a commons dominated by those few uses.

First, use regulation may prevent the common space within the community from becoming crowded. As discussed earlier, access control alone does not do so. For example, even if parking by outsiders' cars were fully prohibited, parking lots would be crowded as long as the number of parking lots is smaller than the number of residents' cars. In fact, because parking is scarce in all the communities except *Olympic Village*, many residents' cars might be parked elsewhere other than in parking lots. Without parking regulation, many cars would occupy streets, sidewalks, and even lawns and playgrounds, or would have to be

Table 5.4. The population densities in the six communities

Community	Population	Ground Size	Population/acre
Olympic	24,930	163.64	152
Chamsil-I	16,740	45.88	365
Changmi	15,390	48.68	314
Halla	4,050	10.60	382
Woosung	3,771	8.67	435
Chamsil-C	3,285	22.01	149
Songpa-gu	625,799	8,352.28	75
Seoul	10,286,503	149,604.63	69

The population of the apartment community is an estimated figure that is calculated by multiplying the number of apartment units of the community by 4.5.

Ground sizes are reported in acres.

Population/acre = population / ground size

parked outside the community. In practice, the communities accommodate all residents' cars in other appropriate spaces as well as in parking lots by managing the overall parking situations effectively.

Second, in a related vein, use regulation increases the jointness of use of common space in the six communities for residential purposes. In other words, use regulation may make the use of common space and facilities less subtractive, so that use by one resident does not subtract as much from use by another. The common space within apartment communities is subject to multiple, heterogeneous types of uses, such as playing, jogging, walking, recreation, transportation, and parking. The streets around apartment buildings can be used for playing, family recreation, jogging, walking, and roller-skating, as well as transportation; sidewalks, for walking, jogging, and children's play; parking lots, for playing as well as parking; and hallways, for playing as well as walking. On the other hand, if uses are not regulated, streets can be dominated by vehicles at high speed; sidewalks can become crowded with pedestrians and parked cars; and hallways can be used to store personal things. In particular, due to a shortage of parking space in these communities, there is a potential for parking to drive out other uses. This is a situation that threatens multiple joint uses.

Third, use regulation may enable communities to spend less to maintain amenities—streets without trash, clean stairs and hallways, and well-cared lawns and gardens. Communities provide collective services, such as cleaning, to maintain these amenities. Without use regulation, however, maintenance would be more costly. For example, if littering is not regulated, street cleaning becomes more costly. Regulation of use contributes to less expensive maintenance of amenities by protecting the commons from excessive or improper use.

b. Costs

In spite of a diverse set of benefits to be gained from use

regulation, why do the six communities not undertake as much use regulation as they could? What are the difficulties involved in use regulation in these communities? Use regulation is costly. The costs have two components: the out-of-pocket costs for undertaking regulation and the benefits from prohibited uses.

Much more than access control, use regulation is co-produced by residents and security guards. Due to coproduction, the out-of-pocket costs for use regulation may be smaller than for access control. Moreover, security guards are involved in the joint production of access control and use regulation. Due to the "joint products" being produced by security guards, it is difficult to measure the out-of-pocket costs for use regulation. Some portion of the expenditure for printing newsletters and warning notes should also be included in the out-of-pocket costs of use regulation.

The benefits to be gained from prohibited uses are equivalent to the value of inconveniences caused by regulation. Sometimes, strict regulation of use can be regarded as excessive restriction of individual freedom. In fact, prohibiting residents from keeping pets, installing air-conditioners outside the walls, or drying clothes in the balcony restricts individual life styles in ways that are hardly evidenced in non-RCA residential communities. These types of prohibitions may cause inconveniences for residents physically as well as psychologically.

While strict and uniform application of rules potentially results in inconveniences in use, the management of use situations is intended to minimize the cost attached to prohibited uses. Use situations are often managed to accommodate as many uses and users as possible, without exclusion. The parking situation, discussed below, is a prime example.

3. Levels of Regulation

Use regulation in the six communities is undertaken both at the apartment building level and community level. At the building level,

use regulation is more intensive. Diverse means of regulation, such as mutual monitoring, face-to-face conversations, and resident meetings, as well as selective application of rules, are feasible at the building level. Building residents, first of all, are involved in regulation at this level by individually monitoring, pointing out, or correcting neighbor's behavior. In high-rise communities, in addition, building guards contribute to this effort. Operational rules related to use are formulated at the level of *ban*, *tong*, or apartment building, that apply only to particular buildings. Rules formulated in *Ban sang hwe* are made directly by residents themselves or in a joint meeting of *tong* and *ban* heads. Although these rules are unwritten, they are recognized by the immediate residents.

The feasible means of regulation are more limited at the community level. Like access control or maintenance, use regulation at the community level is undertaken primarily by management offices, rather than by the residents themselves. Management offices publish newsletters and fliers, issue warning notes, and charge user fees for certain types of facilities. However, because the area covered by the communities tends to be extensive, up to 164 acres, and the population is also fairly large, up to 25,000, most use situations are not under the direct control of management offices. In general, use regulation on an individual basis at the community level, except for user charges, is minimal.

There are also possibilities for external authorities to be involved in use regulation, as authorized by the PDCHM and other laws. In most cases, however, the involvement of external authorities is very limited. It can usually occur only upon request by communities. The means of regulation available to external authorities range from warning notices to compulsory sale of apartments.

a. Use regulation and management at the building level

Given the potential benefits and costs and the conditions of regulation, use regulation occurs primarily at the building level. Regulation affects the joint use of common space in and around buildings and the protection of residential amenities. Because use regulation in low-rise buildings is undertaken primarily by building residents, the out-of-pocket costs for regulation are not high. In high-rise buildings, use regulation is co-produced by residents and guards. Some portion of the expenditure for building guards should be assigned to the out-of-pocket costs for use regulation rather than for access control. In Korean, however, "security" implies "keeping secure from the outside." Security guards are responsible primarily for access control, and secondarily for use regulation. Even in high-rise buildings, guards are less involved in regulating the use of common facilities than are residents.

In general, because residents in low-rise buildings are able to monitor the grounds relatively easily, washing cars, littering, spoiling lawns and gardens, and vandalism are more easily regulated by building residents, compared to high-rise buildings. On the other hand, these types of behavior on streets are restricted by building guards as well as building residents in high-rise buildings.

There are neither officials nor committees at the building level in the six communities. Regulation in the communities is based on social norms as well as on the institution of the RCA. In particular, regulation at the building level or *ban* level can be attributed more to customary norms, such as social control by senior residents, than RCA rules. Customary norms allow mutual monitoring among residents.

Dominance by senior members of a community is an important social principle in Korea, based on Confucianism. Seniority depends on age, first of all; length of residence is not as important. In addition to age, socioeconomic status is also important for seniority. Senior

residents are not necessarily *tong* or *ban* heads, nor are they assigned responsibility for regulating uses in designated areas. They nevertheless exercise considerable influence with neighbors, security guards, and managers. For example, it is customary that senior residents make the final decisions in *Ban sang hwe*. Their authority, however, does not work well beyond the building level. In particular, dominance by seniors is very weak in most urban public spaces outside apartment communities.

(1) Use situations at the building level

Apartments are very close to each other, and the common areas in apartment buildings, such as stairs, hallways, and lobbies, are narrow. Moreover, apartment buildings in *Olympic Village*, *Chamsil-I*, *Chamsil-C*, and *Karak Halla* do not have hallways. In these restrictive physical conditions, some types of behavior can be highly subtractive. There occur various use situations at the building level—inside buildings and elevators, and outside, in the common areas and facilities around buildings.

(a) Inside buildings: Exclusive private use of common areas inside buildings, such as storing bicycles, plants, cartons, or trash, on stairs and hallways, is not permitted. If the use is only temporary, however, it is not easily monitored, nor does it usually need to be regulated. But, prolonged use of common space or facilities exclusively by particular households is effectively prohibited. Both in *Chamsil-I*, *Chamsil-C*, and *Karak Halla*, in which each *ban* is composed of 10 apartment units along the stairs, and in *Changmi* and *Karak Woosung*, in which some *ban* are composed of apartment units along the hallway, *ban* heads are usually involved in regulating and managing the use of the stairs and hallways. Violating households are usually either individually asked to remove them by *ban* heads, or identified in *Ban*

sang hwe.

(b) Elevators: The use of elevators is regulated at the building level because the electric charges for elevators are shared by building residents. Community rules do not permit elevators to be used for moving in or out. Because elevators are close to security booths in Olympic Village, Changmi, and Karak Woosung, improper use of elevators can easily be monitored by building guards. Even when they are absent from the security booths, residents who use elevators can monitor their use.

People are not allowed to move in or out by using elevators in these three communities. Those who intend to move out must clear their accounts by visiting management offices and apply for use of a cargo-lift in this process and pay a user fee. If they live on the first or second floor and use stairs instead of elevators, use of the cargo-lift is not compulsory. People moving in may not be aware of community rules related to use of elevators if they are moving from detached housing or rural areas. Even when guards or residents inform them of the community rules, they have an incentive to avoid compliance. Use of elevators for unauthorized purposes, however, may be subjected to the same user fee as for use of cargo-lifts by management offices. This special fee can function as a fine for improper use of elevators.

Cargo-lifts may not be used after sunset, because of noise; plus, their use is dangerous in the dark. Their use is also prohibited in the heavy rain. In cases where moving in or out cannot be postponed until the next day or the rain stops, use of elevators may be allowed for a fee. In practice, the use of cargo-lifts to move in and out is taken for granted in the three high-rise communities.

(c) Common space and facilities around buildings: Washing cars in the parking lots is prohibited in order to save common water and prevent

water pollution. Drying clothes or mattresses, or cooking, on the ground is also prohibited. Walking pets within the community, as well as keeping pets, is prohibited. Certain types of sports or games, such as baseball, golf, or tennis, are prohibited around apartment buildings. Violators are usually asked to stop their behavior by security guards or individual residents. This type of regulation may be more effective if they are admonished by senior residents, or if violators are pointed out in *Ban sang hwe*,

(d) Juvenile misbehavior: Minors are often individually admonished or scolded by adult neighbors if they smoke, make loud noise in the hallways or on the streets, play with dangerous tools, or spoil gardens or lawns. Even their personal appearance is pointed out; for example, if youths are untidily dressed, they are sometimes individually admonished or scolded by senior residents. Residents often report juvenile misbehavior to parents. Juvenile misbehavior is also discussed in *Ban sang hwe* or women's associations.³

(e) Vandalism: Various types of vandalism, such as scratching cars, stealing accessories from cars, stealing newspapers or milk, or sounding fire alarms for fun, occasionally occur in apartment buildings in the six communities. When it happens, vandalism is usually discussed in *Ban sang hwe*. No sustained collective effort to prevent vandalism is made, except in high-rise buildings, where building guards monitor the area.

(2) The case of parking regulation

Because the number of apartment units in a community does not increase once the development of the community is complete, its population size can be assumed to be non-increasing. However, like other areas in Seoul,⁴ the number of cars has greatly increased in all six communities. Parking spaces are extremely scarce and parking areas

have become crowded. The scarcity of parking space is more evident in communities developed in the 1970's, when cars were much less numerous.

It is extremely difficult for communities to supply additional parking lots. In addition to the construction cost, a community must obtain approval from the Ministry of Construction in order to construct new parking areas or transform other common facilities into parking lots. Prior to ministerial approval, all apartment owners must approve the change. The unanimous consent requirement is prescribed by the PDCHM. Communities, therefore, may not substitute parking lots for playgrounds or parks if there is only one household in opposition.

The law does not allow police to enforce parking restrictions on community streets because they are not public. The police are therefore not involved in any type of traffic regulation, i.e., parking or speed regulation, within apartment communities.

The most feasible approach for communities to take is to regulate and manage parking behavior. The general rules related to parking regulation are formulated at the community-level, but the application of rules occurs primarily at the building level. Printed material, such as newsletters or fliers, is useful for diffusing information related to parking regulation to a large number of residents. For persistent violators, however, printed notices are less effective than personal conversation. In dealing with violators, face-to-face conversations are usually more effective at the building level.

Communities differ in the conditions of parking. In *Chamsil-I*, about 1,800 of the 3,720 households (48.39 %) owned cars in 1990, but the community's parking lots accommodated only 300 cars. To make the situation worse, because this community is located very close to a subway station, commuters attempt to park their cars within the community during the day. Although *Chamsil-I* employs only two security guards, it is not difficult for them to distinguish outsider's cars from resident's cars by the community sticker and to leave warning notes on

the cars without community stickers.

In *Changmi*, the parking lots are often crowded even during the day, due to the nearby office district and subway station. Building guards monitor prolonged parking by outsiders around each building. They sometimes leave warning messages on outsiders' cars. Because these printed messages are sometimes ignored by persistent violators, building guards usually attempt to shame outsiders face to face, to discourage them from repeated violations.

Olympic Village has a less serious parking problem, compared to other communities in *Songpa-gu*, because there are a sufficient number of parking spaces relative to the number of apartment units. Private parking spaces are located in the basement of each apartment building. In this community, private property includes a parking space as well as an apartment unit. Even if every household owned a car, the additional parking lots located on the grounds would not be crowded. Violators of parking rules within *Olympic Village* are issued tickets in the name of the chief executive of *Songpa-gu* office. However, this method of parking regulation is misleading. The ticket is still just a warning, with no fine attached.

Except for delivery cars, RCA official cars, and the government's official cars, all cars are prohibited from parking on community streets or sidewalks, although temporary parking for using telephones or buying something is allowed. In case of illegal parking, warning notes are sometimes posted firmly on the car windows in order to give violators the inconvenience of removing the stickers.

While parking areas are usually not crowded during the day because most cars leave for the workplace, parking is extremely scarce at night. Residents who find no space in the parking lots usually park their cars on the side of community streets. Although parking on community streets is generally prohibited, it is tacitly allowed at night as long as it does not obstruct traffic. In high-rise communities, the building

guards manage parking and keep car keys in order to pull out the blocked cars. By managing the parking use-situation, guards effectively maximize the number of spaces available at any given time, and thus enable the community to accommodate as many of their residents' cars as possible. In spite of the lack of sanction, management of the overall parking situation in the six communities is fairly effective in the sense that all residents' cars are somehow accommodated within the community, without other types of facilities being transformed into parking lots.

(3) Resolution of conflicts

Conflicts among residents are usually resolved by the households involved. Although management offices are also responsible for mediating conflicts, the responsibility is often relegated to *ban* heads. For example, if residents complain about noise from neighbors, managers may request, warn, or persuade the neighbors to be quiet. If they continue to make noise, however, the management office usually transfers the responsibility for conflict resolution to *ban* heads, who usually attempt to have face-to-face conversations with the residents involved. Often, however, residents attempt to mutually resolve conflicts between the households that are immediately involved, without getting a third party involved. In any case of conflict, residents hardly ever call the police.

(4) Effectiveness

The effectiveness of use regulation should be measured by the jointness and multiplicity of uses. The degree of jointness, however, is not readily measurable. Assuming that residents will more often complain about one another if use is subtractive, complaints of residents about neighbors is one indicator of the degree of jointness: the fewer complaints, the greater jointness. Judging by the number of

residents' complaints reported to management offices, no more than one out of twenty complaints received is about neighbors in any community. The majority of complaints are about service performance and architectural defects. Many complaints are mutually resolved by residents themselves at the building level without being reported to the management office. Not only fewer complaints from residents, but also mutual resolution of conflicts, indicates that mutual understanding and compromise among residents are successful in use regulation. In the "federal" structure, composed of a building level and a community level in the six communities, the ability to settle conflicts at the building level without recourse to the community level is evidence that use regulation at the building level is relatively successful.

b. Use regulation at the community level

Use regulation at the community level is undertaken primarily by management offices. Except when user fees are charged to individuals, however, it is difficult for management offices to directly control individual resident behavior at the community level. Instead, use regulation at the community level generally involves providing information related to use, such as the publication of newsletters and other printed notices. The community-wide efforts at use regulation appear to be supportive of building-level efforts.

Management offices usually make an effort to communicate with residents and help them better understand the importance of use regulation by the community. The most important instrument of communication is the newsletter. The community newsletter is a practical means of telling residents what is going on in the community. It arouses interest and participation in community activities related to use regulation. New operational rules related to use regulation are published in monthly newsletters or posted on bulletin boards. It reports on the activities of the assembly and management office and

publishes monthly and annual financial statements. Space is allocated to regular messages from the assembly chairperson and general manager. The publication of newsletters in the six communities is sponsored by businesses located in the community market buildings and nearby.

Some types of household behavior and the use of streets, tennis courts, cargo-lifts, and other common facilities, however, are regulated at the community level. These are discussed below.

(1) Household behavior

According to the rules of all six communities, air-conditioners may not be positioned on the outside of walls because water drops from them to lower floors. Drying of clothes outside on the balcony is also prohibited. Disc-antennas also may not be installed because they can spoil the beauty of the community.

Although installing air-conditioners outside the walls is prohibited, removal can not be coerced once they have been installed. Instead, managers visit households in an effort to persuade them to comply. Because it is quite costly to remove air-conditioners, residents usually resist as long as they can. On the other hand, when removal is urged by neighbors either informally or in *Ban sang hwe*, residents tend to comply with the regulation.

Security guards and managers sometimes notify households individually that they should correct violations by a designated time. Even if they repeat violations, however, management offices cannot fine them. Instead, written warnings continue to be given until violations are corrected. Although persistent violators can be evicted from the community by judicial decisions, none of the six communities has ever had recourse to courts. In effect, warnings in these communities are actually no more than strong requests without sanction.

(2) User fees: tennis courts and cargo-lifts

Communities charge user fees for tennis courts and cargo-lifts. Because tennis courts are completely fenced, and cargo-lifts cannot be operated without special devices, communities can easily exclude potential users from these facilities unless they pay the designated price. None of the six communities charge user fees for any other facilities.

Tennis courts generally are in limited supply compared to the number of residents in the communities. (There are no tennis courts in *Karak Halla*. *Chamsil-I* and *Chamsil-C* share tennis courts.) Even *Olympic Village*, with a population of about 25,000, has only four tennis courts. Communities ration the use of tennis courts by charging fees. Tennis courts are not managed directly by management offices, but are leased to private firms, which collect the fees.

Chamsil-I and *Chamsil-C* share the revenues from tennis courts. At first, *Chamsil-I*, together with *Chamsil-C*, assigned employees to tennis courts and gave them responsibility for collecting user fees. But, employees often embezzled the fees. Next, the tennis courts were managed temporarily on a voluntary basis by the senior association, but the association was uninterested in doing this permanently, because they benefitted very little from tennis courts. These communities, like most other apartment communities in Seoul, currently lease tennis courts to private firms.

People using elevators for moving in or out are easily monitored by residents or guards, so that they are forced to use cargo-lifts instead of elevators. Cargo-lifts may not be used for other purposes. Although each high-rise building has one or two cargo-lifts, their operation requires at least two authorized personnel and a fairly large amount of electric power. The management office charges 10,000 to 20,000 won (about \$13-27) per day for the use of cargo-lifts. Cargo-lifts are installed on the roof and are operated outside the building,

so that their use is prohibited at night or in the heavy rain. If people need to move in or out at night or in the heavy rain, the management office can allow them to use elevators. In this case, they are charged the same as for the use of cargo-lifts.

(3) Miscellaneous restrictions

All six communities impose a variety of miscellaneous restrictions. They restrict speed on community streets to 30 kilometers per hour with speed bumps and posted limits. Many facilities for children's play also have weight limits. Security guards usually stop their use by adults. Trash so large that the container lid will not close is not to be placed in garbage containers. RCA official buildings and senior centers may not be used after a designated time, usually 10 p.m. Although access to official community buildings is open to any resident during the day, however, use of rooms and supplies is not available to ordinary residents, but only to managers, management employees, and assembly members, or senior residents.

c. Use regulation by external authorities

Communities also have the option to involve external authorities in use regulation. According to the bylaws of the six communities, the assembly chairperson is authorized to stop illegal behavior by force or report it to appropriate governmental agencies. In general, persons who intentionally destroy common facilities or conduct illegal business, such as prostitution, can be reported to the police. Because the PDCHM prohibits alteration of the architectural design of apartments without prior approval by the Minister of Construction, as well as keeping pets in apartments, these behaviors are illegal, not just contrary to community rules. Communities can report households that have altered the architectural design of their apartments without approval by the Ministry of Construction to the *gu* office. These households can be

fined. According to interviews with officials in the six communities, no residents in the six communities have ever been reported to the police for their violation of community rules or public law. In general, however, throughout Seoul many apartment owners, who arbitrarily have altered the architectural design of their apartments, have been reported to gu offices and fined.⁵

If a resident persistently does serious harm to neighbors in spite of repeated warnings by the management office, the community may apply to local courts for compulsory sale of the apartment by auction. This rule is supplied in the Act on Ownership and Management of Common Housing, together with the Housing Development Promotion Act (Park and Seo, 1989? Park and Kim, 1991). According to this act, one representative owner, instead of all owners of the community, is the plaintiff; the defendant is prohibited from participating in the auction. No instances of the compulsory sale of apartments by local courts were found in the six communities.

4. Potential Institutional Problems Related to Regulation of Use

The six communities generally have two institutional problems related to use regulation. First, although responsibility for use regulation is delegated to management offices, it is actually very difficult for them to regulate individual resident behavior. Although security guards are mostly responsible for enforcing regulations, they are very discreet and polite in approaching residents due to their relatively low social and economic status. They usually bow to residents; no imperative way of speaking to residents is permitted by custom; and physical force is out of the question.

In particular, security guards located in apartment buildings are strictly monitored, evaluated, and privately paid tips by building residents, so that it is very rare for security guards to single out individual residents for regulation, except in the case of children. A

strong sense of accountability on the part of guards to residents inhibits and somewhat weakens enforcement. At the same time, however, it encourages the accommodation of resident use through effective management of use situations.

Second, the lack of coercive means for regulation, such as fines, is another institutional problem in use regulation. Even though police or local courts can be involved in use regulation, none of the six communities have ever used more than warning or persuasion with persistent violators. As long as residents are not sanctioned, they are able to resist compliance. If regulation by the management office does not work, however, neighbors usually get involved in obtaining compliance from violators. In all six communities, the second approach works. For example, residents in *Karak Halla* succeeded in driving pets out of the community after deciding in every *Ban sang hwe* on the same day no longer to allow pets. In *Karak Woosung*, residents get involved in monitoring parked cars that lack community stickers. The inability of the community to employ coercive sanctions inhibits and weakens community-level enforcement, but it encourages reliance on the building-level and on resident involvement. In this context, use regulation in the six communities occurs primarily at the building level and through the efforts of building residents.

5. Conclusion

Use regulations in the six communities are generally successful. Residents do not often resist regulation, even when their behavior is greatly restricted. For example, it is evidently inconvenient for residents to be unable to keep pets, install air-conditioners, or dry clothes because of community regulations. However, they usually comply with these regulations as long as other residents do so.

Conflicts among residents also are usually resolved easily and rapidly. In practice, only a few conflicts are reported to management

offices. Neither police nor local courts have been involved in resolution of conflicts arising in the six communities.

There are two sets of reasons for successful use regulation in these communities. First, regulation of use is facilitated by the following prerequisite conditions: (1) supply of sufficient amounts of common space and facilities at the development stage, (2) no increase of users since development, and (3) successful access control, i.e., less pressure on joint use.

Second, communities employ a diverse set of alternative regulations. In general, printed notices alone, such as newsletters or warning notes, are a weak means of controlling persistent violators, because they do not include a sanction. Communities thus seem to rely more on face-to-face conversations with violators for the purpose of persuading or, sometimes, shaming them. Mutual regulation by residents themselves, however, is even more important in the communities. Mutual regulation by acquaintances is quite effective in small groups. In practice, use regulation at the building or *ban* level is usually undertaken by building residents rather than by management offices. In *Ban sang hwe*, not only are operational rules formulated, but also conflicts among residents are expressed, discussed, and resolved. Regulations by residents, however, are based on unwritten social customs to which all residents are well accustomed, rather than on written regulatory codes.

Operational rules related to use regulation are formulated by communities and are enforced by residents themselves, as well as by management offices. Many conflicts are easily resolved among residents without the need for involvement by a third party. Conflict resolution in the six communities generally relies on mutual understanding and compromise among residents, rather than administrative and management procedures controlled by the management office. Residents in these communities "self-regulate" in using the commons.

In particular, the relative success of use regulation at the building level in the six communities derives from the following four factors: successful access control at the building level; control of managers and security guards by building residents; customary norms in operation; and the relatively small scale of regulation. First, access control is more effective at the building level than at the community level. In high-rise buildings, access control is particularly strict. Access to buildings by outsiders is effectively constrained, so that less pressure on joint use exists at the building level. Second, managers and security guards are under the control of residents. Because guards are accountable to residents, they have incentives to accommodate all uses by residents, not simply to enforce rules. Third, customary norms in operation, particularly dominance by senior residents, are effectively applied to building residents for regulating resident behavior. Fourth, the relatively small scale of building-level regulation permits discretionary application of rules, instead of blanket restriction. Efforts to accommodate uses, therefore, can be made effectively at the building level.

D. Maintenance

1. Introduction

In addition to the individual efforts needed to maintain apartments, collective efforts are needed to maintain common spaces and facilities to preserve or increase the value of apartments. Much of the attention of communities, therefore, is allocated to monitoring, inspecting, cleaning, repairing, replacing, and reconstructing facilities in apartment buildings.

Out of 438 apartment buildings developed in Seoul from 1965 to 1973, 184 apartment buildings (42.01 %) had been torn down and redeveloped by July, 1987. Most apartment communities in Seoul did not have formal organizations for collective action—RCAs—until the *Banpo* Apartment Community 1 was developed by KHC in 1974 (*Hyundai Jutae*, 1987). Of the communities developed since 1974 and to which the PDCHM applies, none have been redeveloped to date—18 years later.

As discussed earlier, common-pool resources and facilities vary according to the degree to which their degradation can be monitored and the ease with which a degraded commons can be renewed. The degradation of some types of common facilities in apartment communities, such as community streets or the exterior walls of buildings, is easy to monitor. However, the decay of hidden facilities like tubes, wires, or underground facilities is quite difficult to detect, unless they are regularly monitored by certified professionals. In addition, apartment buildings and major facilities are very expensive to repair or replace once they have lost their operational capacity. It is nearly impossible to do so with financing only by current residents. Maintenance activities to slow the deterioration of facilities and to prevent apartments from losing their market value are needed in any community.

Maintenance activities in apartment communities in Seoul are classified administratively as routine and special, as prescribed by the

PDCHM. "Routine maintenance" is generally undertaken daily, weekly, monthly, quarterly, semi-annually, or annually, on the basis of the maintenance schedules prepared by the management office.' It includes not only preventive maintenance activities, but also repair and replacement. Supply systems for heating, water, and natural liquified gas generally compose a majority of routine maintenance activities.

"Special maintenance" refers to replacement of major facilities, such as boilers, oil tanks, water tanks, pipes, or generators. Not only are these facilities too expensive for current residents alone to replace, but they provide a stream of benefits over the long term. Special maintenance is performed on the basis of long-term maintenance plans prepared by the management office and is financed by special maintenance funds to which residents contribute on a regular basis. Inspecting, cleaning, and repairing major facilities, however, are classified as routine maintenance, and financed from monthly fees.

2. Maintenance Activities

Maintenance of the grounds refers to work done on streets, sidewalks, parking lots, lawns, gardens, fences, playgrounds, parks, and trees; maintenance of apartment buildings, to hallways, stairs, lobbies, elevators, roofs, and basements; and maintenance of supply systems, to the water, heating, electricity, and LN6 line systems.

a. Maintenance of the grounds

Maintenance of the grounds in the six communities includes maintenance of the paved area, including occasional repair of potholes, cracks, and other damages to the pavement. It includes patching streets, sidewalks, and parking lots, but none of the six communities has ever resurfaced the whole paved area. In winter, snow and ice are removed. Cleaning services, such as sweeping and trash collecting, are performed in the paved areas every day. The communities inspect and

repair facilities on the grounds periodically. They keep the play equipment safe, replace street light bulbs, and repaint benches. Cleaning is one of major maintenance services in these facilities. The maintenance of tennis courts is the responsibility of the private agents who lease them. The maintenance of gardens, lawns, and trees includes cleaning, mowing, pruning and trimming, weed and pest control, fertilizing, mulching, and watering. The grounds and facilities in these communities are in good condition, partly because they are relatively less crowded and access by trucks or buses is strictly controlled.

b. Maintenance of apartment buildings

The maintenance of apartment buildings involves both exterior and interior maintenance. Procedures for roof maintenance are typical of exterior maintenance. The RCAs maintain the roof's water-resistance by inspecting them periodically and coating the surface if necessary. Repainting exterior walls is provided on long-term plans. Interior building maintenance includes regular elevator maintenance, repainting interior walls, and cleaning stairs, hallways, and lobbies. Due to the routine and frequent service provision based on maintenance schedules, apartment buildings in the six communities are in good condition.

c. Maintenance of the supply systems

Maintenance also must include supply systems for water, heating, electricity, and LNG. Because it is difficult to monitor these facilities, and it is very expensive to repair or replace them once they have lost their operational capacity, the communities employ engineers to inspect and clean these systems periodically, based on the maintenance schedules. While replacement of these systems is classified as special maintenance, inspection, cleaning, and repair are classified as routine maintenance by the PDCHM.

3. Types of Maintenance Services

The distinction between routine maintenance and special maintenance is an administrative classification prescribed by the PDCHM. In practice, routine maintenance includes inspection, cleaning, repair, and replacement. These different types of services are provided either separately or together.

a. Inspection and cleaning

Because maintenance activities are basically preventive in the sense that they may retard deterioration, they can and should be scheduled in advance. Precise and periodic inspection of facilities may prevent unexpected breakdowns. Moreover, common areas that are kept neatly cleaned indicate that the community is well maintained and that each apartment unit is also clean, making the community a pleasant place in which to live. The appearance of the community directly affects the current market value of each apartment.

The maintenance schedule for inspection and cleaning is proposed to the assembly by the management office. It includes annual, semi-annual, quarterly, monthly, weekly, and daily inspection and cleaning schedules and budgets for the year. Inspection and cleaning results are reported by managers to the assembly periodically. In addition, the professional management offices in *Olympic Village* and *Karak Halla* propose schedules and report to their central offices, *Hankook Housing Management Company*.

b. Repair and replacement

Repair and replacement are preventive if they are provided before facilities lose operational capacity; otherwise, they are provided on an emergency basis. Although repair and replacement are often supplied as emergency maintenance services, replacement services, in particular, are scheduled in advance in some cases. For example, street light bulbs,

boiler filters, and flowers and trees are replaced periodically, according to schedule.

Replacement of certain major facilities is classified as special maintenance. According to Article 23 of the PDCHM, every apartment community to which this decree applies must prepare long-term maintenance plans on major common facilities and collect reserve funds, so called "special maintenance funds," for replacing these facilities. These plans are generally made for common facilities, whose repair and replacement require a large amount of expense and which provide a stream of benefits over the long term. According to the decree of the Ministry of Construction, the facilities that must be financed from special maintenance funds, are generators, transformers, high-voltage cables, wattmeters, boilers, boiler-oil tanks, water tanks, pipes, and pumps.

4. Decision-Making Process

Although assemblies and management offices are the principal decision-makers in the provision of most maintenance services, various organizations within apartment communities are also involved in the decision-making process, particularly if maintenance services are large scale. The standard procedure for the provision of exterior repainting is illustrative:

- (1) Once repainting exterior walls has been discussed in the community, the management office proposes a repainting plan to the assembly and announces it to residents.
- (2) The assembly, *tong and ban* heads, women's association, and management office collect residents' opinions and express their opinions.
- (3) The repainting plan may be approved by a simple majority of owners, although this step is not always required. For large-scale projects that must be financed by special maintenance funds, such as repainting the exterior walls of all buildings, however, resident

approval is customarily obtained prior to assembly approval in the six communities.

- (4) The approval given in Step 3 is confirmed by a simple majority of assembly members. Even if Step 3 is omitted, the plan may be approved by the assembly's decision.
- (5) If the decision is affirmative, the management office selects private painting agencies through open bidding, and proposes them to the assembly.
- (6) The assembly approves the selection by a simple majority of its members. *Tong* and *ban* heads and the women's association influence decisions made by the assembly and management office.
- (7) The management office supervises painting agencies and reports the results to the assembly and residents.

5. Revenue and Expenditure

The revenues and expenditures for maintenance services differ between routine maintenance and special maintenance. The fundamental difference between the two types of maintenance is that expenditure precedes revenue in routine maintenance, while revenue precedes expenditure in special maintenance.

a. Routine maintenance

The maintenance schedule includes a budget for maintenance. However, revenues are raised, not according to how much is planned to be expended, but according to how much is actually spent. In other words, revenues are collected *ex post* through monthly mandatory fees, and levied so as to equal expenditures.

Expenditure limits for maintenance services, that is, amounts specified in the bylaws that can be spent at the general manager's discretion without prior assembly approval, are strictly followed. Expenditures over a designated amount must be approved in advance by the

assembly. The expenditure limits vary among the six communities. For example, in *Changmi*, expenditures under 500,000 won (about \$700) do not require approval by the assembly. In *Olympic Village*, only projects over one million won or purchases over 500,000 won must be approved in advance by the assembly. In addition, projects over five million won and purchases over three million won must be approved by the central housing management office, prior to assembly approval. Open bidding requirements also differ among the communities. In *Changmi*, contracts over one million won must be made through open bids. In *Olympic Village*, projects over two million won or purchases over one million won must be decided through open bids.

The assembly's approval of the budget is equivalent to approval of the schedule for maintenance services. But, even with meticulous maintenance schedules, unexpected repairs and replacements are certain to be needed. For example, due to a storm or flood, there may be a need for emergency care for fences, trees, or gardens. In an emergency, maintenance services can be approved by the assembly after expenditure. In the six communities, emergency maintenance services are customarily allowed within 10 percent of the total budget for routine maintenance services.

b. Special maintenance funds

There are two options provided by the PDCHM for calculating the assessments assigned to each apartment unit for the deposit of special maintenance funds.

Option A: Communities levy assessments on every apartment unit for special maintenance funds through monthly mandatory fees. The amount of the assessment (A) assigned to each apartment unit with respect to each common facility is calculated on the basis of unit size as follows:

$$A = \frac{\text{total amount for maintenance during the planned period}}{\text{total floor size of the community} \times 12 \times \text{planned years}} \times \text{unit size}$$

Option B: If the community fails to adopt a long-term maintenance plan, the community's monthly deposit for special maintenance funds must be at least 3 percent, but no more than 20 percent, of the monthly average of the total expenditure for routine maintenance, elevator maintenance, and common heating and hot water supply in the previous year. (In the case of *Chamsil-I*, only the expenditure for routine maintenance is taken into account to calculate the special maintenance funds, because it has no elevators nor heating and hot water facilities.) All six communities choose Option B instead of levying on the basis of long-term maintenance plans.⁶ The assessment assigned to each apartment unit is calculated as follows:

$$a \left[\frac{R+E+H}{12} \times \frac{\text{unit size}}{\text{total floor space}} \right]$$

$$0.03 \leq a \leq 0.20$$

R: expenditures for routine maintenance in the previous year
 E: expenditures for elevator maintenance in the previous year
 H: expenditures for heating and hot water supply in the previous year
 total floor space: total floor size of the community

Thus the amount paid by each household depends on the size of their apartment unit. The revenues from user charges must also be deposited in special maintenance funds. The special maintenance funds must be deposited in the bank designated by the Ministry of Construction, i.e., the Korea Housing Bank. The use of these funds requires the approval of both the RCA assembly and the mayor of Seoul, and its accounting is audited both by CPAs and the *gu* office once per year.

c. Comparative analysis of maintenance expenditure

Maintenance expenditure is composed of all expenditures for inspecting, cleaning, repairing, and replacing services for the common areas within the community. The expenditure includes both salaries for maintenance workers and costs for maintenance equipment and materials. If a contract is made for maintenance services, payments to private agencies are included in maintenance expenditure. The building maintenance expenditure differs between high-rise buildings and low-rise buildings, due to elevator maintenance. The maintenance expenditure also differs between individually-heated communities and centrally-heated communities, because heating systems compose a large portion of maintenance. In comparing routine maintenance expenditures, effectiveness of maintenance cannot be measured by the size of expenditure alone. For example, high maintenance expenditure may indicate less deferred maintenance, while low maintenance expenditure may imply efficient maintenance. Comparison of expenditures, therefore, does not necessarily reflect substantial variations by community characteristics.

The routine maintenance expenditure includes both salaries for maintenance employees and costs for maintenance equipment and materials (see Table 5.5). The total expenditure for routine maintenance correlates positively with size of community except for *Chamsil-I*. *Chamsil-I* does not have a common heating system. Expenditures per *pyong* are smaller in large communities and larger in small communities, perhaps reflecting economies of scale. In a related vein, the percentage of the total community expenditure devoted to routine maintenance is also negatively related to community size, except for *Chamsil-I*. (The total community expenditure of *Chamsil-I* includes no electricity, water, and heating, unlike the other five communities.) The total number of maintenance employees appears to be large in high-rise communities, while small in low-rise communities, but the average

Table 5.5. Expenditures for routine maintenance services

Community	Units	Employ	Units/E	Exp	Exp/p	Dev't	% Budg
Olympic	5,540	78	71	807,340	3.46	1988	8.35
Chamsil-I	3,720	14	266	233,440	4.80	1976	45.65
Changmi	3,402	42	81	609,180	4.89	1979	14.37
Halla	900	8	113	105,630	7.73	1985	14.20
Woosung	838	15	56	167,470	7.63	1986	17.28
Chamsil-C	730	9	81	104,560	7.54	1976	26.56

The expenditure of Halla is the data of the 1989 fiscal year.

Employ: number of maintenance employees

Units/E: number of apartment units per maintenance employee
(= Units / Employ)

Exp: the expenditure for routine maintenance services (in dollars)

Exp/p: Exp per pyong (= Exp / total floor size in pyong)

Dev't: year of development

% Budg: percentage in the total expenditure of the community

number of apartment units per maintenance employee appears to be small in high-rise communities, while large in low-rise communities.

The PDCHM distinguishes both cleaning and elevator maintenance from routine maintenance. No communities, therefore, include either cleaning services or elevator maintenance services in calculating the monthly mandatory fees for routine maintenance. Because cleaning and elevator maintenance are important components of preventive maintenance, however, they are discussed in this section.

Cleaning expenditure includes both salaries for cleaning workers and expenses for cleaning materials in *Chamsil-I*, *Chamsil-C*, and *Changmi*, where cleaning services are produced in-house. In *Olympic Village*, *Karak Halla*, and *Karak Woosung*, cleaning expenditure is equivalent to the payments to private cleaning agencies. The 1990 expenditures for cleaning services in the six communities are compared in Table 5.6. According to this table, the expenditure is related both to community size and to production arrangements. (More details about the production arrangements for cleaning services are discussed in the following chapter.) Expenditure per *pyong* appears to differ between large and small communities as well as between the two different production arrangements. More specifically, for large communities, production by private agencies is less expensive per *pyong*. For small communities, in-house production is less expensive per *pyong*. The primary reason for the relatively small cleaning expenditure in *Chamsil-C* is that the community does not provide cleaning services in apartment buildings. (The production arrangements for cleaning in *Chamsil-C* are discussed in Chapter VI.)

Elevator maintenance expenditure in *Olympic Village* includes both salaries for elevator engineers and costs for equipment and materials, while it is equivalent to the payments to elevator companies in *Changmi* and *Karak Woosung*. The total elevator maintenance expenditure appears to be positively related to the number of elevators: *Olympic Village*

Table 5.6. Expenditures for cleaning services

Community	Units	Grounds	Exp	Exp/p	Dev't	Product
Olympic	5,540	163.64	380,000	1.63	1988	contract
Chamsil-I	3,720	45.88	80,500	1.66	1976	in-house
Changmi	3,402	48.68	215,700	1.73	1979	in-house
Halla	900	10.60	46,600	3.41	1985	contract
Woosung	838	8.67	40,000	1.82	1986	contract
Chamsil-C	730	22.01	11,600	0.84	1976	in-house

Grounds: size of the grounds (in acres)

Exp: the expenditure for cleaning services (in dollars)

Exp/p: Exp per pyong (= Exp / total floor size in pyong)

Dev't: year of development

Units: number of apartment units

Product: type of production arrangement

with 207 elevators spent \$127,000, while *Karak Woosung* with 14 elevators spent \$9,300, in 1990 (see Table 5.7). The expenditure per elevator is positively related to both community age and the number of residents per elevator: *Olympic Village* developed in 1988 spent \$613 per elevator, while *Changmi* developed in 1979 spent \$1,168, in 1990; furthermore, the more scarce elevators are, the more expenditure per elevator.

The revenue for special maintenance is equivalent to monthly assessments for depositing special maintenance funds (see Table 5.8). According to this table, except for *Chamsil-I* and *Chamsil-C*, larger communities deposited more funds than smaller communities, while the deposit per *pyong* appears to be smaller in larger communities. *ChamsilTM I* and *Chamsil-C* invest in deposit per *pyong* at the lowest level. The government requirement of a minimum level of investment as a percentage of maintenance expenditures leads to variation in investment per *pyong*.

The low level of deposit in *Chamsil-I* and *Chamsil-C* also derives from another reason. According to the Housing Development Promotion Act, apartment communities may not be redeveloped until 20 years have passed since initial development.⁷ Redevelopment of these two communities was attempted before the 1988 Summer Olympic Games by the metropolitan government, on the ground that they do not match their neighborhood. Because these communities were developed in 1976 and land value in the neighborhood has greatly increased, there are already many rumors that they will be redeveloped in 1996. For these reasons, residents have incentives to pursue the increase of apartment value by supplying new apartments through redevelopment, rather than to deposit special maintenance funds.

Total maintenance provision includes routine maintenance, cleaning, elevator maintenance, and special maintenance. The total maintenance expenditures per *pyong* of the six communities are compared in Table 5.9. According to this comparison, *Olympic Village* spent the least per *pyong* for total maintenance provision, while *Karak Halla* spent

Table 5.7. Expenditure for elevator maintenance

Community	number of elevators	res/elev	total expend	T exp/elevator	T exp/pyong	Development
Olympic	207	27	127,000	613	0.54	1988
Changmi	41	83	47,900	1,168	0.38	1979
Woosung	14	60	9,300	664	0.42	1986

res/elev: number of residents per elevator

total expend: total expenditure for elevator maintenance (in US dollars)

T exp/elevator: total expenditure per elevator (= TE / # of E) (in US dollars)

T exp/pyong: total expenditure per pyong (in US dollars)

Development: Year of initial installation

Table 5.8. Annual deposit of special maintenance funds

Community	Number of units	Annual deposit of the funds	Total deposit per pyong	Development year
Olympic	5,540	70,874	0.30	1988
Chamsil-I	3,720	3,112	0.06	1976
Changmi	3,402	43,551	0.35	1979
Halla	900	15,236	1.11	1985
Woosung	838	12,177	0.56	1986
Chamsil-C	730	888	0.06	1976

All monetary amounts are reported in US dollars.

the most per *pyong*, whether total maintenance includes elevator maintenance or not. Except for *Chamsil-I*, the percentage of total community expenditure devoted to maintenance is somewhat negatively related to community size—large communities spent less, whether total maintenance includes elevator maintenance or not. This is consistent with an economy of scale in the maintenance of communities.

6. Institutional Problems in Maintenance

a. Deferral of maintenance

Managers interviewed claim that their communities tend to defer maintenance. In *Changmi*, although the management office found mechanical defects in 11 out of 39 transformer switches, the assembly did not approve their replacement immediately, because none of them had stopped working at the time. In *Chamsil-C*, although the water pipes of a particular building needed to be repaired, the assembly refused to approve their repair due to the expense.

Because of the assemblies' efforts to prevent an excessive increase in mandatory fees, maintenance services are sometimes deferred if the expected maintenance cost is relatively high compared to the financial capability of the community. Deferral of maintenance sometimes derives from the inability of assemblies to understand technical problems related to maintenance. Assemblies, for example, may ignore the technical judgments of engineers on the need for repair or replacement, as long as breakdown is not imminent. Unless operational problems clearly exist, assemblies often refuse to provide repair or replacement services if the costs are burdensome. Assembly members attempt to reduce the short-term, out-of-pocket costs for maintenance services. In general, deferral of maintenance appears often to result from a difference of opinion between assemblies and managers.

Maintenance services are sometimes not deferred indefinitely, but simply delayed. Expenditure limits often delay maintenance. No

Table 5.9. Total maintenance expenditures per pyong

Community	Units	Heating	Ele	Dev't	TME/p	TE %	-EME/p	-E %
Olympic	5,540	central	yes	1988	5.93	14.33	5.39	13.01
Chamsil-I	3,720	individ	no	1976	6.52	62.01	6.52	62.01
Changmi	3,402	central	yes	1979	7.35	21.62	6.97	20.49
Halla	900	individ	no	1985	12.25	28.37	12.25	28.37
Woosung	838	central	yes	1986	10.43	32.64	10.01	31.68
Chamsil-C	730	individ	no	1976	8.44	29.73	8.44	29.73

Units: number of apartment units

Heating: heating system

individ: individual

Ele: Are there elevators?

Dev't: year of development

TME/p: total maintenance expenditure per pyong (in dollars)

TE %: percentage of total maintenance expenditure in the total community expenditure

-EME/p: total maintenance expenditure per pyong minus total.elevator maintenance expenditure per pyong (in dollars)

-E %: percentage of total maintenance expenditure minus total elevator maintenance expenditure in the total community expenditure

assembly in any of the six communities has ever increased the amount of spending allowed at the general manager's discretion. Compared to apartment prices in Seoul, which have increased about ten times during the past decade, expenditure limits have become more constraining. As a result, even small and simple maintenance services require complicated administrative procedures including assembly approval.

In some cases, the incentive to defer maintenance services derives from the method of levying mandatory fees for maintenance services. All the communities levy general charges for maintenance on all apartment units. Even maintenance services whose benefits are restricted to a single apartment building are financed by mandatory fees levied community-wide. For example, in *Karak Woosung*, composed of 7 apartment buildings, the costs for maintenance services that are provided to a single building have to be shared 1/7 by each building. By comparison in *Olympic Village*, with 122 apartment buildings, the costs for similar maintenance services can be spread over more buildings and households. Even if a maintenance project is provided only to a single building, each building in this community pays only 1/122 of its cost. In fact, many complaints about the provision of maintenance services for a particular building or area are reported to management offices through *Ban sang hwe* in small communities. In consequence, small communities tend to defer maintenance until all buildings have similar problems, but community-wide maintenance services are more readily provided.

No specific services for particular buildings, such as cleaning the water tanks of particular buildings, pruning or fertilizing particular gardens, or repairing particular elevators, were provided in any of *Karak Halla*, *Karak Woosung*, or *Chamsil-C* in 1990. If a facility of a particular building needs to be repaired, the same type of facilities in other buildings are first inspected. For example, in *Karak Woosung*, if a certain operational problem is found in a particular elevator, all other elevators are usually inspected. In fact, equal

amounts were spent on each elevator in 1990. In *Chamsil-C*, all gardens were uniformly taken care of by the management offices same flowers, same trees, and same fertilizing. In *Karak Halla*, the majority of the maintenance services were repair of supply systems located over the community. In contrast, many maintenance services for particular buildings were frequently provided in *Olympic Village* and *Changmi*. On the other hand, in large communities, maintenance services are often provided at the building or block level as necessary.

b. Corruption

Corruption of managers is also a problem arising from maintenance services. The assemblies and management offices of large communities, in particular, deal with large budgets. Large communities generally rely on a small number of board members and managers. In fact, most cases of corruption in the 1980's were found in large-size communities, such as *Chamsil Chugong* Apartment Community 5 with 3,930 units,⁸ *Shin Banpo* Apartment Community 4 with 2,640 units,⁹ or *Doonchon* Apartment Community with 5,940 units.¹⁰ Drawing on newspaper accounts, three types of corruption occur: (1) department or section managers embezzle some portion of the community budget; (2) general managers receive side payments from private firms awarded contracts; and (3) chairpersons or treasurers and accounting managers cooperate to manipulate the balances of the community accounts. The cases have been generally discovered through police investigation upon requests by residents.

A related problem is monitoring performance in maintenance services. Residents and assembly members monitor both the management office and private service agencies. Tong and *ban* heads and the women's association are also quite active in monitoring service production. The management office monitors service production by private service agencies through security guards and management employees in charge. However, managers are generally very reluctant to report poor

performance in maintenance to either residents or the assembly, because they do not want to expose the management office itself to investigation. Central housing management agencies are also responsible for monitoring performance, but they also have incentives to hide poor performance by its management offices in order to keep a good reputation in the housing management business.

When residents and the assembly attempt to monitor performance, they often have difficulties, due to a lack of sufficient technical knowledge. For this reason, *Chamsil-C* and *Changmi* have organized engineering committees composed of assembly members who are knowledgeable of engineering for the purpose of monitoring the management office more effectively.

c. Problems in special maintenance

There are two levels of incentive structure related to special maintenance. One refers to the benefit from long-term maintenance, and the other refers to the use of special maintenance funds. Individuals do not receive short-term benefits from community expenditures for long-term maintenance. Benefits instead go primarily to future residents, not current residents. At least 30 percent of the residents of apartment communities change their place of residence annually (Seoul Metropolitan Government, 1990). Table 5.10 shows relatively high moving rates in Seoul, *Songpa-gu*, and *Chamsil 2-dong* in 1989. Communities, therefore, have incentives to minimize expenditures for long-term maintenance.

Tenant-residents, in particular, may more often oppose expensive and/or long-term maintenance services. Because special maintenance services are aimed at the preservation or increase of apartment prices rather than the convenience of living, tenants are even less cooperative with their provision.

The special maintenance fund required by the PDCHM is designed to

Table 5.10. Moving rates in Seoul, Songpa-gu, and Chamsil 2-dong in 1989

	Population	Movers-in	Movers-out
Seoul	10,576,794 (100.00 %)	3,049,117 (28.83 %)	2,893,215 (27.35 %)
Songpa-gu	625,509 (100.00 %)	264,967 (42.36 %)	186,810 (29.87 %)
Chamsil 2-dong	17,991 (100.00 %)	4,918 (27.34 %)	5,212 (28.97 %)

Source: Seoul Metropolitan Government. 1990. Seoul Statistical Year Book, Vol. 30.

address this incentive structure. Instead of requiring only those residents who happen to be members of a community to pay for a major repair or replacement project, the fund attempts to distribute this responsibility evenly across all members at all points in time. In any given year, the member of a community would have incentive to shirk, by withholding their contribution to the fund. The incentive structure is therefore one that depends on mandatory contributions to the fund enforced by officials external to the community.

Consistent with this incentive structure, the assemblies of all six communities levy the smallest assessment they can on each apartment unit. Although Option B is permitted only on a temporary basis, all six communities choose Option B and deposit the least amount allowed. They choose Option B both because it allows much lower assessments and because it is very costly to prepare long-term maintenance plans for all major common facilities, as required by Option A. *Gu* offices do not have effective means to sanction apartment communities even if Option B is continued indefinitely.

In addition, communities are required to deposit the revenues from user charges in special maintenance funds. But, they often deposit the revenues from user charges in general purpose accounts instead. According to the 1990 annual investigation of apartment communities by the *Songpa-gu* office, all six communities misused user-charge revenues by depositing them in accounts other than special maintenance funds.

Once a special maintenance fund has been deposited, an entirely different incentive structure is created. There are then incentives to deplete the fund—using the fund for short-term maintenance—thus robbing the future. A community has incentives to use as much of the special maintenance fund for short-term maintenance as possible. Such a strategy would minimize the expenditure made by current residents for maintenance overall. Management offices of the six communities, therefore, sometimes make more withdrawals than actually required by

overestimating the budget and deposit the unused money in general purpose accounts. Those revenues that are diverted from special maintenance funds are sometimes used to provide additional compensation to managers and assembly members.

For this reason, legal constraints have been introduced to limit withdrawals from special maintenance funds. The management office must obtain the approval of the assembly and report to the *gu* office in order to make withdrawals. In addition, the accounts of special maintenance funds are audited by both independent CPAs and the *gu* office.

7. Conclusion

All six communities have some problems in providing special maintenance services. They have deposited only minimal amounts of special maintenance funds by choosing Option B (mentioned in the above) since they were initially developed. The *Songpa-gu* office strongly urged all six communities to make long-term maintenance plans and to collect the funds on the basis of Option A (mentioned in the above) during the 1990 annual investigation. No communities, however, have complied with these requests.

On the other hand, routine maintenance services in the communities are generally successful. Effective routine maintenance may depend on the following prerequisite conditions: (1) access control and use regulation, (2) technology, and (3) finance. First, unless access control and use regulation are undertaken, common facilities in apartment communities would be more crowded or depleted. As a result, their maintenance may cost more. As discussed in the previous sections, both access control and use regulation in all six communities are fairly effective. Second, the communities organize management offices for the provision and production of maintenance services. Management offices employ qualified engineers and keep appropriate equipment as the PDCHM requires, and seem to be mostly engaged in maintenance activities.

Considering that management offices are often called "maintenance centers" in Korea, management offices in apartment communities are mostly engaged in maintenance activities. Third, maintenance activities are financed by monthly mandatory fees. No communities have serious difficulty in collecting mandatory fees. All six communities, therefore, appear to satisfy the three prerequisite conditions and to perform maintenance services as scheduled. In the six communities, routine maintenance is successful, but special maintenance, i.e., deposit of special maintenance funds, is not as successful.

To conclude, the six communities are able to act collectively to provide routine maintenance services at appropriate levels by governing themselves. On the other hand, they are able to act collectively to provide special maintenance services only by depending on external authorities.

E. Conclusion

Access control, use regulation, and maintenance, all are successful in the six communities. According to the findings of this study, all six communities are much less crowded than their neighbors, though offering many incentives for people to gather, and are perceived as safe places to live. Diverse types of uses are well accommodated within the communities, and conflicts in use among residents are resolved easily and rapidly without recourse to external authorities. All common areas and facilities are monitored, inspected, cleaned, repaired, and replaced periodically as scheduled by management offices.

In undertaking access control, use regulation, and maintenance services, the six communities not only formulate operational rules and enforce them, but also employ various means in resolving collective-action problems. In general, access control and maintenance are undertaken at the community level, while use regulation occurs primarily at the building level. They employ managers, engineers, and security guards, publish newsletters, contact individual residents and households, monitor all common spaces and facilities, and, occasionally, get external authorities involved.

The communities incur costs for all types of benefits to be gained. The costs are composed of the out-of-pocket costs for employment, purchase, and contracts and various types of inconveniences. The out-of-pocket costs are plain to measure for maintenance, but difficult to do for access control or use regulation. Many inconveniences are offset by the benefits to be gained from collective-action. The communities make various physical and institutional arrangements in the efforts to save the costs. In particular, they attempt to manage the overall collective-action situation, rather than simply enforcing rules. Institutional arrangements related to various community services will be discussed in detail in the next chapter.

Notes

1. In addition to access control, they receive postal packages on behalf of residents, care for plants of residents during long absence, and control parking lots. Access control is only one of their tasks as a building "office."
2. The number of residents is estimated by multiplying the number of apartment units by 4.5.
3. In a related vein, in *Eunma* Apartment Community located in *Kangnam-gu*, women in the prostitution business have been evicted from the community by neighbors for trivial misbehavior, such as untidy dress or the use of vulgar language on elevators.
4. The use of cars in Seoul has exploded during the last decade. The number of cars in Seoul increased from 377,220 in 1984 to 991,290 in 1989 (Seoul Metropolitan Government, 1990). This trend has continued.
5. [Chung-Ang Ilbo] Daily News, July 29, 1992.
6. Here is an example of a long-term plan for special maintenance. Because none of the six communities makes long-term maintenance plans, the case of *Banpo* Apartment Community located in *Kangnam-gu* is shown below (Park and Kim, 1991: 285):

Facility	Sustainable years	Total expenditure	Annual deposit	Monthly deposit
high-voltage cable	30	24,848,705	828,290	69,024
transformer	17	57,138,400	3,361,082	280,090
generator	16	18,918,900	1,182,431	98,536
wattmeter	5	16,752,208	3,350,662	279,222
boiler-oil tank	30	10,560,000	352,000	29,333
water tank	25	67,393,458	2,695,738	224,645
boiler	15	126,885,000	8,459,000	704,917
pipe	15	40,895,734	2,726,382	227,199
pump	10	19,879,035	1,987,904	165,659
Total Amount		383,272,540	24,943,489	2,078,624

All monetary amounts are reported in won. The annual deposit is determined by dividing total expenditure (for replacement) by the number of sustainable years.

7. The standard procedure for the redevelopment of apartment communities is as follows:

- (1) Designation of a community as a redevelopment area by the metropolitan government.
- (2) Organization of the redevelopment committee by 5 to 20 apartment owners.
- (3) Decision on redevelopment by a two-thirds majority of community members:
- (4) Selection of the agent for redevelopment through open bids.
- (5) Establishment of the bylaws and detailed plan for redevelopment.
- (6) Establishment of the redevelopment association by all community members.
- (7) Application for redevelopment permit to the metropolitan government.

8. [Chosun Ilbo] Daily News, April 15, 1984.
[Chosun Ilbo] Daily News, April 16, 1984.
[Dong-A Ilbo] Daily News, May 19, 1984.

9. [Hankook Ilbo] Daily News, March 7, 1987.
[Dong-A Ilbo] Daily News, March 12, 1987.

10. [Hankook Ilbo] Daily News, March 7, 1987.

Chapter VI
APARTMENT COMMUNITIES AS SERVICE PROVISION UNITS
IN THE PUBLIC ECONOMY OF SEOUL

The purpose of this chapter is to examine the role of the six communities as service provision units in the context of the public economy of Seoul. Service provision refers to collective choices that determine the types and amounts of community services, means of revenue-raising, and production arrangements. All six communities provide a variety of services: maintenance, security, cleaning, pest and rodent control, heating, and fire prevention. Many of these services are typically provided by local governments. The communities make collective decisions about whether to provide the services, how much to provide, how to raise revenues for providing the services, how much revenue to raise, and what arrangements to make for producing the services. In this sense, the apartment communities are basically service provision units.

A. Types of Community Services

All six communities studied provide maintenance, security, cleaning, pest and rodent control, heating, fire protection, gardening, sports facilities and programming, senior welfare, flood prevention, life safety, and environmental protection. Some of the services, such as maintenance, security, cleaning, and pest and rodent control, are mandated for provision by the community by the PDCHM. Maintenance and security services were described in Chapter V. This section describes cleaning, pest and rodent control, heating, fire, and garbage collection services.

1. Cleaning

The six communities provide cleaning services for common areas—the grounds, buildings, and the supply systems. Cleaning services in each apartment unit are provided by each household. Garbage collection services are not included in cleaning services of the community in this study, because these services are externally provided by *gu* offices and produced by either *gu* offices or private garbage collection agencies. However, trash collection from trash cans that are located on streets, sidewalks, hallways, and parks of the community is included in cleaning services.

Chamsil-C leaves the provision of cleaning services in part to individual residents with the intention of reducing mandatory fees for cleaning. In fact, both the total expenditure and expenditure per *pyong* devoted to cleaning by this community are the smallest among the six communities (see Table 5.6). Residents provide floor cleaning services at the *ban* level either by jointly employing cleaning workers or by producing cleaning services themselves. All *ban* in this community maintain the stairs and lobbies located in their *ban* boundaries free of littering or staining.¹

Running through *Olympic Village* is a stream not owned by the community, but is the property of the city. This stream, if polluted, would cause a negative environmental impact on this community. Although formal responsibility for cleaning the stream is not assigned to *Olympic Village*, this community provides cleaning services for the stream area within the community boundaries. The managers and employees of this community are engaged in the production of these services, together with the civil servants of the *Oryun-dong* office, on the 1st and 15th days of every month.

2. Pest and Rodent Control

The six communities provide pest and rodent control services in

both common areas and apartment units at least once a month. Insecticide is sprayed, and poisonous powder is placed, in designated places, such as gutters, sewerage system, garbage containers, basements, grass, and trees, as scheduled by management offices and approved by assemblies. In the summer, insecticide is sprayed in the open air. Communities provide pest and rodent control services for each apartment unit as well as in common areas.

Because pest control services may generally have external effects beyond the community boundary, they are also provided redundantly by governmental agencies. Spraying of insecticide by air is an example. If the delivery of services in an apartment community has positive external effects on its surrounding neighborhood, there may be governmental subsidies. With an one-time subsidy from the *Songpa-gu* office, for example, *Olympic Village* provided pest control services in a small woods located within the community, on the ground that the woods is close to the Olympic Park. The community newsletter indicates the tenuous nature of this relationship:

Sprinkled insecticide in our community woods. (May, 1990)

By the request of our community to the *Songpa-gu* office on May 7, 1990, 44 workers of the Department of Forest of the *gu* office sprinkled insecticide in our woods from May 25 to 28. Because this 20-acre woods is owned by our residents, it was very difficult for our representatives to get aid from the *gu* office. But, we insisted that many foreigners visit the adjacent Olympic facilities including the Olympic Park and our community after the 1988 Summer Olympic Games. According to one high-ranking official of the *gu* office, they gave a subsidy to us in terms of national interest, but would be able to give no more support to us. It is time that we make our own long-term plan for pest control in the woods....

Referring to Table 6.1, total expenditures for pest and rodent control services in the six communities are related to both the ground size and floor space of the community: communities with larger grounds and floors spent more than those with smaller grounds and floor space. However, both expenditure per *pyong* and expenditure per unit are

Table 6.1. Expenditures for pest and rodent control services

community	grounds	floor	units	exp	exp/u	exp/p	mgnt
Olympic	163.64	170.62	5,540	168,700	30.45	.72	pro
Halla	10.60	11.25	900	9,300	10.33	.67	pro
Chamsil C	22.01	11.31	730	6,800	9.32	.49	self
Woosung	8.67	18.23	838	6,700	8.00	.31	self
Changmi	48.68	101.69	3,402	25,500	7.50	.20	self
Chamsil I	45.88	39.65	3,720	4,200	1.13	.09	self

grounds: total size of the grounds

floor: total size of the floors

units: number of apartment units

exp: total expenditure for pest and rodent control services (in dollars)

exp/u: expenditure per apartment unit, i.e., average mandatory fees levied on each apartment unit

exp/p: mandatory fees levied per pyong. To calculate the amount of mandatory fees levied on 30-pyong apartment unit is to multiply this amount by 30.

mgnt: management type

unrelated to size indicators (including number of units), but differ between two different types of management system: professionally managed communities spent more than self-organized communities. For self-organized communities, smaller communities did spend more either per unit or per *pyong* than larger communities.

3. Heating

Heating services include both supplying heat to apartment units and supplying each unit with hot water. Among the six communities, *Chamsll-I* does not have a central heating system; therefore, heating services are not provided at the community level, but by each household, and, this community does not levy mandatory fees for heating. Elsewhere, heating expenditure includes both electricity and fuel used for operating boilers.

Table 6.2 compares the five communities (omitting *Chamsll-I*) with respect to expenditures for heating oil in the 1990 fiscal year. According to this table, total expenditures per *pyong* appear to be negatively related to community size: large communities generally spent less per *pyong* for heating oil than small communities. Expenditure per *pyong* is also related to building type: it is lower in high-rise buildings. There seems to be an economy of scale in the production of heating service.

4. Fire Protection

All six communities provide fire services, which include small-scale fire extinguishing, fire alarming, calling fire agencies, saving human life and property, and first-aid treatment. The communities regularly undertake fire drills on the day of civil defense practice, called "*Minbangwl Hullyon*," which is held nine times a year under the control of the Ministry of Domestic Affairs.²

Security guards posted in apartment buildings are responsible for

Table 6.2. Expenditures for heating oil

Community	Units	BLDG	Exp	Exp/p
Olympic	5,540	high-rise	1,688,000	7.22
Changmi	3,402	high-rise	855,400	6.86
Halla	900	low-rise	123,300	9.01
Woosung	838	high-rise	177,100	8.07
Chamsil C	730	low-rise	194,700	14.04

Chamsil-I is excluded from this table because it is not a centrally-heated community.

Units: number of apartment units of the community

BLDG: architectural type of apartment buildings of the community

Exp: total expenditure for heating oil (in dollars)

Exp/p: average expenditure per pyong for heating oil (in dollars)

(To calculate the average monthly fees for heating levied on each apartment unit, multiply this figure by the size of the unit in pyong.)

maintaining fire equipment, such as fire alarms, fire hoses, fire valves, and fire extinguishers, which are located in and around apartment buildings. Major inflammable facilities, such as boilers, fuel tanks, and electric systems, are monitored by those in charge of operation. Fire protection systems in apartment communities are checked by governmental fire agencies both regularly and without prior notification.

The fire services provided by the apartment community appear to be relatively effective, compared to areas other than apartment communities (see Table 6.3). *Songpa-gu* consists of 70.1 percent residential area, but only 1 out of 3 fires took place in residential areas from 1985 to 1989. Within the residential area, the housing stock consists of apartments (68.6 %), detached houses (25.0 %), and other type housing (6.4 %), but only 1 out of 3 fires in the residential area took place in apartment communities during the same period. In other words, only 1 out of 9 fires in *Songpa-gu* occurred in apartment communities, which compose about half of the district.

5. Garbage Collection

Garbage collection services in Seoul are provided by *gu* offices. *Gu* offices determine the types and amounts of garbage collection services and arrange for production. Decisions about the size of fees and how to levy them are made directly by the metropolitan government. Garbage collection fees are determined on the basis of both house size (unit size in apartment communities) and the amount of property tax, as prescribed by city ordinance.

Garbage collection services in apartment communities were provided by the communities themselves until 1990. Communities levied mandatory garbage collection fees and collected them monthly. The communities also made their own production arrangements. Because low-status apartment communities had less financial capacity to provide garbage

Table 6.3. Fire records in Songpa-gu

	Total cases	Cases in detached houses	Cases in apartments
1985	248	44 (17.74, 54.32)	37 (14.92, 45.68)
1986	301	74 (24.58, 68.52)	34 (11.30, 31.48)
1987	309	72 (23.30, 68.57)	33 (10.68, 31.43)
1988	213	47 (22.07, 71.21)	19 (8.92, 28.79)
1989	233	49 (21.03, 68.06)	23 (9.87, 31.94)

The left-hand side figures in the parentheses indicate the percentage of the total number of fires in Songpa-gu.

The right-hand side figures in the parentheses indicate the percentage of the total number of fires in the residential areas of Songpa-gu.

collection services compared to high-status apartment communities, however, *gu* offices have taken over garbage collection services in all areas since 1991.

Garbage collection fees differ between low-status communities and high-status communities because they are imposed on a graduated scale, whereas garbage collection costs do not differ as much between the two communities. Because garbage collection business is relatively less profitable in low-status communities, private producers have incentives to do business only in high-status communities. For this reason, garbage collection services tend to be produced by *gu* offices in low-status communities, but by private producers in high-status communities. At present in *Songpa-gu*, in fact, garbage collection services in low-status apartment communities, such as *Chamsil-I*, *Chamsil-C*, and *Karak Halla*, are produced by the *gu* office, while the services in high-status apartment communities, *Olympic Village*, *Changmi*, and *Karak Woosung*, are produced by private agencies.

The mode of collection is determined by the community. Three different ways of pick-up are found in the six communities. In *Chamsil-I* and *Chamsil-C*, garbage cans are placed in front of each apartment building entrance. Garbage workers move garbage from these cans to large containers located at the center of the community. These containers are removed by garbage trucks. In *Changmi*, *Karak Halla*, and *Karak Woosung*, garbage containers are located around buildings, and are picked up by garbage trucks. In *Olympic Village*, three or four garbage cans are located at underground entrances.

B. Revenue Raising

Regardless of the institutional or physical variations among apartment communities, all six communities are able to act collectively

to raise revenues. As discussed earlier, the six communities collect most revenues through monthly mandatory fees after making expenditures. No serious problems in collecting the monthly fees have been reported in any of the six communities. If necessary, apartment communities may coerce payment from habitually defaulting residents by requesting local courts to order the compulsory sale of their property (discussed later in this chapter).

There are two ways of revenue raising in the communities: mandatory fees and user fees. Mandatory fees are assessed in various modes, based on physical characteristics.

First, with respect to security services, the assessment of mandatory fees differs greatly between low-rise buildings and high-rise buildings because building guards are located only in high-rise buildings. *Chamsil-I*, *Chamsil-C*, and *Karak Halla* do not employ building guards, so that monthly mandatory fees for security services in these communities are levied community-wide on the basis of unit size. Here is the method of calculating the assessment (A) of monthly mandatory fees levied on each apartment unit in these low-rise communities:

$$A = \frac{\text{total expenditures for security services}}{\text{total unit size of the community}} \times \text{size of each apartment unit}$$

Each unit pays a proportionate share of total expenditures based on unit size.

On the other hand, *Olympic Village*, *Changmi*, and *Karak Woosung* locate security guards in each apartment building as well as at community entrances or on patrol. Thus, these communities add the expenditure (E1) for security services at the building level to the expenditure (E2) for community-wide security services. Here is the method of calculating the assessment (B) of monthly mandatory fees levied on each apartment unit in these high-rise communities:

$$B = \left[\frac{E1}{\text{total unit size of the building}} + \frac{E2}{\text{total unit size of the community}} \right] \times \text{size of each apartment unit}$$

The assessment of mandatory fees for heating services, however, does not distinguish between top floors and bottom floors, even though room temperatures differ between them. Because the hot water for heating is circulated from the top to the bottom in centrally-heated apartment buildings, indoor temperatures differ between top floors and low floors, particularly in high-rise buildings. In spite of the top-down circulation system, the method of assessing the mandatory fees for heating services is the same for all floors. Controversies over the heating charges between different floors sometimes occur in apartment communities.³ On the other hand, mandatory fees for hot water supply, unlike heating services, are levied on the basis of the amount of use just like electricity, water, and LNG charges.

The assessment of mandatory fees for cleaning services and pest and rodent control services is based only on unit size. The method of calculating the assessment of the mandatory fees on each apartment unit is the same as the method to calculate the amount (A) for security services.

C. Production Arrangements

The six communities make two different types of production arrangements: in-house production and contracting with private agencies. In general, the six communities choose in-house production for most services, except for pest and rodent control and pollution measurement.

1. In-house Production

Security, heating, and fire services are produced in-house. All six communities employ their own security guards and engineers. The six communities not only organize their own management offices, but also keep the equipment for service production, as required by the PDCHM. Management offices vary greatly in size; for example, *Olympic Village* employs 535 people, while *Chamsil-C* employs only 17 people. *Olympic Village* spent \$4,275,500 to operate the management office, while *Chamsil-C* spent only \$122,700, in 1990.

Regardless of organizational variation, apartment communities are service production units in the sense that they produce security, heating, and fire services by their own employees and facilities. Security services are produced primarily by security guards; heating services are produced by engineering departments or sections; fire services are produced by fire forces that are composed of managers and some employees under the direction of governmental fire agencies.

Besides these community services, routine maintenance services are produced in-house by maintenance personnel in all six communities. Cleaning services also are produced by the cleaning workers employed by the management office in *Chamsil-I*, *Chamsil-C*, and *Changmi*.

2. Production by Contract

Pest and rodent control is the most common community service produced by private agencies. None of the six communities produce pest and rodent control services in-house. Only licensed agencies are allowed by the government to produce pest and rodent control services. All six communities contract with private agencies for the production of these services, instead of employing licensed personnel and keeping the various types of equipment required. The contract generally is made for a package, which includes personnel, equipment, and materials.

Although personnel and equipment for these services are supplied

by private agencies, the assignment of personnel and their supervision are the responsibility of management offices. Their performance in common areas is generally monitored by security guards. Performance in each apartment unit is monitored by individual residents. The amount of service produced must be reported to *gu* offices every month.

Maintenance services are sometimes produced by private agencies. In general, if service scale or technology is beyond the capability of a single management office, or for some other reason in-house production is more costly than production by private agencies, communities make contracts with private agencies. Large-scale maintenance services, such as repainting exterior walls or replacing pipes, are usually produced by private agencies, because they are beyond the production capacity of the management office in any of the six communities.

However, not all large-scale maintenance services are produced by private agencies. Apartment communities sometimes request *gu* offices to help them with large-scale equipment, such as snowplows or water pumps, in case of emergency. Self-organized communities rely more upon *gu* offices for emergency services than professionally managed communities. The professional management offices of *Olympic Village* and *Karak Halla* sometimes use the personnel and equipment of the central agency for the production of maintenance services that are beyond their production capacity.

Elevators are maintained by licensed experts only. *Olympic Village*, which has a professional management office, employs experts recruited by the central agency. On the other hand, *Changmi* and *Karak Woosung*, which have self-organized management offices, contract with professional elevator companies instead of directly employing elevator engineers.

Cleaning services are also produced either by contracting with private agencies or by employing cleaning workers in the management office. Judging from the six communities, professionally managed

communities, such as *Olympic Village* and *Karak Halla*, contract for production, whereas self-organized communities, such as *Chamsil-I*, *Chamsil-C*, and *Changmi*, tend to organize production in-house. However, *Karak Woosung*, a self-organized community, also contracts with a private cleaning agency. In addition, the three communities that produce cleaning in-house are older, while the three communities that contract with private agencies are newer.

Cleaning workers in *Chamsil-I*, *Chamsil-C*, and *Changmi* are temporarily employed on a daily basis, because of limits on the maximum number of management employees prescribed by the community bylaws. All six communities attempt to reduce incidental expenses, such as health insurance fees or retirement grants, for regular employment by either using temporary employees or contracting with cheap private cleaning agencies.

Olympic Village contracts with three private cleaning agencies. These agencies provide cleaning services for buildings, streets, sidewalks, parking lots, gardens, parks, and playgrounds. Cleaning services for mechanical systems, such as boilers and pipes, and water and sewerage systems are regularly produced in-house by the mechanical engineering department. The chimney is cleaned by another private professional agency once a year.

Management offices monitor performance in cleaning services, even when cleaning workers are employed by private agencies. Above all, cleaning services are monitored directly by security guards and residents. Security guards are responsible for reporting poor performance in cleaning services to the management office.

It is customary in the six communities that management employees co-produce cleaning services on the streets, sidewalks, playgrounds, parks, and gardens on the first days of every month, in collaboration with other organizations within the community, such as the assembly, women association, senior association, tong and ban heads, and Saemaul

organizations. In case of emergency, for example, when it snows, heavily, not only cleaning workers but also security guards and other management employees take part in snow removal from streets and sidewalks.

D. Relationships to External Institutions

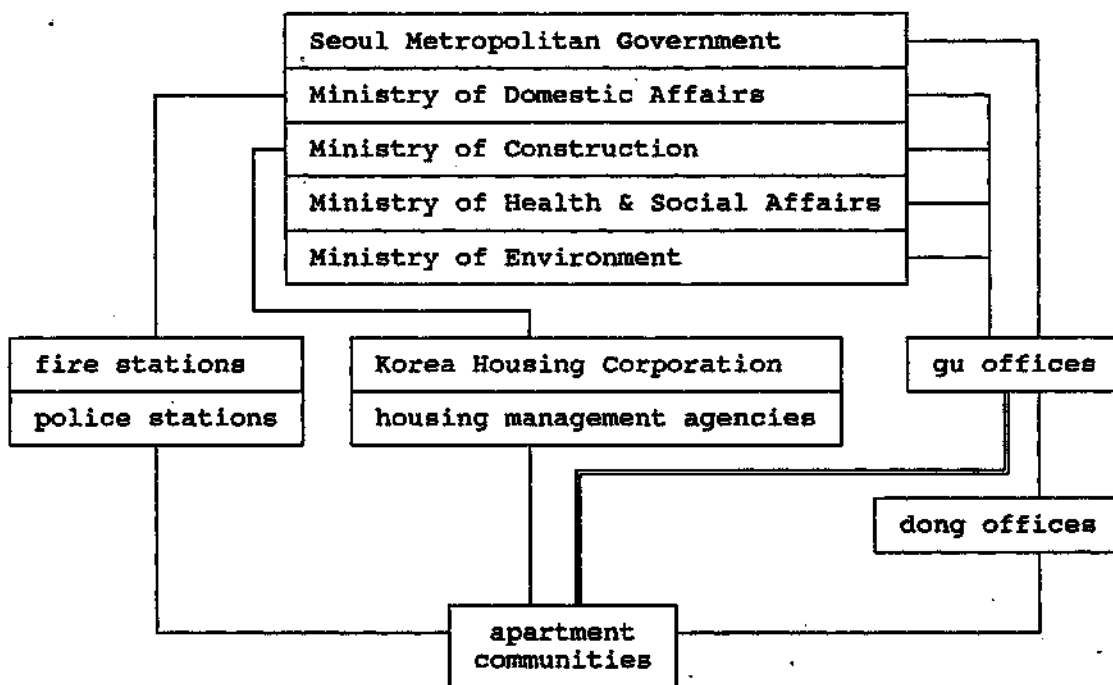
Although apartment communities are private organizations, they are created and governed under the terms of a complex legal structure and relate to a number of external institutions, including the metropolitan government of Seoul, *gu* offices, *dong* offices, the Ministry of Construction, the Ministry of Health and Social Affairs, the Ministry of Environment, police, fire stations, the Korea Housing Corporation, local courts, and private housing management companies. These relationships are depicted in Figure 6.1. All lines in this figure indicate two-way relationships. The double line between the apartment community and the *gu* office indicates that this relationship is the closest.

1. *Gu* Offices

The metropolitan government of Seoul is not related to apartment communities in a direct way. Instead, the mayoral authority is delegated to *gu* offices as administrative offices of the metropolitan government. The Ministry of Domestic Affairs, the Ministry of Construction, the Ministry of Health & Social Affairs, and the Ministry of Environment also delegate a part of their authority to *gu* offices, in that *gu* offices also function as administrative agents for these ministries.

For administrative purposes, *gu* offices have incentives to utilize management offices in monitoring residents because it is more convenient to control tens of management offices than controlling directly hundreds

Figure 6.1. Relationships of apartment communities to external institutions



of thousands of residents in the district. Although *gu* offices are charged with monitoring illegal alterations of the interior structures of apartments, most cases of illegal alterations are detected by management offices. *Gu* offices tend to exercise influence with management offices by selectively doing favors or by relaxing the strictness of rules in applying related law. For example, those management offices that are more cooperative seem to be less strictly audited by *gu* offices. The coercive sanctions that are actually imposed on apartment communities by *gu* offices are limited. According to the annual investigation of apartment communities by the *Songpa-gu* office, for example, there were no fines or prosecutions, only warnings and correction orders, issued to management offices in 1990.

2. *Dong* Offices

Compared to *dong* offices, the six communities maintain higher ratios of employees to residents (see Table 6.4). For example, *Olympic Village*, which is coterminous with *Oryun-dong*, has 90 management employees, while there are only 28 public servants in the *Oryun-dong* office. Table 6.4 does not include security guards among the employees of the communities; otherwise, there will be much greater differences between the communities and *dong*. Moreover, there are no assemblies at the *dong* level in Korea, while all apartment communities have representative assemblies.

Dong offices are responsible for residence registration. Every Korean must be registered in the *dong* office as soon as he or she moves in. Management offices often obtain data on their residents from *dong* offices by informally gaining access to the information on residence registration, although citizens are generally prohibited from accessing this information.

Dong offices are also responsible for the organization of *tong* and *ban* heads, women's associations, senior's associations, and *Saemaul*

Table 6.4. Comparison of employees
between apartment communities and dong offices

Community	Residents (R1)	Employees (E1)	E1 : R1
Olympic	24,930	90	1 : 277
Chamsil I&C	20,025	37	1 : 541
Changmi	15,390	70	1 : 220
Halla	4,050	13	1 : 312
Woosung	3,771	16	1 : 236
Dong	Residents (R2)	Employees (E2)	E2 : R2
Oryun	24,636	28	1 : 880
Chamsil 2	17,992	28	1 : 643
Chamsil 6	17,208	25	1 : 688
Karak 2	22,988	30	1 : 766
Karak Bon	18,019	26	1 : 693

Employees include neither assembly members nor security guards.

Olympic is located in Oryun-dong; Chamsil-I and Chamsil-C, in Chamsil 2-dong; Changmi, in Chamsil 6-dong; Halla, in Karak 2-dong; and Woosung, in Karak Bon-dong. It should be noted that Olympic, Chamsil-I&C, and Changmi are coterminous with dong, but Halla and Woosung occupy only a portion of their dong.

organizations. They are also charged with both organizing and mobilizing civil defense forces and performing monthly civil defense drills under the command of the Ministry of Domestic Affairs. At the same time of performing the civil defense drills, apartment communities undertake fire drills.

Dong offices are also responsible for monitoring and administering garbage collection services. In particular, garbage collection workers from the *gu* office are organized and assigned their duties by *dong* offices. The garbage collection fee levied on each household is assessed by *dong* offices as prescribed by city ordinance.

3. Government Ministries

Apartment communities are related to several government ministries, such as the Ministry of Domestic Affairs, the Ministry of Construction, the Ministry of Health and Social Affairs, and the Ministry of Environment. These ministries delegate most ministerial authority related to apartment communities to *gu* offices.

The Ministry of Domestic Affairs does not directly contact individual apartment communities. This ministry relates to apartment communities through their subordinate agencies, including police and fire stations, or *dong* offices. The six communities are also related to this ministry through civil defense systems organized at the community level by *dong* offices. Monthly civil defense practices at the *dong* level are also commanded by *dong* offices.

The Ministry of Construction also does not directly contact individual apartment communities. Ministerial approval of architectural alteration of interior apartment structure is delegated to *gu* offices. The Ministry of Construction is responsible primarily for making housing policy and law. The authoritative interpretation of housing law is also made by this ministry as well as by the metropolitan government. This ministry licenses professional housing management agencies and

supervises them. It also certifies housing managers.

Pest and rodent control services in apartment communities must be produced by professional agencies licensed by the Ministry of Health and Social Affairs. Apartment communities must report the extent of pest and rodent control services produced to *gu* offices every month.

The air pollution levels of boiler chimneys must be regularly measured and reported to the Ministry of Environment, which also sometimes measures air pollution levels in apartment communities without prior notification. Air pollution levels must be measured by professional agencies licensed by the Minister of Environment. All six communities contract with professional agencies and have them report the measurement results directly to the ministry. (*Chamsil-I* is not related to the Ministry of Environment because this community does not have chimneys for central heating.) In addition to contracting with private agencies for regular pollution measurement, *Olympic Village* and *Changmi* employ certified environmental engineers in their management offices with the intention of reducing pollution, because they use a lot of fuel and discharge a large amount of waste water.

4. Governmental Agencies

Apartment communities are related to governmental agencies, such as police, fire stations, and the KHC. These agencies do not delegate their authority to *gu* offices, so that the relationships of apartment communities to these agencies are more direct than to government ministries.

a. Police

Korean police have a dual structure. One is regular police; the other consists of night guards who are not regularly employed as police officers, but are commanded by the police. In the past, night guards were paid directly by the immediate residents. They are currently paid

by the Ministry of Domestic Affairs.

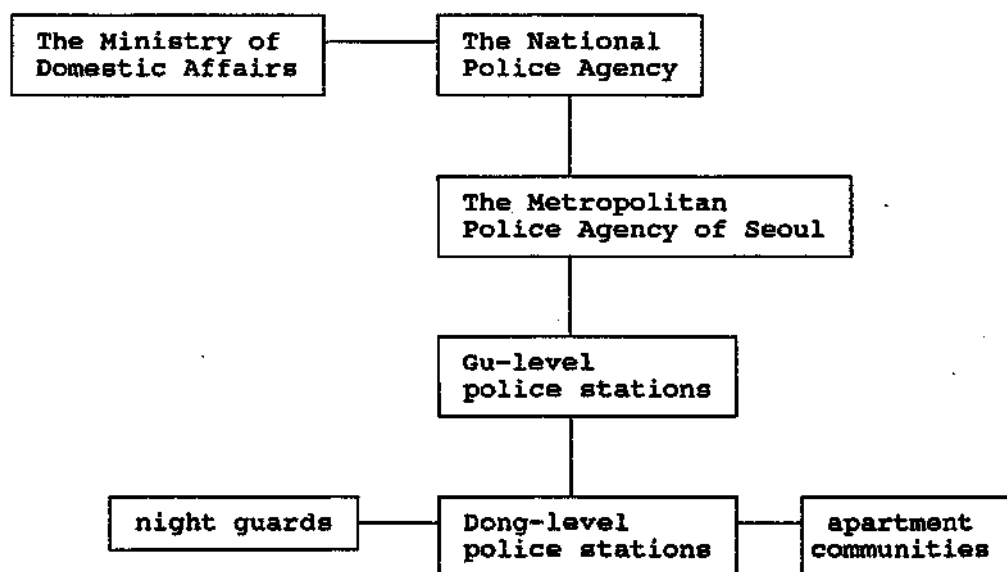
Although police, together with night guards, are responsible for security services, they are less engaged in patrol in apartment communities than apartment security guards. They generally shed their duty for patrol to security guards employed by the apartment community.

Police services are organized by the National Police Agency and the Metropolitan Police Agency and produced by police stations located at the *gu* or *dong* level. A police precinct is generally a *dong*. *Dong*-size apartment communities are nearly coterminous with the precincts of police stations. The communities generally contact *dong*-level police stations, not the upper-level police organizations (see Figure 6.2). Two types of communities benefit from police services: (1) high-status *dong*-size communities, such as *Olympic Village* and *Changmi*, add their own considerable security services to the police services, and (2) low-status *dong*-size communities, such as *Chamsil-I*, have incentives to reduce costs for security services by relying on police. On the other hand, small communities, such as *Karak Halla* and *Karak Woosung*, are generally ignored by police, because there is more need for police services in other areas, such as business districts or detached housing areas. As a result, small apartment communities appear to rely exclusively on their own security forces, whether they are low-status or high-status.

b. Fire stations

Fire protection systems in the six communities, such as fire alarms, extinguishers, and fire water systems, are inspected both regularly and without prior notification by fire stations. These fire systems are also regularly inspected and reported to fire stations by the community. When a fire is beyond control of the community, either an individual resident or the management office calls the fire station. In addition, flammable facilities, such as fuel storage tanks, cannot be

Figure 6.2. Relationship of apartment communities to police



installed without permission of the chiefs of fire stations.

c. Korea Housing Corporation (KHC)

The KHC develop apartment communities, such as *Chamsil-I* and *Chamsil-C*, and manage these communities for the first year after development. The assemblies, management offices, and bylaws of these communities were arranged by the KHC during the compulsory management period. The KHC is also engaged in institutional and technical research on the management of apartment communities by its own research institute.

5. Local courts

All private and common property in apartment communities is registered with the registries of local courts. Photocopies of registrations are issued on anyone's request. Communities may request local courts to order the compulsory sale of apartments or their temporary seizure if residents default on monthly mandatory fees over a period of three months or severely violate public or community laws. According to the records of the six communities, however, there has never been any coercive enforcement by local courts in these communities.

6. Private Housing Management Companies

Professionally managed communities, such as *Olympic Village* and *Karak Halla*, are related to the central housing management agency, *Hankook Housing Management Company*. They pay management commissions to the central agency. Management offices propose annual, semi-annual, quarterly, monthly, weekly, and daily schedules and report their performance to the central agency. They also propose budgets and contract plans to the central office.

The central agency supplies these communities with internal

operational rules and management know-how. The central agency appoints managers, including the general manager of the community, educates them, and holds conferences with general managers. It keeps its own engineers and equipment in order to help communities in an emergency. It supervises and audits them internally.

E. Conclusion

All six communities are provision units in the sense that they make basic choices of provision, such as whether to provide certain types of services or not, how to finance them, and how to arrange for their production. They provide various types of collective services, such as maintenance, security, cleaning, pest and rodent control, heating, and fire services. Although garbage collection services are provided by the *gu* office and produced by either the *gu* office or private agencies, the six communities are also engaged in the provision of garbage collection services by monitoring performance and influencing the *gu* office. The communities provide public services that residents would otherwise receive from governmental agencies. They provide a very significant level of community service compared to the service provided by government.

Production arrangements in the six communities are similar. All six communities make in-house production arrangements for maintenance, security, heating, and fire services. On the other hand, pest and rodent control services are produced by private agencies in all six communities. Cleaning services are produced in-house in *Chamsil-I*, *Chamsil-C*, and *Changmi*, and by private agencies in *Olympic Village*, *Karak Hall a*, and *Karak Woosung*.

The six communities are related to various types of institutions in the public economy of Seoul, such as the metropolitan government, its

administrative offices (*gu* and *dong*), government ministries, governmental agencies, local courts, and private housing management companies. In particular, the communities, by financing their own services, reduce expenditures by governmental agencies, and provide services responsive to residents' demands by being accountable to residents.

Apartment communities do not displace the provision of services by governmental agencies, nor do they act in isolation from them. Apartment communities and governmental providers tend to complement each other. The relationship differs somewhat among communities. Some communities, for example, rely more on police; others, less. Garbage collection was recently shifted from being mainly an RCA function to being a local government function, although the production arrangement varies among communities. In the case of fire production, apartment communities and local governments each address different aspects of the problem. Clearly, apartment communities have a comparative advantage in the provision of many services, but not in all.

Notes

1. It is infeasible to calculate the out-of-pocket costs for cleaning of all *bans*.
2. The frequency of the mandatory civil defense practice was reduced to three times a year beginning January of 1992.
3. [Chung-Ang Ilbo] Daily News, October 8, 1983. There has been no report on this type of controversy in any of the six communities studied.

Chapter VII

SUMMARY AND CONCLUSION

In this research, the collective-action problems associated with organizing the apartment commons have been studied on the basis of the common-property theory. The urban commons appears to be successfully maintained as common-property in apartment communities in Seoul. Common-property theory is not only applicable to the study of the urban commons as organized and maintained by RCAs, but also lends new insight to the understanding of RCAs.

Apartment communities in Seoul include the private property of residents (individual apartment units), the common property of residents (grounds and buildings), and the common property of merchants (market buildings). In addition, the larger communities include governmental offices and public or private schools within their boundaries. Among these diverse types of property, this study focused primarily on the common space and facilities owned and maintained by the community—the common property of the community. The common space and facilities, referred to as the "RCA commons" in this study, include both the common area and facilities of the grounds and the common space and facilities in and around apartment buildings. Although the community is not responsible for maintaining other types of property within the community, it is still the RCA that has general control over the whole apartment community, including all types of property.

Apartment communities in Seoul are constituted on the basis of both a Presidential Decree on Common Housing Management (PDCHM) and bylaws adopted by each community. Certain institutional arrangements related to apartment communities are specified directly by the PDCHM, but others are left open to the community. All six communities studied make a number of basic decisions: the establishment and amendment of the

bylaws, the organization of an elected assembly and its board of directors, the choice of management type, the amount of revenue to be raised by mandatory fees and user fees, and the maintenance of common property (although long-term maintenance is grounded by a mandatory provision rule). These communities are autonomous in making decisions related to community governance and maintenance. The decision-makers of the communities are not subject to government, even though *tong* and *ban* heads within communities are accountable to the top-down governmental structure. In this sense, the responsibility for caring for common property of the community and providing related services is carried out by apartment communities themselves.

Apartment communities clearly face problems that are very much characteristic of the commons: access control, use regulation, and maintenance. Each problem is related to a different physical attribute of the commons. Access control is related to the conditions of exclusion and boundary definition. Regulation of use is related to the condition of limited jointness in use. Maintenance is related to the conditions of deterioration and renewability.

In undertaking access control, use regulation, and maintenance, the six communities not only formulate operational rules and enforce them, but also make various physical and institutional arrangements for resolving the collective-action problems. In general, access control and maintenance are undertaken at the community level, but use regulation occurs primarily at the building level within communities. The six communities employ managers, engineers, and security guards; publish newsletters, contact individual residents and households, and monitor all common spaces and facilities; levy and collect monthly mandatory fees; and, sometimes, rely on external authorities.

According to the findings in the six communities studied, outsiders have relatively easy access to the community, except at night. Yet, access is constrained in these communities by fences, a limited

number of community entrances, and security guards who monitor community entrances and, especially, building entrances. The most exclusionary constraint is imposed on outsiders' doing business within the community. Because access control is relatively effective in these communities, the communities are not overwhelmed by outsiders. All six communities are much less crowded than their surrounding neighborhoods. They are also perceived as safe even at night, so that the streets, sidewalks, and parks within the community are also used for children's play and family recreation.

Given effective access control, the six communities employ a diverse set of alternative use regulations. In addition to printed notices, such as newsletters or warning notes, they seem to rely more on face-to-face conversations with rule violators for the purpose of persuading or, sometimes, shaming them. Mutual regulation by residents themselves, however, is even more important, and is quite effective among neighbors. In practice, use regulation at the building or *ban* level is usually undertaken by building residents rather than by management offices. In *Ban sang hwe*, not only are operational rules formulated, but also conflicts among residents are expressed, discussed, and resolved. The regulations observed by residents are based on unwritten social customs to which all residents are well accustomed, rather than written regulatory codes.

Many conflicts are fairly easily resolved among residents without the need for involvement by a third party. Conflict resolution in the six communities generally relies on mutual understanding and compromise among residents, rather than administrative and management procedures controlled either by the management office or by external authorities. In particular, various types of customary rules common to the Korean society, such as deference to senior people, function more effectively than written rules for conflict resolution among residents. The residents of these communities "self-regulate" in using the commons.

In the six communities, routine maintenance services are financed by monthly mandatory fees and regularly performed on schedule by management offices. For large-scale maintenance services that cannot be financed by current residents alone, the six communities deposit only the minimal funds required by law. In general, each community is able to act collectively to provide routine maintenance services at an appropriate level on the basis of internal self-governance. On the other hand, to provide special maintenance services, they depend on external authority to exert constraint that requires current residents to contribute to long-term maintenance funds.

All six communities make basic choices about the provision of various types of collective services, such as maintenance, security, cleaning, pest and rodent control, heating, and fire services. They primarily decide whether to provide certain types of services or not, how to finance them, and how to arrange for their production. In providing various community services, the communities tend to be responsive to residents' demands by being accountable to residents.

Production of services is diversely arranged in the six communities. Routine maintenance, security, heating, and limited fire services are produced in-house in all six communities. These are labor-intensive services that benefit little from economies of scale, and therefore can be produced in-house. On the other hand, pest and rodent control services are produced by private agencies in all six communities. Because these services are supplied periodically, not continuously, they are better contracted-out. Cleaning services are produced in-house in *Chamsil-I*, *Chamsil-C*, and *Changml*, and by private agencies in *Olympic Village*, *Karak Halla*, and *Karak Woosung*. In some of the cases of self-production, cleaning is coproduced by residents in order to economize on labor-costs. Private cleaners are more easily monitored than security guards because they have less discretion.

The six communities are related to various types of institutions

in the public economy of Seoul: the metropolitan government, its administrative offices, government ministries, governmental agencies, local courts, and private housing management companies. The communities provide public services that residents would otherwise receive from governmental agencies, thus reducing governmental expenditures. In fact, communities provide significant levels of service compared to services provided by government. Apartment community employees greatly outnumber *dong* employees, in some communities more than others.

The commons in apartment communities, although used also by outsiders, is commonly owned by apartment owners and primarily used and cared for by apartment dwellers within the community boundaries. All six communities possess the necessary characteristics to be considered effective common-property institutions. They successfully cope with collective-action problems characteristic of the commons by organizing and maintaining the RCA commons as common-property.

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