

# Restructuring the Public Assessment of Housing Management Toward Standardization

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**Abstract** This research is to restructure the public assessment of housing management in a standardized fashion, and a self-administered questionnaire survey was employed for data collection and analysis. In doing so, all the assessment tools nationwide were identified and assembled to extract the items included in the survey form. The survey form was mailed out to local officers in charge of housing management and professional housing managers in the nation, and the responses were statistically analyzed in order to structure the standard assessment tool of housing management. This research classified 3 main areas (General Maintenance, Operation and Community Living) in evaluating the housing management performance, and identified 35 essential items and 52 optional items. The 35 essential items were drawn from the 16 categories of the 3 areas (11 items of 5 categories for General Maintenance, 7 items of 4 categories for Operation, and 17 items of 7 categories for Community Living), and the rest 52 optional items were from the 16 categories of the 3 areas (24 items of 7 categories for General Maintenance, 26 items of 7 categories for Operation, and 2 items of 2 categories for Community Living). While all the items in the research are quantifiable, it's suggested that qualitative measurements be complementarily utilized in the assessment not only to explore the best practices of housing management but also to refine and modify the standardized tool in response to various environmental changes. As the public assessment of housing management is context-sensitive and critically related to local housing profile, the continuous implementation of the assessment will facilitate shifting the housing paradigm from production and consumption to management and reproduction.

*Keywords: Housing Management, Public Assessment, Standardization, Professionalization, Housing Policy*

## 1. INTRODUCTION

Housing has been perceived as a simple shelter in the period of economic development that has been a prolonged agenda of the national policy in Korea since 1962. Rapid urbanization accompanied by industrialization under speedy and intensive economic development in the nation has made the demand for housing strong and chronic throughout the last century. To resolve the persistent housing shortage, the extensive development of high-density housing has been centered on the housing policy for many decades. Just like many developing countries in which industrialization and urbanization is seen as the interrelated process of the national development, the massive housing development in the nation has quickened the way of life – aspiration for homeownership, better quality of life, family nuclearization and

urban lifestyle. At the same time, the continuous but immense supply of housing, particularly high-rise condominiums (so-called apartment), over many decades has been inevitably transforming the urban landscape.

As a consequence of large-scale, high-rise, for-sale housing estates that have been remarkably supplied in the second half of last century, more than half of total households live in multifamily housing accounting for over half of total housing stocks in the nation. In fact, the urbanization ratio indicating the proportion of people living in urbanized areas was simply 39.1% in 1960 but reached 90.8% in 2010, which means that more than 9 out of 10 people live in urbanized areas (KMLTMA & LH, 2012; KMOCT, 2007). According to the 2010 Census, the population density in the nation was 486 km<sup>2</sup>, about half of total population (49.1%) lived in the capital and its surrounding areas, more than half of total households (57.7%) resided in multifamily housing, and 58.3% of total housing stocks (14.87 million units) were apartments (Statistics Korea, 2013a, 2013b, 2013c). Despite steady housing production and constant urban development, the importance of housing management has been recognized widely, but never been addressed adequately.

Most housing estates built in earlier years (1960s, 1970s, and even 1980s) have been demolished and rebuilt or redeveloped. It's often proved that such rebuilding or redevelopment has caused social and economic costs. Many external and internal factors (e.g., strict regulations on housing-related projects and their environmental impacts, rising labor costs, increasing land

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prices, advanced construction technologies and materials, an extended building life and its life cycle costs, and a high level of maintenance skills) foster the significance of housing management. While there are many ways to measure the performance of the housing management and only a few initiatives at a local level had implemented the public assessment intermittently. It wasn't until 2010 that a systematic assessment was formalized. With the absence of consistent tools for gauging the performance of housing management, it's of significance to examine specific items that are essential to standardize the assessment. Thus, this paper looks into the public assessment of housing management in order to realign its evaluation and to standardize the public assessment tool.

## 2. LITERATURE REVIEW

### (1) Housing Profile

The nation considered economic development to be the priority of all the policies, and the overarching policy agenda prohibited the public housing intervention. It's viewed that macro-economic growth could increase overall income of households, so that their capacity to purchase their home can be enlarged (Lim, 2005). Also, the intensive economic development in the second half of the last century resulted in rapid migration into urban areas, and the housing demand was so strong that many housing problems in terms of condition, price, and affordability were worsened. Thus, chronic housing shortage was a primary problem throughout many stages of the economic development.

Nonetheless, housing production has been strikingly increased, and most of the housing built highlighted high-density housing estates such as apartments<sup>1</sup> and low-rise multifamily housing (Figure 1 & 2).

High-rise, multi-unit buildings and their large-scale development were seen as the best solution in order to mitigate the persistent housing shortage in a short period, to ameliorate poor housing conditions, and to satisfy the great demand for homeownership. Indeed, apartment accounted for less than 5% (0.4 million units) of total housing stock in 1980 but marked 47.1% (8.2 million units) in 2010. While apartment supply was a particular phenomenon in the process of urbanization, it has substantially contributed to housing ratio. Since apartment was regarded as a reasonable alternative to single-family home for homeownership, the massive production didn't boost up homeownership rate remarkably (58.6% in 1980 and 54.2% in 2010). With respect to rental tenure modes in housing stock, monthly rental (15.4% in 1980 and 21.5% in 2010) in rental tenure modes became more common than Chonsei (23.9% in 1980 and 21.7% in 2010) (Statistics Korea, 2013a, 2013b, 2013c).

Not only has the extensive supply of the particular housing largely transformed urban landscapes but also it greatly consisted of total housing stock nationwide. As housing provision was virtually satiated in 2010, a number of apartments and multifamily housing in urban areas considerably raised a concern for professionally managing housing estates. The nation has come responsive to the issue when some major incidents in relation to housing management occurred (Chang, 2001).

### (2) Assessment of Housing Management

As more and more housing stocks and housing estates have been largely developed and more sophisticated with various features and advanced technologies, housing estates need to be managed professionally. Accordingly, the national government has made many efforts to professionalize housing management. Included in such measures are the requirement for professional housing management from 1995, the qualification of professional management agents, the registration of housing management companies, the national licensing examination for housing managers from 1990, the disclosure of monthly housing management fees from 2009, and the formalized assessment of housing management performance from 2010<sup>2</sup>. With no public consensus regarding the standardized assessment of housing management, the evaluation in any form began from late 1990s and it has been set in place sporadically and locally. Many local governments have individually implemented the assessments that are virtually open to all and of which the system awards non-cash incentives (e.g., plaques or certificates) for outstanding housing management in lieu of cash incentives that were forbidden in 2005.

Different sectors develop and use their own criteria on the assessment of housing estates in order to seek excellence in housing culture and urban landscape. Even though such assessments are taken by a group of various professionals including architects, urban planners, public officers, and professors, the emphasis varies with

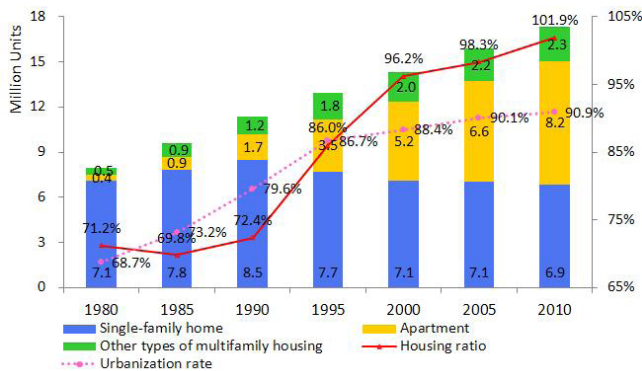


Figure 1. Housing Stock by Structure Types  
Source: Statistics Korea (respective years); KMLTMA and LH (2012)

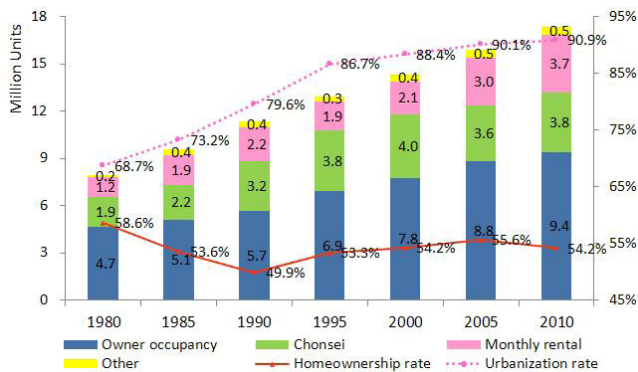


Figure 2. Housing Stock by Tenure Modes  
Source: Statistics Korea (respective years); KMLTMA and LH (2012)

<sup>1</sup> Apartments in Korea denote residential units in structure types rather than tenure modes.

<sup>2</sup> The public assessment was implemented by the national government through 「Annual Best Managed Housing Estates」, and it adopted the formalized assessment tool (consisting of 57 items of 19 categories in 4 areas).

each sector (Lee, 2008; Lee & Yoon, 2013; Seok, 2011). For instance, the non-profit sector focuses on very specific themes such as energy saving or landscaping. On the contrary, the private sector tends to highlight the aesthetics of housing estates. Meanwhile, the public sector exclusively deals with housing management and evaluates its general aspects. Some local governments began assessing housing management since the first assessment took place in Gyeonggi Province in 1997 (Chang, 2001). Many public assessments intend to explore the best practices of housing management. The movement not just drives the awareness of housing management and its professionalization, but plays a leading role in making residential environment more livable.

With respect to the professionalization of housing management, many earlier studies addressed the issue in different contexts, and the issue is seemingly related to the economic stages. Such Asian countries as Hong Kong and Macau experienced high-density housing supply that becomes inevitable in indigenous processes of rapid industrialization and extensive urbanization highlight the public intervention in the context of urban planning and management (Chiang, 2005; Chiu, 2006; Lim & Han, 2000). On the contrary, most high-income countries focus on social housing and its tenant management (Boelhouwer, et. al, 1997; Clapham, 1997; Clapham et. al, 2000; Franklin, 1998, 2000; Franklin & Clapham, 1997; Furbey, 2001; Kemp, 2000; Saugères, 1999; Somerville & Bengtsson, 2002). Nonetheless, it's common to point out that the professionalization of housing management is directly and crucially affected by the societal value of an individual society, so that its institutional frameworks shape the paradigm of and value on housing management.

### 3. METHOD

To characterize the public assessment, 14 different kinds of tools for assessing housing management in local governments (5 metropolitan cities, 3 provinces, and 6 local cities<sup>3</sup>) were identified nationwide and the acquired tools were analyzed (Table 1). The vast majority of the assessments have been used for the annual or sporadic implementation, and the tools have been steadily modified with additions, revisions and deletions while others were presented

<sup>3</sup> “Good Apartment Management” by Seoul Metropolitan City (annually implemented from 2000 to 2004), “Making Better Apartment” by Nowon District of Seoul Metropolitan City (from 1998 to 2003), “Good Apartment Estate” by Busan Metropolitan City (from 2007 to 2010), “Apartment for Good Living” by Incheon Metropolitan City (from 2000 to 2009), “Certification for Good Multifamily Housing Management” by Daejeon Metropolitan City (from 2001 to 2009), “Good Multifamily Housing Management” by Nam District of Gwangju Metropolitan City (from 2001 to 2002), “Good Multifamily Housing Estate” by Gyeonggi Province (from 1997 to 2009), “Better Apartment Village” by Paju City of Gyeonggi Province (from 2007 to 2009), “Good Multifamily Housing Management” by Chuncheon City of Gangwon Province (from 2003 to 2006), “Residential Environment Assessment for Multifamily Housing” by Gangneung City of Gangwon Province (from 2001 to 2003), “Apartment for Good Living” by Chungcheongbuk Province (from 2000 to 2004, and 2006), “Good Apartment Complex” by Chungcheongnam Province (from 2007 to 2010), “Good Apartment” by Asan City of Chungcheongnam Province (from 2003 to 2006), and “Good Apartment and Community” by Jeonju City of Jellabuk Province (from 2002 to 2003)

only in certain years. Out of 100 items divided into 24 categories of 3 areas identified, only items that were commonly found across the tools were selected and included in this research. As a result, 87 items divided into 23 categories within 3 areas (General Maintenance, Operation and Community Living) were extracted; specifically 8 categories

Table 1. Description of ‘General Maintenance’ Items in Public Assessment of Housing Management

Category	Items
Cleanliness in Estate	Beautification project; Cleanliness in garbage & trash collection areas; Cleanliness in recycling bins; Estate clean-up; Pest control
Energy Saving	Elevator stops at every other floor; Use of LED lighting or motion detecting sensors; Use of rain water/gray water; Sharing saving ideas; Tracking down annual amount of electricity used; Tracking down water use of each individual unit with total amount of water used in estate
Facility Management	Routine safety check-up of community facilities
Food Waste	Food waste recycling & collection; Food waste reduction; Food waste separation
Landscaping	Restoration of ecological balance; Routine landscaping; Streetscape
Long-range Planning	Adequate long-term reserve fund; Balancing long-term reserve fund (to equalize the costs of long-term repair & replacement); Feasibility of long-range plan
Parking Spaces	Sufficient parking spots for the disabled
Safety Measures	Hazard removal; Litter bins in playground; No obstruction in emergency exit path; Playground safety; Presence of persons in charge of estate safety; Prompt & proper repair; Regular patrol & monitoring; Routine check-up of building & estate; Safety diary & its filing; Safety training; Snow removal; Theft prevention; Traffic control

Table 2. Description of ‘Operation’ Items in Public Assessment of Housing Management

Category	Items
Accounting	Accurate budgeting; Annual audit; Auditor’s report; Audit reporting; Bidding transparency; Bookkeeping & recording all transactions
Documentation & Filing	Construction drawings & technical specifications; Management-related correspondences, documents, diaries & minutes; Sorting out documents supervised by housing managers or residents’ association
Enforcement of Rules	Enforcement of bylaws and agreement; Provision of specific guidance; Revision of rules consistent with & equivalent to laws
Management Fees	Account balance; Cost savings; Registration of business bank account; Transparency over management fees
Management Office	Number of licensed technicians; Placement of licensed housing manager; Presence and work experience of housing manager; Rewards, incentives & employee benefits
Relations with Residents’ Association	Cooperation between the board and standing committees; Democratic operation in meetings; Notice of decisions; Notice of meetings; Open & transparent selection process & criteria of board members; Participation of residents in board meetings; Public access to board meeting minutes; Recording minutes of meetings; Selection process of the board members; Structuring the board of directors
Resident’s Voice	Acknowledging & recording complaints from residents; Appropriately dealing with the complaints; Opening results to the public

Table 3. Description of 'Community Living' Items in Public Assessment of Housing Management

Category	Items
Building up a Sense of Community	Community events; Community website; Fence removal for open access; Newsletter; Social gathering
Communal Activities	Beautification activities; Community gardening
Conflict Resolution	Resolving conflicts between residents
Reusing	Activities on energy saving resource conservation; Flea market; Sharing unused household items
Safety Awareness	Community volunteer patrol; Neighborhood watch
Social Activities	Culturally themed excursions/trips/tours; Lifestyle-based classes; Social clubs
Turnover	Move-in or out of residence
Voluntary Works	Helping vulnerable people in the community; Supporting social service centers

consisting of 35 items in the area of General Maintenance (Table

1) 7 categories made up of 33 items in Operation (Table 2), and 8 categories including 19 items in Community Living (Table 3).

Based on the content analysis, the extracted 87 items were used to construct a self-administered questionnaire survey for data collection. The survey instrument was reviewed by a panel of professionals in housing studies, and each item in the form was rated on a 1-to-3 response scale (1 being unimportant and 3 being important). The survey was mailed out to 258 public officers in charge of housing management in localities and 297 on-site housing managers of housing estates in the nation. Both public officers and on-site housing managers in the survey were limited to those with some experiences on the assessment of housing management.

Out of 555 survey forms, 111 responses from local public officers (43.0%) and 115 responses from on-site housing managers (38.7%) were received. The overall response rate was 40.7%. From the collected 226 responses, this study conducted t-tests to find out the statistical significance of difference between public officers and on-site housing managers. In other words, any given item with no statistical difference between the groups should be included in the assessment while items with any statistical difference were removed.

Table 4. Statistical Analysis of the 'General Maintenance' Area in Public Assessment of Housing Management

Items	Groups	Important	Neither	Unimportant	Mean	S.D.	t-value
<Cleanliness in Estate>	Public officers	4(4.0)	26(26.0)	70(70.0)	2.66	0.555	-2.46***
	Housing managers	0(0.0)	20(17.7)	93(82.3)	2.82	0.383	
Cleanliness in garbage & trash collection areas	Public officers	6(6.0)	21(21.0)	73(73.0)	2.67	0.587	2.25***
	Housing managers	0(0.0)	20(17.5)	94(82.5)	2.82	0.382	
Cleanliness of recycling bins and good recycling	Public officers	7(7.1)	31(31.3)	61(61.6)	2.55	0.627	-2.30***
	Housing managers	4(3.6)	22(19.8)	85(76.6)	2.73	0.521	
Estate clean-up	Public officers	1(1.0)	22(22.0)	77(77.0)	2.76	0.452	-2.01***
	Housing managers	2(1.8)	10(8.8)	101(89.4)	2.88	0.381	
<Energy Saving>	Public officers	4(4.0)	35(35.4)	60(60.6)	2.57	0.574	2.36*
	Housing managers	13(11.7)	45(40.5)	53(47.7)	2.36	0.685	
<Facility Management>	Public officers	3(3.2)	21(22.1)	71(74.7)	2.72	0.519	-2.91***
	Housing managers	1(0.9)	9(8.4)	97(90.7)	2.90	0.335	
<Food Waste>	Public officers	12(12.0)	32(32.0)	56(56.0)	2.44	0.701	-2.30***
	Housing managers	4(3.5)	33(28.9)	77(67.5)	2.64	0.551	
<Landscaping>	Public officers	10(10.1)	41(41.4)	48(48.5)	2.38	0.666	-3.78***
	Housing managers	2(1.8)	30(27.0)	79(71.2)	2.69	0.501	
Restoration of ecological balance	Public officers	7(7.1)	39(39.4)	53(53.5)	2.46	0.628	-4.51***
	Housing managers	1(0.9)	20(18.0)	90(81.1)	2.80	0.423	
Routine landscaping (e.g., cutting grass, tree pruning or removal)	Public officers	10(10.1)	39(39.4)	50(50.5)	2.40	0.669	-2.41*
	Housing managers	5(4.5)	33(29.7)	73(65.8)	2.61	0.575	
<Long-range Planning>	Public officers	6(6.5)	19(20.9)	68(73.1)	2.67	0.596	-1.93***
	Housing managers	3(2.8)	14(13.1)	90(84.1)	2.81	0.458	
Adequate long-term reserve fund	Public officers	7(7.5)	24(25.8)	62(66.7)	2.59	0.630	-2.65***
	Housing managers	3(2.8)	15(14.2)	88(83.0)	2.80	0.466	
Balancing long-term reserve fund	Public officers	5(5.4)	23(24.7)	65(69.9)	2.65	0.583	-3.02***
	Housing managers	1(0.9)	13(12.3)	92(86.8)	2.86	0.376	

f(%, n=226)

\*p<.05, \*\*p<.01, \*\*\*p<.001

Table 4. (continued)

f(%), n=226

Items	Groups	Important	Neither	Unimportant	Mean	S.D.	t-value
<Safety Measures> No obstruction in emergency exit path	Public officers	4(4.3)	34(35.8)	57(60.0)	2.56	0.578	-2.62***
	Housing managers	2(1.8)	22(20.8)	82(77.4)	2.75	0.474	
Playground safety	Public officers	5 (5.3)	26(27.4)	64(67.4)	2.62	0.587	-3.78***
	Housing managers	0(0.0)	13(12.1)	94(87.9)	2.88	0.328	
Presence of persons in charge of estate safety	Public officers	4(4.3)	32(34.0)	58(61.7)	2.57	0.577	-1.86*
	Housing managers	5(4.6)	20(18.5)	83(76.9)	2.72	0.544	
Prompt and proper repair	Public officers	3(3.2)	21(22.3)	70(74.5)	2.71	0.521	-2.46***
	Housing managers	1(0.9)	12(11.1)	95(88.0)	2.87	0.364	
Regular patrol & monitoring	Public officers	9(9.5)	32(33.7)	54(56.8)	2.47	0.666	-1.44**
	Housing managers	3(2.8)	37(34.6)	67(62.6)	2.60	0.547	
Routine check-up of building & estate	Public officers	5(5.3)	19(20.0)	71(74.7)	2.69	0.566	-1.11*
	Housing managers	2(1.9)	20(18.7)	85(79.4)	2.78	0.462	
Safety diary & its filing	Public officers	10(10.9)	31(33.7)	51(55.4)	2.45	0.685	-3.54***
	Housing managers	3(2.8)	21(19.4)	84(77.8)	2.75	0.495	
Safety training	Public officers	8(8.6)	31(33.3)	54(58.1)	2.49	0.653	-3.60***
	Housing managers	0(0.0)	24(22.2)	84(77.8)	2.78	0.418	
Snow removal	Public officers	21(22.1)	34(35.8)	40(42.1)	2.20	0.780	-4.87***
	Housing managers	1(0.9)	35(32.7)	71(66.4)	2.65	0.497	
Theft prevention	Public officers	6(6.3)	30(31.6)	59(62.1)	2.56	0.614	-1.64**
	Housing managers	2(1.9)	29(27.4)	75(70.8)	2.69	0.505	
Traffic control	Public officers	8(8.4)	42(44.2)	45(47.4)	2.39	0.641	-3.57***
	Housing managers	2(1.9)	30(28.0)	75(70.1)	2.68	0.507	

\*p&lt;.05, \*\*p&lt;.01, \*\*\*p&lt;.001

Table 5. Statistical Analysis of the 'Operation' Area in Public Assessment of Housing Management

f(%), n=226

Items	Groups	Important	Uncertain	Unimportant	Mean	S.D.	t-value
<Accounting> Accurate budgeting	Public officers	1(1.0)	22(22.4)	75(76.5)	2.76	0.455	3.71***
	Housing managers	16(14.3)	30(26.8)	66(58.9)	2.45	0.733	
Annual audit	Public officers	0(0.0)	20(20.0)	79(79.8)	2.80	0.404	1.71*
	Housing managers	1(0.9)	29(25.4)	84(73.7)	2.73	0.466	
Auditor's report	Public officers	4(4.0)	21(21.0)	75(75.0)	2.71	0.537	-1.71*
	Housing managers	1(0.9)	18(15.9)	94(83.2)	2.82	0.406	
Bookkeeping & recording all transactions	Public officers	4(4.0)	29(29.0)	67(67.0)	2.63	0.562	-2.71***
	Housing managers	2(1.7)	17(14.8)	96(83.5)	2.82	0.431	
<Documentation & Filing> Construction drawings & technical specifications	Public officers	4(4.0)	28(28.0)	68(68.0)	2.64	0.560	-3.04***
	Housing managers	2(1.8)	13(11.7)	96(86.5)	2.85	0.409	
Sorting out documents under supervision	Public officers	7(7.0)	28(28.0)	65(65.0)	2.58	0.622	-2.27***
	Housing managers	3(2.7)	21(18.9)	87(78.4)	2.76	0.490	
<Enforcement of Rules> Enforcement of bylaws and agreement	Public officers	2(2.0)	38(38.4)	59(59.6)	2.58	0.536	-3.64***
	Housing managers	1(0.9)	18(16.4)	91(82.7)	2.82	0.410	
Provision of specific guidance	Public officers	8(8.1)	47(47.5)	44(44.4)	2.36	0.630	-4.43***
	Housing managers	1(0.9)	30(27.3)	79(71.8)	2.71	0.476	
Revision of rules consistent with & equivalent to laws	Public officers	5(5.1)	33(33.3)	61(61.6)	2.57	0.592	-4.57***
	Housing managers	0(0.0)	14(12.6)	97(87.4)	2.87	0.333	
<Management Fees> Cost savings	Public officers	5(5.0)	40(40.0)	55(55.0)	2.50	0.595	-2.19*
	Housing managers	6(5.3)	25(21.9)	83(72.8)	2.68	0.572	

Table 5. (continued)

f(%, n=226)

Items	Groups	Important	Uncertain	Unimportant	Mean	S.D.	t-value
<Management Fees>							
Registration of business bank account	Public officers	5(5.1)	31(31.6)	62(63.3)	2.58	0.591	-1.59**
	Housing managers	3(2.6)	16(14.0)	95(83.3)	2.81	0.458	
Transparency over management fees	Public officers	5(5.0)	13(13.0)	82(82.0)	2.77	0.529	-3.07***
	Housing managers	0(0.0)	15(13.2)	99(86.8)	2.87	0.340	
<Management Office>							
Number of licensed technicians	Public officers	7(7.0)	26(26.0)	67(67.0)	2.60	0.620	-3.13***
	Housing managers	2(1.8)	15(13.4)	95(84.8)	2.83	0.422	
Placement of licensed housing manager	Public officers	6(6.0)	24(24.0)	70(70.0)	2.64	0.595	-2.15***
	Housing managers	1(0.9)	21(18.8)	90(80.4)	2.79	0.427	
Presence and work experience of housing manager	Public officers	10(10.1)	52(52.5)	37(37.4)	2.27	0.636	-7.25***
	Housing managers	2(1.8)	16(14.3)	94(83.9)	2.82	0.429	
Rewards, incentives & employee benefits	Public officers	15(15.0)	50(50.0)	35(35.0)	2.20	0.682	-7.94***
	Housing managers	1(0.9)	18(16.1)	93(83.0)	2.82	0.407	
<Relations with Residents' Association>							
Democratic operation in meetings	Public officers	8(8.1)	44(44.4)	47(47.5)	2.39	0.636	-6.21***
	Housing managers	0(0.0)	18(15.7)	97(84.3)	2.84	0.365	
Notice of decisions	Public officers	8(8.2)	31(31.6)	59(60.2)	2.52	0.646	-4.06***
	Housing managers	1(0.9)	18(15.7)	96(83.5)	2.83	0.403	
Notice of meetings	Public officers	8(8.2)	44(45.4)	45(46.4)	2.38	0.636	-5.71***
	Housing managers	0(0.0)	22(19.3)	92(80.7)	2.81	0.396	
Participation of residents in board meetings	Public officers	11(11.1)	48(48.5)	40(40.4)	2.29	0.659	-5.10***
	Housing managers	2(1.8)	30(26.1)	83(72.2)	2.70	0.495	
Recording minutes of meetings	Public officers	3(3.1)	33(34.0)	61(62.9)	2.60	0.553	-5.14***
	Housing managers	1(0.9)	7(6.1)	106(93.0)	2.92	0.302	
Selection process of the board members	Public officers	1(1.0)	20(20.0)	79(79.0)	2.78	0.440	-2.72***
	Housing managers	1(0.9)	7(6.1)	107(93.0)	2.92	0.301	
Structuring the board of directors	Public officers	2(2.0)	25(25.0)	73(73.0)	2.71	0.498	-3.88***
	Housing managers	1(0.9)	6(5.3)	107(93.9)	2.93	0.289	
<Resident's Voice>							
Acknowledging & recording complaints from residents	Public officers	11(11.0)	44(44.0)	45(45.0)	2.34	0.670	-5.91***
	Housing managers	1(0.9)	20(18.0)	90(81.1)	2.80	0.423	
Appropriately dealing with residents' complaints	Public officers	8(8.0)	43(43.0)	49(49.0)	2.41	0.637	-6.10***
	Housing managers	1(0.9)	14(12.6)	96(86.5)	2.86	0.378	
Opening results to the public	Public officers	5(5.0)	40(40.0)	55(55.0)	2.50	0.595	-3.59***
	Housing managers	2(1.8)	22(19.8)	87(78.4)	2.77	0.466	

\*p&lt;.05, \*\*p&lt;.01, \*\*\*p&lt;.001

Table 6. Statistical Analysis of the 'Community Living' Area in Public Assessment of Housing Management

f(%, n=226)

Items	Groups	Important	Uncertain	Unimportant	Mean	S.D.	t-value
<Reusing>							
Sharing unused household items	Public officers	24(24.0)	35(35.0)	41(41.0)	2.17	0.792	-2.29*
	Housing managers	8(7.1)	53(46.5)	53(46.5)	2.39	0.619	
<Turnover Rate>							
Move-in or out of residence	Public officers	35(35.7)	45(45.9)	18(18.4)	1.83	0.718	-1.47**
	Housing managers	25(21.9)	68(59.6)	21(18.4)	1.96	0.637	

\*p&lt;.05, \*\*p&lt;.01

#### 4. RESULTS

It's assumed that any item with a statistical difference between the two groups becomes optional in structuring the assessment while items with no difference are regarded as required in the tool. Tables 4 to 6 summarize only items with statistical differences in the assessment. In fact, the statistical significance was found in 52 items of 16 categories – 24 items of 7 categories in the area of General Maintenance, 26 items of 7 categories in Operation, and 2 items of 2 categories in Community Living. These items are considered to be optional, so that they can be selectively included in the standardized assessment tool (Table 7).

Table 7. Optional Items for Standardizing Public Assessment of Housing Management

Category	Optional Items
General Maintenance	
Cleanliness in Estate	Cleanliness in garbage & trash collection areas; Cleanliness in recycling bins; Estate clean-up; Pest control
Energy Saving	Sharing saving ideas
Facility Management	Routine safety check-up of community facilities
Food Waste	Food waste recycling & collection
Landscaping	Restoration of ecological balance; Routine landscaping; Streetscape
Long-range Planning	Adequate long-term reserve fund; Balancing long-term reserve fund (to equalize the costs of long-term repair & replacement); Feasibility of long-range plan
Safety Measures	No obstruction in emergency exit path; Playground safety; Presence of persons in charge of estate safety; Prompt & proper repair; Regular patrol & monitoring; Routine check-up of building & estate; Safety diary & its filing; Safety training; Snow removal; Theft prevention; Traffic control;
Operation	
Accounting	Accurate budgeting; Annual audit; Auditor's report; Bookkeeping & recording all transactions
Documentation & Filing	Construction drawings & technical specifications; Sorting out documents supervised by housing managers or residents' association
Enforcement of Rules	Enforcement of bylaws and agreement; Provision of specific guidance; Revision of rules consistent with & equivalent to laws
Management Fees	Cost savings; Registration of business bank account; Transparency over management fees
Management Office	Number of licensed technicians; Placement of licensed housing manager; Presence and work experience of housing manager; Rewards, incentives & employee benefits
Relations with Residents' Association	Democratic operation in meetings; Notice of decisions; Notice of meetings; Participation of residents in board meetings; Recording minutes of meetings; Selection process of the board members; Structuring the board of directors
Resident's Voice	Acknowledging & recording complaints from residents; Appropriately dealing with the complaints; Opening results to the public
Community Living	
Reusing	Sharing unused household items
Turnover	Move-in or out of residence

On the other hand, 35 items in 16 categories were agreed upon by the studied two groups, indicating that they're essential to structure the standardized assessment tool as follows (Table 8): For General Maintenance, 1) cleanliness in estate (beautification project): 2) energy saving (elevator stops at every other floor: use of LED lighting or motion detecting sensors: use of rain water/gray water: tracking down annual amount of electricity used; and tracking down water use of each individual unit with total amount of water used in estate): 3) food waste (food waste reduction; and food waste separation); 4) parking spaces (sufficient parking spots for the disabled); and 5) safety measures (hazard removal; and litter bins in playground).

Table 8. Essential Items for Standardizing Public Assessment of Housing Management

Category	Essential Items
General Maintenance	
Cleanliness in Estate	Beautification project
Energy Saving	Elevator stops at every other floor; Use of LED lighting or motion detecting sensors; Use of rain water/gray water; Tracking down annual amount of electricity used; Tracking down water use of each individual unit with total amount of water used in estate
Food Waste	Food waste reduction; Food waste separation
Parking Spaces	Sufficient parking spots for the disabled
Safety Measures	Hazard removal; Litter bins in playground
Operation	
Accounting	Audit reporting; Bidding transparency
Documentation & Filing	Management-related correspondences, documents, diaries & minutes
Management Fees	Account balance
Relations with Residents' Association	Cooperation between the board and standing committees; Open & transparent selection process & criteria of board members; Public access to board meeting minutes
Community Living	
Building up a Sense of Community	Community events; Community website; Fence removal for open access; Newsletter; Social gathering
Communal Activities	Beautification activities; Community gardening
Conflict Resolution	Resolving conflicts between residents
Reusing	Activities on energy saving resource conservation; Flea market
Safety Awareness	Community volunteer patrol; Neighborhood watch
Social Activities	Culturally themed excursions/trips/tours; Lifestyle-based classes; Social clubs
Voluntary Works	Helping vulnerable people in the community; Supporting social service centers

For Operation, 1) accounting (annual audit; and bidding transparency): 2) documentation & filing (management-related correspondences, documents, diaries & minutes): 3) management fees (account balance); and 4) relations with residents' association (cooperation between the board and standing committees: open and transparent selection process and criteria of board members; and public access to board meeting minutes).

For Community Living, 1) building up a sense of community (community events: community website: fence removal for open access: newsletter; and social gathering): 2) communal activities (beautification activities; and community gardening): 3) conflict resolution (resolving conflicts between residents): 4) reusing (activities on energy saving resource conservation; and flea market): 5) safety awareness (community volunteer patrol; and neighborhood watch): 6) social activities (culturally themed excursions/trips/tours: lifestyle-based classes; and social clubs); and 7) voluntary works (helping vulnerable people in the community; and supporting social service centers).

The aforementioned 35 items should be included in the assessment while the rest 52 items could be selectively chosen with different scoring in accordance to the goals of each particular assessment. Although the outcomes construct a standardized assessment tool, it's suggested that both quantifiable items and qualitative measures be considered in the tool in order to explore the best practices and cases of housing management and to advance the tool. Nevertheless, scoring and its distribution aren't formally standardized yet since each local area has a distinctive housing profile (e.g., age, type and tenure of housing stocks) and the assessment is also usually context-sensitive (e.g., local housing policy, a panel of assessors, local housing culture and its value, and impacts of public assessment).

## 5. CONCLUSIONS

With such a short history of housing management, Korea has clearly made remarkable advances toward the standardized practices of housing management and also refined the institutional measures of its professionalization (e.g., the national licensure exam of housing managers, the qualification of professional housing management agents, the registration of housing management companies, the disclosure of monthly housing management fees, and the public assessment of housing management). In order to step forward in its professionalization, the public assessment of housing management must be consistently and constantly implemented, and there has been a lack of consensus to standardize the tool used across local areas.

From the content analysis of public assessment tools, 87 items of 23 categories within three primary areas were extracted including 35 items of 8 categories in the area of General Maintenance, 33 items of 7 categories in Operation, and 19 items of 8 categories in Community Living. The group comparison between public officers and on-site housing managers reduced them to 52 items within those same areas. In other words, about 60% of the items in the restructured assessment tool can be filled with various alternative or optional items, and the remaining items are considered to be essential. This research points out the equal importance of qualitative and quantitative measurements and indicates that items in the assessment should be consistently revised to properly reflect the changing practices of housing management.

Nowadays broad arrays of environmental externalities (e.g., global warming, sustainability, environmental impact assessments, changing institutional measures of housing management, housing policy and market conditions) have been serious and crucial. Also, more emphasis on housing management is placed in the sphere of housing policy. Therefore, more systematic and diverse

measurements in the assessment are required to deal with the professionalization of housing management and to address environmental management. From the viewpoint of environmental management and its policy-making, the constant implementation of and gradual modification toward a more effective assessment at a local level are considerably important. Moreover, this approach ultimately contributes to shifting the housing paradigm from production and consumption to management and reproduction.

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