



ISSN: 2288-7709  
 JEMM website: <https://accesson.kr/jemm>  
 doi: <http://dx.doi.org/10.20482/jemm.2025.13.6.87>

# The Impact of Seoul City Public Apartment Complex Characteristics on Management Fees

JungSeok OH<sup>1</sup>

Received: July 25, 2025. Revised: July 31, 2025. Accepted: August 30, 2025.

## Abstract

**Purpose** This study aimed to establish a foundation for developing a reasonable fee calculation system that accounts for the unique characteristics of each apartment complex by empirically examining the impact of various features of Seoul's sale and public rental apartment complexes on the commissioned management fee. **Research design, data and methodology:** This study targeted 1,547 private apartment complexes and 550 public rental apartment complexes using K-apt and SH Corporation data, with key variables including the number of units, building age, heating system type, and corridor type. **Results:** The findings indicate that, in the case of condominium apartments, the number of units and the building age are significantly negatively associated with commission fees. As the number of units and the building age increase, the commissioned management fee tends to decrease, indicating the combined effects of 'economies of scale' and reduced management efficiency due to after equipment aging. In terms of corridor type, the corridor -style layouts were associated with significantly higher fees than staircase-style. In contrast, in the case of public rental apartments, the number of units did not show a significant effect on the commissioned management fee, while only building age showed a statistically significant negative relationship. Additionally, variables such as heating system type, rental type, and corridor type were not found to be significant, suggesting that the physical and operational characteristics of the complex have a limited influence on the calculations in the context of public rental housing.

**Keywords :** Public apartment, Complex characteristics, Management fee, Public rental housing, Heating system type

**JEL Classification Code** (up to 3-5): E44, F31, F37, G15

## 1. Introduction<sup>12</sup>

### 1.1. Background and Purpose of the Study

Historically, Seoul City's housing supply policy focused on providing large-scale apartment complexes through extensive land development. However, due to constraints such as the limited availability of developable land, the approach has transitioned toward the acquisition of small-scale housing units. Seoul City's public rental housing

is divided into construction and purchase types, and when looking at the total trend by year, construction types are gradually decreasing while purchase types are increasing, and in particular, small-scale housing is increasing, especially multi-family housing. Small-scale housing consists of multi-family rentals, urban living housing, and hope housing. As of the end of April 2025, 37,425 units are being managed, and the annual growth rate has been decreasing since 2020.

As of the end of 2024, the total number of public rental

\*This study is a revision and supplement of a part of the 「Study on the management area of small-scale public housing and the ration of management and operation coasts」 conducted by the SH Urban Research Institute in 2024.

<sup>1</sup> First Author. Research Fellow, SH Urban Research Center, Seoul Housing & Urban Development Corporation, Email: ojs94@i-sh.co.kr.

© Copyright: The Author(s)  
 This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/4.0/>) which permits unrestricted noncommercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

housing units in Seoul is categorized as follows: 104,407 units comprising Permanent, Public, National, Happy, Residential, Hope housing, Long-term lease construction types; 130,446 units including Multi-family, Urban, Hope, Happy, and Youth housing near subway stations, as well as Long-term lease purchase, Redevelopment lease), and 59,002 (lease rental, long-term secure housing) units.

In terms of housing management, the importance of small-scale housing management is being highlighted along with large-scale complex management. There are difficulties in housing management due to the increase in public rental housing and its distribution throughout Seoul. Management tasks are divided into rental operation management and housing management (management, security, cleaning), and housing management tasks are mainly performed by contracted management companies.

As public rental housing increased, the number of private housing management companies also increased, resulting in fierce competition for limited supply, which in turn led to lower management fees. This problem is having a negative effect of lowering the quality of service in public rental housing where many socially disadvantaged people reside.

The commissioned management fee varies by region, and in the case of Seoul Housing and Urban Corporation, the design price is determined based on the average unit price of all rental complexes. Therefore, the consignment fee design price is different for each housing safety center, and it is calculated at the same unit price regardless of the management area, number of managed units, and housing type, so it is necessary to prepare a plan for improvement.

Therefore, the objective of this study is to examine the status of management fees in public rental apartment complexes in Seoul and to investigate their associations with complex-specific characteristics such as number of residential units, building age, corridor type, and heating system type.

## 1.2. Scope and Methodology of the Study

The scope of the study was apartment complex-type public rental housing managed by Seoul Housing and Urban Corporation among Seoul public rental housing and was until the end of June 2024. More than 80% of Seoul public rental housing is managed by Seoul Housing and Urban Corporation, and since it is difficult to distinguish the characteristics of small-scale housing that is not an apartment complex type, the study was limited to apartment complex type.

Seoul public rental housing is largely divided into construction, purchase, and rental types. Construction types include permanent rental housing, public rental housing (50 years), National rental, Happy housing, Residential

environment rental, and Hope housing (construction type). Purchase types include multi-unit purchase, urban living housing, Hope housing, Happy housing (purchase type), Youth housing near subway stations, and Redevelopment rental. Rental types include jeonse rental and long-term secure housing.

The research method consisted of literature research and empirical research. The literature research included previous studies related to the commissioned management fee, and the empirical research included analysis of the factors affecting the commissioned management fee of complex characteristics and analysis of the differences in the commissioned management fee by complex characteristics. To examine the current status of commissioned management fee, frequency and cross-tabulation analysis were conducted, and multiple regression analysis was employed to identify the factors that significantly affect the determination of the fee.

The management fee is a critical factor in ensuring efficient operation of apartment complexes and maintaining the quality of management services. Recently, there has been growing interest in management fee for both public rental and private apartments, leading to number of empirical studies investigating the the factors that influence these costs. This section organizes the contents of previous studies with a focus on the physical characteristics, location, management method, and institutional factors associated with apartment complexes.

## 2. Review of previous research

The management fee plays a key role in ensuring efficient operation of apartment complexes and quality of management services. Recently, interest in the management fee for public rental and private apartments has increased, and some empirical studies have been conducted on the factors affecting it. This section organizes the contents of previous studies focusing on the physical characteristics, location, management method, and institutional factors of apartments.

### 2.1. Physical Characteristics of the Complex

Oh (2021) empirically analyzed the impact of complex characteristics on the management fee (unit price per m<sup>2</sup>) for public rental housing in Seoul. The regression analysis results showed that the number of households, the number of years, and the entrance structure were statistically significant variables. Specifically, the higher the number of households, the lower the fee, and the lower the fee was for hallway-type or mixed entrance structures rather than staircase-type ones. On the other hand, the heating system

type and whether it was exclusively for rental were analyzed as insignificant.

In a similar vein, Kim and Kim (2014) analyzed 2,133 apartment complexes in Seoul and found that the number of households, management area, and heating system type were factors that lowered management costs, while the highest floor, age, and number of elevators were factors that increased management costs.

## 2.2. Location and Regional Characteristics

The Korea Appraisal Board (2019) investigated the status of calculating the commissioned management fees for apartment complexes nationwide and confirmed the differences in unit prices by region. In high-income areas such as Gangnam, Seoul, the fees were relatively high, which was interpreted as a difference in labor cost levels and market demand. In the case of Seoul, the design unit price by regional center ranged from 6.45 won/m<sup>2</sup> to 11.0 won/m<sup>2</sup> as of 2020, and the actual winning bid price was confirmed to be 7.89.6 won/m<sup>2</sup> on average.

## 2.3. Management Method and Contract Structure

In the 2020 “Apartment Management Status Survey Report,” Seoul City revealed that competitive bidding tends to lower the commission fee compared to a negotiated contract. Unlike autonomous management where residents directly contract, commission fee calculation is determined through a contract with an external company. The larger the company, the higher the commission, but the reliability of the service quality is also evaluated as high.

## 2.4. Institutional Foundation and Limitations

Oh (2021) pointed out that according to the Seoul Housing and Urban Corporation's practical standards, the management fee is uniformly applied based on the average unit price of each regional center, and there is a problem that differentiation reflecting the characteristics of the complex is insufficient. As a result, the fee is applied as a single unit price even for the same size and the same management area, which limits the fairness of management fees and the efficiency of fees.

In addition, the Apartment Management Act does not provide standard guidelines for calculating the consignment fee, so it is currently dependent on the self-based standards of local governments and public institutions or private negotiations. Therefore, in order to identify the factors affecting the commissioned management fee, the variables identified as factors affecting management costs in previous studies, such as household size (number), elapsed years,

heating system type, and entrance structure, were used in the analysis.

## 3. Research Methods

### 3.1. Research Model and Hypothesis

The purpose of this study is to confirm the relationship between the characteristics of apartment complexes in Seoul and the management fees. To achieve this purpose, through a review of previous studies, the number of households, number of years, heating system type, and entrance structure among the characteristics of apartment complexes were selected as independent variables, and the management fee per area was selected as the dependent variable.

The research hypotheses based on the results of the review of prior studies are as follows.

**H1.** As the number of units (or residential units) in Seoul's public rental apartments increases, the commissioned management fee will have a negative (-) effect.

**H2.** As the number of years of Seoul's public rental apartments increases, the commissioned management fee will have a positive (+) effect.

**H3.** As the number of units in Seoul's public rental apartments increases, the commissioned management fee will have a negative (-) effect.

**H4.** As the number of years of Seoul's public rental apartments increases, the commissioned management fee will have a positive (+) effect.

**H5.** The management fee for consignment will vary depending on the entrance structure of a Seoul public rental apartment.

**H6.** The management fee for consignment will vary depending on the entrance structure of a Seoul public rental apartment.

**H7.** The management fee for consignment will vary depending on the heating system type of a Seoul public rental apartment.

**H8.** The management fee for consignment will vary depending on the heating system type of a Seoul public rental apartment.

**H9.** The management fee for consignment will vary depending on the rental type of a Seoul public rental apartment.

### 3.2. Analysis Data

As of the end of June 2024, K-apt management status data for private apartment complexes was used, and the target was apartments for sale (1,547 complexes). In addition, there are 550 public rental housing complexes

managed by Seoul Housing and Urban Corporation. Seoul Housing and Urban Corporation, internal data, 2020.

The data used for analysis in this study were K-apt, Seoul City, and Seoul Housing and Urban Corporation internal data, and the management fees for apartment complexes subject to mandatory management in Seoul were analyzed. Among apartment complexes, only apartments were targeted, and non-mandatory targets were excluded due to difficulty in obtaining data.

Public rental housing targets rental-only complexes and mixed complexes (rental + sale) managed by Seoul Housing and Urban Corporation, and targets a total of 550 complexes, including 182 rental-only complexes and 368 mixed complexes.

### 3.3. Analysis Method and Items

In this study, the analysis method of the commissioned management fee was to divide the monthly fee (won) per area (m<sup>2</sup>) to analyze the commissioned management fee of

rental apartments and sale apartments and calculate the unit price per area. The area is based on the exclusive area, but in the case of SH, the area contracted with the consignment management company, the SH consignment management contract area has various criteria such as the exclusive area, supply area, and contract area of the apartment.

Considering that the unit price is calculated based on these criteria, ① the exclusive area standard and ② the area standard contracted with the consignment management company were presented together.

However, since there are limitations in determining the exact exclusive area in the case of mixed complexes from the data obtained through SH Corporation, ② the area criteria for contracting with the management agency were also presented. The average analysis items for the management agency fee were analyzed based on the size of the apartment complex, the number of years since its establishment, the type of corridor, and the heating system type. The analysis was conducted using Jamovi program version 2.6.26, utilizing descriptive statistics and regression analysis methods

**Table 1:** Analysis Items for Average Commissioned management fees

Division	Explanation	Detail	SH	K-apt
Number of units	Economies of scale	150-299/300-499/ 500-999/1,000 or more	○	○
Building age	Difference in commissioned management fees by years of service(Based on the date of approval for use)	Less than 5years / 6~10/ 11~20/ 21~30/ 31 years or more	○	○
Corridor type	Differences according to main building type	Stairs/Mixed/Corridor/Tower	○	○
Heating system type	Management differences according to heating system type	Individual heating/district heating/central heating	○	○

The analysis of the status of management fees for apartment complexes was conducted by analyzing the household size, number of years, heating system type, and entrance structure of apartment complexes, which were identified as influential factors in previous studies.

**Table 2:** Analysis items

Division	Variable name	Detail	Scale
Dependent variable	Monthly management fee per square meter	Monthly complex-based commissioned management fee/ Contracted area of the building	ratio

Independent variable	Number of units	① 150-300 ② 300-500 ③ 500-1,000 ④ 1,000 more	ordinal
	Building age	① Less than 5 years ② 5-10 ③ 10-20 ④ 20-30 ⑤ 30 years or more	ordinal
	Heating system types	① Individual heating ② region heating ③ central heating	dummy
	Corridor type	① Stairs ② Mixed ③ Corridor ④ Tower	dummy

## 4. Analysis Results

### 4.1. Complex Characteristics

#### 4.1.1. Apartment for Sale

Looking at the basic status of apartments for sale, the average number of households in 1,547 apartment complexes for sale was 610 households, with a minimum of 150 households and a maximum of 6,864 households. As a result of analyzing the management fees for apartments for sale using K-apt data, the average was 11.2 won/m<sup>2</sup> (exclusive area). The median value of the commissioned management fee was 9.9 won/m<sup>2</sup>, and 95% of the total had a commissioned management fee of 18.4 won/m<sup>2</sup> or less. As a result of the analysis by complex characteristics, first, the size of the complex was divided into 150~299 households, 300~499 households, 500~999 households, and 1,000 households or more and analyzed. The analysis results showed that, as with previous studies, the average unit price of the commissioned management fee was higher as the number of households decreased. The average unit price of the commissioned management fee was analyzed to be 6.4 won/m<sup>2</sup> lower for complexes with 1,000 or more households (7.6 won/m<sup>2</sup>) than for complexes with less than 300 households (13.9 won/m<sup>2</sup>). Second, the elapsed years were categorized as 5 years or less, 6~10 years, 11~20 years, 21~30 years, and 30 years or more. Among the apartment complexes for sale, those that were 21 to 30 years old were the most numerous, and the management fees for apartment complexes that were 6 to 10 years old or less were the

highest at 21.4 won/m<sup>2</sup>, while those for apartment complexes that were 31 years old or more were 9.8 won/m<sup>2</sup>, showing a difference of 11.5 won/m<sup>2</sup>. As a result, the management fees tended to decrease as the number of years passed. Third, the heating system type of the analyzed complex was classified into individual heating, district heating, central heating, and other (methods other than the three or a combination of two or more heating system types), and the difference in the commissioned management fee was analyzed. In the analyzed complex, individual heating was the most common at 71.2%, followed by district heating at 23.4%, central heating at 4.9%, and other at 0.5%. When examining the difference in commissioned management fee by heating system type, the commissioned management fee for individual heating in the apartment complex for sale was the highest at 11.5 won/m<sup>2</sup>, followed by district heating at 10.6 won/m<sup>2</sup> and individual heating at 11.0 won/m<sup>2</sup>. Fourth, the corridor type is divided into stepped, corridor, mixed, and tower types, and the most common type is stepped. When comparing the management fee by corridor type of the apartment complex for sale, the corridor type was the highest at 14.9 won/m<sup>2</sup>, followed by stepped 10.9 won/m<sup>2</sup>, mixed 10.5 won/m<sup>2</sup>, and tower type 7.5 won/m<sup>2</sup>. Fifth, the average management fee for apartments for sale in Seoul was analyzed to be 11.2 won/m<sup>2</sup>. The area with the largest number of complexes included in the analysis was Nowon-gu, with 154 complexes, followed by Gangseo-gu (102), Guro-gu (95), and Gangnam-gu (90). As a result of analyzing the management fee by autonomous district, the area with the highest management fee was Yongsan-gu (18.6 won/m<sup>2</sup>), and the area with the lowest management fee per unit price was Seongbuk-gu (8.5 won/m<sup>2</sup>), which was confirmed to be about 10.1 won/m<sup>2</sup> lower on average than Yongsan-gu, which had the highest management fee.

#### 4.1.2. Public Rental Apartments

The average management fee for Seoul City public rental housing (182 construction-type complexes managed by SH Corporation) is KRW 16.8/m<sup>2</sup> when applied based on exclusive area, and KRW 8.5/m<sup>2</sup> when applied based on contract area. First, the commission fee by rental type was analyzed. The number of complexes for each type of national rental, permanent rental, and public rental was within 20, and the average unit price of the commission fee based on the exclusive area by type was 17.6 won/m<sup>2</sup> for national rental, 11.1 won/m<sup>2</sup> for permanent rental, and 12.8 won/m<sup>2</sup> for public rental, which means that the commission fee for permanent rental was 6.5 won/m<sup>2</sup> lower than that for national rental. The average unit price of the commission fee calculated based on the contract area was analyzed to be 8.5 won/m<sup>2</sup> for national rental, 7.7 won/m<sup>2</sup> for permanent

rental, and 7.7 won/m<sup>2</sup> for public rental.

Second, the management fees by housingsize of the complex were 21.2 won/m<sup>2</sup> for less than 300 households, 16.7 won/m<sup>2</sup> for 300 to 499 households, 14.2 won/m<sup>2</sup> for 500 to 999 households, and 12.2 won/m<sup>2</sup> for 1,000 or more households, showing an average difference of 9.0 won/m<sup>2</sup> between complexes with less than 300 households and those with more than 1,000 households. The management fees based on contract area were investigated to be 9.5 won/m<sup>2</sup> for less than 300 households, 8.2 won/m<sup>2</sup> for 300 to 499 households, 8.0 won/m<sup>2</sup> for 500 to 999 households, and 7.6 won/m<sup>2</sup> for 1,000 or more households. Therefore, it was found that the unit price decreased as the housing size increased.

Third, we analyzed the management fee based on building age. As with the apartment complexes for sale, the oldest complexes were in operation for 21 to 30 years. In terms of exclusive use area, complexes that had been in operation for 20 years or less were analyzed to have a unit price of over 18 won per m<sup>2</sup>, while complexes that had been in operation for 21 to 30 years were analyzed to have a unit price difference of over 4 won at 13.7 won/m<sup>2</sup>. In terms of the contract area for management fee, complexes that had been in operation for 10 years or less were relatively high at over 10 won per m<sup>2</sup>, while complexes that had been in operation for 21 to 30 years were the lowest at 7.7 won/m<sup>2</sup>. In general, the management fee tended to decrease as the number of years increased.

Fourth, for the analysis of the commission management fee by heating system type, among SH's public rental apartments used in the analysis, the individual heating system type (114 units) was the most common, followed by the district heating system type (64 units). The commission management fee based on the exclusive area was investigated to be 18.0 won/m<sup>2</sup> for individual heating, 15.0 won/m<sup>2</sup> for district heating, and 12.7 won/m<sup>2</sup> for central heating. The commission management fee based on the commission management contract area was 8.7 won/m<sup>2</sup> for individual heating, 8.1 won/m<sup>2</sup> for district heating, and 7.8 won/m<sup>2</sup> for central heating.

Fifth, the corridor type was categorized such as stairs-type, corridor-type, and mixed-type. The most common type was stairs-type in the sale apartment complexes, while the surveyed rental complexes mostly had corridor-type structures. The number of corridor-type apartments was 164, which corresponded to 90% of the sample. Accordingly, the management fee for corridor-type apartments did not differ much from the average management fee for rental apartments (16.8 won/m<sup>2</sup>).

Finally, we analyzed the commissioned management fees by center. Based on the exclusive area, there were 5

centers with a unit price higher than the average commissioned management fee of 16.8 won/m<sup>2</sup> for rental apartment complexes. Eunpyeong area was the highest at 21.4 won/m<sup>2</sup>, and Nowon-Dobong area had the lowest commissioned management fee at 12.4 won/m<sup>2</sup>. That is, commissioned management fee in Eunpyeong area was about 1.7 times higher than fee in Nowon-Dobong area. Based on the consignment management contract area, Songpa area had the highest unit price per m<sup>2</sup> (14.6 won), followed by Seongbuk-Gangbuk area, West/South area, and Eunpyeong area.

## 4.2. Results

### 4.2.1. Verification Results of H1 and H2

To verify the hypothesis and analyze the impact of apartment complex characteristics on management fees, a multiple regression analysis was conducted, with the number of units and the building age as the independent variables, and the management fee as the dependent variable. As a result of the analysis, the F value was 25.2, the significance level was 0.001% or less, and the model fit was analyzed to be high. The R-sq of the model was .116, and the adjusted R-sq was .111.

**Table 3:** Model explanatory power

Observations (number of complex)	1,547
F value	25.2
p value	.000
R <sup>2</sup>	.116
Adj R <sup>2</sup>	.111
DW Statistic	1.69

**Table 4:** Impact of the characteristics of the apartments for sale on the management fees

Variable	B	S. E.	t	p	β	
Intercept <sup>a</sup>	23.07 7	1.11 5	20.69 5	<.00 1		
Number of units	- 2.235	0.22 7	- 9.849	<.00 1	- 0.2551** *	
Building age	- 2.270	0.29 1	- 7.796	<.00 1	- 0.2101** *	
Heating system typesyste	Central- Individu al	1.972	1.12 2	1.758	0.07 9	0.2076

m type	Region-Individual	0.763	0.576	1.324	0.186	0.0803
	Other-Individual	-1.398	3.181	-0.440	0.660	-0.1471
Corridor type	Corridor-stairs type	6.625	0.825	8.031	<.001	0.6972**
	Mixed-Stairs type	1.649	0.531	3.104	0.002	0.1736**
	Tower-Stairs type	-3.170	6.368	-0.498	0.619	-0.3336

Note: \*p<0.1, \*\*p<0.05, \*\*\*p<0.001

In order to find out the effect of the characteristics of the apartment complex on the management fee, the standardization coefficient was examined, and the biggest factors were the number of households and the number of years. It was analyzed that the management fee was lower when the number of households increased, the number of years increased, and the management fee was lower when the type was corridor-type and mixed-type compared to the step-type.

As a result of verifying H1, the number of households ( $\beta = -.2551$ ,  $p < .001$ ) showed that as the number of households increased, the commissioned management fee decreased. Therefore, Hypothesis 1, “As the number of households in Seoul City’s public housing increases, the commissioned management fee will have a negative (-) effect” was accepted.

As a result of verifying Hypothesis 2, it was shown that as the number of years increased, the commissioned management fee decreased ( $\beta = -.2101$ ,  $p < .0011$ ). Therefore, Hypothesis 2, “As the number of years increased for Seoul City apartments for sale, the commissioned management fee will have a positive effect” was rejected.

**4.2.2. Verification Results of H3 and H4**

To verify the hypothesis, in order to find out the effect of public rental apartment complex characteristics on the management fee, a multiple regression analysis was conducted with the number of households and the number of years as independent variables and the management fee as the dependent variable. As a result of the analysis, the F value was 6.30, the significance level was 0.001 or less, indicating a high model fit, and the model R-sq was .248 and the adjusted R-sq was .208.

**Table 5: Model explanatory power**

Observations (number of complex)	182
F value	6.30
p value	.000
R <sup>2</sup>	.248
Adj R <sup>2</sup>	.208
DW Statistic	1.86

**Table 6: The impact of public rental apartment complex characteristics on management fees**

Variable		B	S. E.	t	p	$\beta$
Intercept <sup>a</sup>		30.604	4.361	7.018	<.001	
Number of units		-0.273	1.296	-0.210	0.834	-0.0145
Building age		-4.821	0.698	-6.905	<.001	-0.4903***
Heating system type	Central-Individual heating	-2.364	5.096	-0.464	0.643	-0.2102
	Region-Individual heating	-2.140	1.652	-1.295	0.197	-0.1902
Corridor type	Corridor-stairs type	4.037	3.899	1.035	0.302	0.3588
	Mixed-Stairs type	-2.671	4.870	-0.548	0.584	-0.2374

Note: \*p<0.1, \*\*p<0.05, \*\*\*p<0.001

When looking at the standardization coefficient to find out the effect of public rental apartment complex characteristics on the management fee, the biggest factor was the number of years elapsed. It was analyzed that the longer the number of years elapsed, the lower the management fee.

The non-standard coefficient of the elapsed years was analyzed as -4.821, which means that when other conditions are the same, the management fee decreases by 482.1 won/ m<sup>2</sup> for every 10 years the elapsed years increase.

As a result of verifying H3, the number of households ( $\beta = -.0145$ ,  $p > .05$ ) showed that as the number of households increased, the commissioned management fee decreased. Therefore, H3, “As the number of households in Seoul public rental apartments increased, the commissioned management fee would have a negative (-) effect” was rejected. As a result of verifying H4, the number of years elapsed ( $\beta = -.4903$ ,  $p < .001$ ) showed that as the number of years elapsed increased, the commissioned management fee decreased. Therefore, H4, “As the number of years elapsed in Seoul public rental apartments increased, the commissioned management fee would have a positive (+) effect” was rejected.

**4.2.3. Verification Results of H5**

To verify the hypothesis, in order to find out the effect of the corridor type of the apartment complex on the management fee, a multiple regression analysis was conducted with the corridor type as the independent variable and the management fee as the dependent variable. As a result of the analysis, the F value was 9.44, the significance level was 0.001 or less, indicating a high model fit, and the R-sq of the model was .0180 and the adjusted R-sq was .0161.

**Table 7:** Model explanatory power

Observations (number of complex)	1,543
F value	9.44
p value	.001
R <sup>2</sup>	.0180
Adj R <sup>2</sup>	.0161
DW Statistic	1.89

**Table 8:** The Impact of Corridor Type in Condominium Apartments on Property Management Fees

Variable		B	S.E.	t	p	β
Intercept <sup>a</sup>		10.948	0.324	33.786	<.001	
Corridor type	Corridor-stairs type	3.977***	0.817	4.868	<.001	0.4185
	Mixed-Stairs type	-0.420	0.519	-0.809	0.419	0.0442
	Tower-Stairs type	-3.405	6.673	-0.510	0.610	0.3583

Note: \*\*\*p<0.001

In order to find out the effect of the corridor type of the apartment complex on the management fee, the unstandardized coefficient was examined, and the corridor type was 3.98 won higher than the staircase type. As a result of verifying hypothesis 5, the corridor type (B=3.977, p<.001) showed that the management fee for the corridor type was higher than that for the staircase type. Therefore, H5, “The management fee for the corridor type of the apartment complex will differ depending on the corridor type of the apartment complex” was accepted.

**4.2.4. Verification Results of H6**

In order to verify H6, in order to find out the difference in management fees according to the entrance structure among the complex characteristics, a multiple regression analysis was conducted with the staircase type among the entrance structures as the independent variable and the

management fee as the dependent variable.

As a result of the analysis, the F value was 0.198, which was a significance level of 0.05% or higher (p=0.821), indicating that the model fit was low, and the R-sq of the model was .002. The corridor-stairs type was B=1.678, p=0.701, and the mixed-corridor type was B=-0.138, p=0.980, which were not statistically significant. Therefore, H6, ‘There will be differences in management fees depending on the entrance structure of public rental housing in Seoul’, was rejected.

**Table 9:** Differences in commissioned management fees according to corridor type

Variable	B	S.E.	β	t	p
Intercept	15.335	4.27		3.590	.001
Corridor-stairs	1.678	4.36	0.1492	0.3847	.701
Mixed-Stairs	-0.138	5.46	-0.0123	-0.0252	.980

Note: N= 182, F=0.198, R-sq=.002, D-W=1.38

**4.2.5. Verification Results of H7**

To verify H7, in order to find out the effect of the heating system type of a pre-sale apartment on the management fee, a multiple regression analysis was conducted with the heating system type as the independent variable and the management fee as the dependent variable. As a result of the analysis, the F value was 1.47 and the significance level was 0.220, indicating a low model fit. The R-sq of the model was .00286. As a result of verifying H7, the model fit was very low and there was no statistical significance according to the heating system type. Therefore, H7. “There will be a difference in the management fee depending on the heating system type of a pre-sale apartment” was rejected.

**Table 10:** The Impact of Heating System Type on Property Management Fees

Variable	B	S.E.	β	t	p
Intercept		0.286		40.215	.001
Central-Individual heating	-1.490	1.126	-0.1568	-1.322	0.186
Region-Individual heating	-0.946	0.575	-0.0996	-1.645	0.100
Other-Individual heating	-2.560	3.370	-0.2694	-0.760	0.448

Note: N= 1,547, F=1.47, R-sq=.00286, D-W=1.89

**4.2.6. Verification Results of H8**

In order to verify H8, in order to find out the difference in management fees according to heating system types among the characteristics of the complex, a multiple regression analysis was conducted with individual heating as the independent variable and management fees as the dependent variable.

As a result of the analysis, the F value was 1.72, which

was a significance level of 0.05% or higher ( $p=0.183$ ), indicating that the model fit was low. The R-sq of the model was .137, and the adjusted R-sq was .0188. Central heating-individual heating was  $B=-5.28$ ,  $p=0.356$ , and district heating-individual heating was  $B=-2.97$ ,  $p=0.091$ , which were not statistically significant. Therefore, H8, ‘There will be differences in management fees depending on the heating system type of public rental housing in Seoul’, was rejected.

**Table 11:** The Impact of Heating System Type on Property Management Fees

Variable	B	S. E.	$\beta$	t	p
Intercept	18.00	105		17.152	.001
Central-Individual heating	-5.28	5.70	-0.469	-0.926	.356
Region-Individual heating	-2.97	1.75	-0.264	-1.697	.091

Note: N= 182, F=1.72, R-sq=.137, adj R-sq=.0188, D-W=1.41

**4.2.7. Verification Results of H9**

To verify H9, in order to find out the effect of public rental apartment rental type on the management fee, a multiple regression analysis was conducted with the rental type as the independent variable and the management fee as the dependent variable. As a result of the analysis, the F value was 2.79 and the significance level was 0.042, indicating a high model fit. The R-sq of the model was .0449. However, as a result of verifying H9, the management fee for public rental housing, etc. was not statistically significant compared to other types of rental housing. Therefore, H9. “There will be differences in management fees depending on the rental type of public rental apartments in Seoul” was rejected.

**Table 12:** Variation in Property Management Fees According to Rental Type

Variable	B	S. E.	$\beta$	t	p
Intercept	17.643	2.54		6.937	.001
Permanent-Nation	-6.585	3.70	-0.5854	-1.779	0.077
Public-Nation	-4.794	3.70	-0.4262	-1.295	0.197
Others-Nation	0.365	2.72	0.0324	0.134	0.894

Note: N=182, F=2.79, R-sq=.0449, adj R-sq=.0288, D-W=1.47

This study aims to provide basic data for establishing a reasonable fee calculation system that reflects the characteristics of each complex by empirically analyzing the impact of the characteristics of Seoul City’s public rental and sale apartment complexes on the management fees. The analysis subjects were 1,547 sale apartment complexes and 550 public rental apartment complexes using K-apt and SH Corporation data, and the main variables were the number of households, the number of years since the construction, the heating system type, and the type of corridor.

The research results confirmed that the number of households and the number of years of elapsed time have a statistically significant negative effect on the commission for apartments for sale. As the number of households increases and the number of years of elapsed time increases, the commission tends to decrease, which is interpreted as a relationship between ‘economies of scale’ and the decline in management efficiency after the aging of the facility. In terms of corridor type, the commission for corridor type was significantly higher than that for staircase type.

On the other hand, in the case of public rental apartments, the number of households did not show a significant effect, and only the number of years elapsed showed a statistically significant negative effect. Heating system type, rental type, and hallway type did not show significance, suggesting that the characteristics of the complex have limited influence on the calculation of public rental fees.

These results show that the current method of calculating the management fee as a uniform average unit price in the public sector, including SH Corporation, needs improvement. It is desirable to introduce a differential calculation system that reflects the characteristics of the complex, such as the size of the household and the number of years elapsed, and this can contribute to the fairness of the management fee burden on residents and the improvement of the quality of management services. In future studies, it is necessary to expand the scope to include purchased and leased public rental housing, small multi-family rental housing, etc., and to develop an analysis model that integrates more diverse factors, such as contract method (negotiated contract/competitive bidding), management company type, and regional labor costs.

**References**

Kim, S. J., Kim, H. J.(2014). Determinant Factors for the Common Management Fee of Seoul Apartment, *Residential Environment Institute of Korea*, 12(.3), .117-129.

Oh, J. S.(2021). *A Study on the Establishment of Standards for Calculating Consigned Management Fee in Public Rental Housing*. SH Research Center.

Oh, J. S.(2021). Effect of complex characteristics of public rental housing on consignment management fee, *Journal of the Korean society of cadastre*, 37(2),.33-43.

Oh, J. S., Kim, H. Y.(2020). A Study on the Current Status of Seoul’s Public Rental Housing Management Fee and Reduction Measures., *SH Urban Research & Insight*, .10(2), 1-14.

Lee, K. T., Kim, H. W., Shin, J. C.(2017), A Study on the Factors Affecting Management Fee of Apartment, *Journal of the Korea Real Estate Analysis Association*, 23(4), .21-39.

Im, K. S., Suh, C. W.(2013), A study on the characteristics by factors of Apartment Housing Administrative Expense, *Korea*

*real estate academy review*, 52., 18-30.

Korea Institute for Industrial Research(2015), *Regarding the calculation of research completion on redevelopment and reconstruction rental housing*.

Her, M. S.(2013), *A study on actual analysis of management fee of apartment houses and saving of management fee*, Graduate school of Yongsan University.

Hur, J. W., Lee, J. Y.(2011), An empirical study on the determinants of management fee of multi-family housing in Seoul, *KRUMA*, 24(6), 173-185.

SH corporation(2025), *2025 Work status*.

SH corporation(2024), *SH data*.