The meanings of dwelling attributes for temporary residents from different cultures: The case of Korean temporary residents in the United States

Eunsil Lee and Nam-Kyu Park

Abstract
The cross-cultural temporary resident population is one of the fastest growing cultural groups in the United States. However, their housing experiences in the new environment have not been extensively studied. Thus, the current study sought to examine meanings of dwelling attributes for cross-cultural temporary residents in the host country. In order to obtain insights into not only functional meanings but also underlying values, a conceptual framework was developed based primarily on Gutman's (1982) means-end theory and Rapoport's (1988) three levels of meaning. A case study was conducted using in-depth laddering interviews with ten Korean temporary residents in the Lansing, Michigan, area. Seven dwelling attributes emerged from interviews: two satisfactory attributes (i.e., surrounding natural environment and architecture) and five unsatisfactory attributes (i.e., carpeted floor, interior lighting, acoustics, bathroom, and entryway). Data were analyzed utilizing the measurement of means-end chain (Gutman, 1982), identifying the lower-level, everyday meanings as well as middle-level, latent meanings of dwelling attributes. A hierarchical value map was used to illustrate the interrelationships among the attributes, consequences, and values. Results revealed that dwelling attributes in participants' current housing did not effectively satisfy their fundamental needs. In particular, carpeted floor was linked to the greatest number of negative meanings. Moreover, the cultural aspects of Korean housing affected the meanings of dwelling attributes in participants' current homes. Findings suggest design professionals, facility managers, and policymakers must understand how people from other cultures attach different meanings to the dwelling attributes in their homes and provide more culturally responsive residential environments.

Keywords
Cross-cultural; temporary residents; meanings of dwelling attributes; means-end theory

Introduction
Globalization of the world economy increases international travel for study and work abroad purposes. For example, during the last two decades, the United States has experienced significant growth in the number of international visitors, increasing from 16.1 million in 1989 to 30.8 million in 2004 (U.S. Department of Homeland Security, 2006). According to the U.S. Department of Commerce (2007), this number is expected to continue to increase. Due to differences in residential environments from one culture to another (Rapoport, 1969), these temporary residents from different cultures bring with them...
unique cultural housing experiences. Dwelling features in the host country may not be able to support their lifestyles and will create stress physically and emotionally (Adjukovic, 1998; Adler, 1995). According to Hadjiyanni (2005), dwellings in the United States are not suitable for people from other cultures. Designers should have a good grasp for the needs of diverse cultures in housing design, yet current research has not adequately addressed how temporary residents from different cultures experience their dwelling attributes in the host country.

Thus, given the increasing numbers in and diversity of cross-cultural temporary residents, as well as the limited research about their housing experiences, the purpose of this study is to explore meanings of dwelling attributes for cross-cultural temporary residents in the host country.

Based on Gutman's (1982) means-end theory and Rapoport’s (1988) three levels of meaning as a theoretical underpinning, the present study seeks to obtain insights into not only functional meanings but also underlying values. Means-end theory (Gutman, 1982) posited how physical attributes of products have personal meanings for users based on the assumption that a product is a user’s means to accomplish a desired end. The present study also attempts to explore the feasibility of means-end theory to examine meanings of dwelling attributes for cross-cultural temporary residents.

Using the measurement and analysis of Gutman’s means-end theory (1982), a qualitative case study was employed with ten Korean temporary residents in the Lansing, Michigan, area. In-depth interviews were conducted focusing on participants’ dwelling attributes, consequences, and personal values. Results were analyzed utilizing implication matrices and hierarchical value maps to discover dominant perceptions and behaviors (Gutman, 1982). The findings of the study are expected to provide a greater understanding and knowledge of cultural differences in the meanings of dwelling attributes and could be practically applied in residential design. The main research questions addressed in the present study were:

1. What meanings do Korean temporary residents attach to the specific dwelling attributes in their current housing environment?
2. How do cultural backgrounds relate to meanings of dwelling attributes?
3. Can means-end theory be useful in describing relationships between cross-cultural temporary residents and dwelling attributes?

Meaning of Built Environment

The meaning of home has been studied extensively based on the notion of home as a whole (Easthope, 2004; Kenyon, 1999; Moore, 2000; Sixsmith, 1986). However, meanings of dwelling can be created for a home as a whole as well as while people use and experience their dwelling attributes in the process of dwelling (Coolen, 2005). Meaning is not an intrinsic characteristic existing in an object, but is developed in the course of interrelationships between the object and the user (Blumer, 1969). Consequently, an object may offer different meanings to different users. Depending on the diverse possible activities, a variety of meanings can be attached to an object. Thus, on the basis of the ecological perspective, Coolen (2005) defined the meaning as the functional relationship between a person and an object.

In identifying meanings in terms of the functional
relationship between the user and the built environment, studies indicated different levels of meanings can be produced. For example, in a study of meanings in the urban environment from the semiotics point of view, Krampen (1979) claimed that the function of architectural attributes conveys meanings in two levels: (1) a first meaning from the direct function of the object and (2) a second-order meaning produced by socially maintained use of the object. According to Krampen (1979), cultural codes explain the meaningful relationships between people and building attributes by the signification created through the secondary use.

Similarly, Rapoport (1988) characterized the meaning of built environment at three different levels. High-level meanings relate to cosmologies, world views, philosophical systems, etc.; middle-level meanings such as identity, privacy, status, wealth, power, etc., are called latent functions; and lower-level, everyday meanings (e.g., accessibility, seating arrangements, movement) are called manifest functions. Specific dwelling attributes in the built environment are associated with lower- and middle-level meanings, while a dwelling as a whole tends to have mostly higher-level meanings (Coolen, 2005; Rapoport, 1988).

It is assumed that temporary residents from different cultures will attach meanings to their dwelling attributes in different levels. The present study seeks to discover all levels of meanings including not only immediate functions (Krampen, 1979) or manifest function of dwelling attributes (Rapoport, 1988) but also from socially sustained second-order use (Krampen, 1979) or latent function of dwelling attributes (Rapoport, 1988).

**Means-End Theory**

Means-end theory (Gutman, 1982) originates from market and consumer research that examines relationships between consumers and products. The theory presents a hierarchical model of three levels of meaning: attributes, consequences, and values (Reynolds & Gutman, 1984; Reynolds & Perkins, 1987). The first level of meaning is attributes, which are products’ physical or observable characteristics. The second level of meaning is consequences, which reflect tangible or intangible personal meanings derived from attributes. Direct and tangible outcomes are considered functional consequences whereas emotional outcomes experienced by the person using the product are called psychological consequences. According to Gutman (1982), consequences can be positive or negative, depending on the relationship to people’s personal values. As such, people choose products whose attributes produce their desired consequences and minimize their undesired consequences. In turn, the desirability or importance of these consequences is determined by personal values. Thus, values are considered to be key factors underlying consumers’ preferences and choice behaviors (Gengler, Mulvey, & Oglethorpe, 1999). The final level of meaning in means-end theory is personal values, which are preferred states of being, major goals, needs, or ideals people aspire to achieve.

Investigating means-end chains of attributes, consequences, and values popularly relies on laddering, a specialized in-depth interview technique (Gutman, 1982). To facilitate this laddering technique, researchers analyze consumers’ purchases through a series of “why is that important to you” questions to reveal key personal reasons that make an actual purchase
happen. Through this laddering approach to interviewing, the three different levels of meanings are identified with concrete meanings at the attribute level and more abstract meanings at the consequence and personal value levels.

Although the means-end theory has been heavily utilized in marketing and consumer research, few researchers have used means-end theory to examine how people attach their personal meanings to their dwelling attributes. Coolen and Hoekstra (2001) investigated values as determinants of preferences for dwelling attributes using means-end chain theory. Coolen and colleagues subsequently utilized means-end chain theory in several studies exploring meanings of dwellings for a particular residential project in the Netherlands (Coolen, 2005; Coolen & Meesters, 2006; Meesters, 2006; Zwarts & Coolen, 2006). These studies shed some light on the possibilities of applying means-end theory when exploring meanings of dwelling features, as in the current study.

**Conceptual Framework**

The main focus of the present study is to explore how temporary residents from different cultural backgrounds interact with specific dwelling features in their homes and attach personal meanings to them. To obtain all different levels of meanings, the conceptual framework was developed based on the ‘meaning structure’ as defined in Zwarts and Coolen (2006), which was primarily derived from Rapoport’s (1988) three levels of meaning and means-end chain (Gutman, 1982). Although Rapoport’s layering of meanings has not been effectively applied in previous empirical studies (Coolen & Hoekstra, 2001), this layering of meaning is expected to be useful in identifying not only functional meanings of dwelling attributes, but also the reasons why those functional meanings are attached.

Table 1 presents the conceptual framework of the current study, illustrating the relationships between the layers of meanings (Rapoport, 1988) and means-end chain (Gutman, 1982). In this study, attributes of the means-end chain were considered to be dwelling attributes, and consequences derived from the dwelling attributes were considered to be lower-level meanings, which was the manifest function of the attributes. Values that are the underlying goals, needs, or motivations for consequences of dwelling attributes were considered to be the middle-level meaning, which was the latent function of the attributes.

The current study utilized Schwartz’s (1992) universal value for the value categories. Schwartz (1992) defined value as “a conception of the desirable that influence the way people select action and evaluate events”; consequently, Schwartz (1994) suggested ten types of universal values using 56 specific personal value items.

<table>
<thead>
<tr>
<th>Value</th>
<th>Middle-level meanings (Latent functions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consequences</td>
<td>Lower-level meanings (Manifest functions)</td>
</tr>
<tr>
<td>Attributes</td>
<td>Dwelling attributes</td>
</tr>
</tbody>
</table>

Table 1: Conceptual Framework for the Present Study (Source: Authors).
Methods

Sample
A qualitative case study was used to investigate meanings of dwelling attributes using the measurement and analysis of means-end chain (Gutman, 1988). In-depth interviews were conducted with ten Korean housewives who viewed their residence in the United States as temporary, ranging about six months to several years. Participants lived in two specific apartment complexes in the Lansing area, thereby sharing more homogeneity in their housing conditions. Participants’ ages ranged from 32 to 55 years old. Participants’ length of residence in the United States ranged from approximately 6 to 18 months, with the total planned time of 1 to 2 years of residence.

Data Collection and Analysis
Laddering, a semi-structured interview technique, was used to elicit data on dwelling attributes, consequences, and personal values. Measurement of means-end chain (Reynolds & Gutman, 1999) for this study was done in the following phases: 1) eliciting attributes; 2) constructing individual means-end chains; 3) selecting attributes; and 4) aggregating and analyzing data.

Eliciting attributes. Respondents were first asked to list dwelling attributes that they felt were satisfactory and unsatisfactory in their current homes. Nine satisfactory attributes were mentioned: surrounding natural environment, architecture, closet, quietness, zoning, kitchen opens to the living room, service facilities, location, and school district. Meanwhile, ten unsatisfactory attributes were stated: carpeted floor, interior lighting, acoustics, bathroom, entryway, size of rooms, poor ventilation, type of heating, outdated appliances, and high rent.

Constructing individual means-end chains using laddering interviews. Once satisfactory and unsatisfactory attributes were identified, the interviewer asked respondents why they felt the features were particularly satisfactory or unsatisfactory. The interview continued to ask “why/how did you feel like that?” or “why is it important to you?” to develop—with the respondents—the means-end chains through laddering.

Selection of the attributes. To attain a higher chance of meaningful attributes-consequence-value chains, dwelling attributes mentioned by more than 50% of respondents were chosen for use in further analysis (Coolen, 2005). A total of seven attributes, including two satisfactory attributes (surrounding natural environment and architecture) and five unsatisfactory attributes (carpeted floor, interior lighting, acoustics, bathroom, and entryway), were mentioned by more than 50% of respondents.

Aggregation and analysis. The entire set of ladders for the seven attributes across respondents was recorded on a coding form and classified into attributes, consequences, and values. When developing these codes, special attention was given to preventing categories from becoming too broad and to preventing valuable meaning from being obscured. The implication matrix represents the number of times each element leads to another on the ladder (Reynolds & Gutman, 1988). Using coded individual ladders, implication matrices were constructed to display the aggregated number of connections among each attribute,
consequence, and value—both directly and indirectly—across all interviews.

The hierarchical value map was constructed from data aggregated in the implication matrix to interconnect all significant chains in a manner that is easy to read and interpret (Reynolds & Gutman, 1988). The hierarchical value map represents all respondents’ ladders in a single map that describes all relevant relations and shows dominant perceptual orientations. A typical approach to building the map involves establishing a cut-off level of relations (i.e., all connections below this level are ignored) to find the most informative set of relations. Reynolds and Gutman (1988) originally suggested a cut-off level of 4 direct relations for a sample of 50 respondents; however, as this study’s sample size was only 10, the cut-off was not applied to include as many relations as possible.

In this study, the hierarchical value map was presented in the manner proposed by Klenosky et al. (1993). Each element is indicated by a circle, the size of which is proportional to the number of mentions by respondents. White circles represent attributes, light grey circles consequences, and dark grey circles values. Finally, the relative strengths of association between elements are represented by the width of the lines connecting circles.

**Results**

The results revealed that two attributes, surrounding natural environment and architecture, were perceived as satisfactory with positive meanings. Meanwhile, interior dwelling attributes used in everyday activities, namely, carpeted floor, interior lighting, acoustics, bathroom, and entryway, were perceived as unsatisfactory with negative meanings.

**Meanings of Satisfactory Attributes**

Surrounding natural environment. The surrounding natural environment was associated with seven consequences and six values (see Figure 1). The predominant consequences were ‘enjoying view’ and ‘relaxation’. ‘Exotic,’ ‘healthy living,’ and ‘purifying body and mind’ were also mentioned as consequences of the surrounding natural environment. Meanwhile, the six values associated with surrounding natural environment included ‘emotional security’ (with the most number of relations), ‘enjoying life,’ ‘quality of life,’ ‘unity with nature,’ ‘pleasure,’ and ‘excitement.’

All consequences of the surrounding natural environment were positive, indicating that this attribute fulfilled participants' underlying values.

The hierarchical value map of surrounding natural environment in Figure 1 visually represents the interrelationships among the attributes, consequences, and values. One of the stronger chains, ‘enjoying view’–‘relaxation’–‘emotional security’, indicates that respondents attached a feeling of relaxation to the surrounding natural environment by enjoying views and their value of emotional security was fulfilled. The hierarchical value map further showed that ‘enjoying view’ fulfilled the values of ‘pleasure’ and ‘unity with nature’. The chain of ‘surrounding natural environment’–‘fresh air’–‘healthy living’–‘quality of life’ indicated that respondents attached the meaning of ‘healthy living’ to the attribute ‘fresh air,’ thereby fulfilling the value ‘quality of life’. The chain of ‘surrounding natural environment’–‘living creatures’–‘exotic’–‘excitement’ indicated that respondents attached feelings of exoticism to
the small animals around their current housing. According to respondents, small animals around their current home, such as squirrels and fireflies, were exciting to see because it is unusual to find such animals near residential areas in Korea.

**Architecture.** As Figure 2 demonstrates, architecture was associated with six attributes, six consequences, and six values. Respondents expressed that a ‘building orientation’ (n = 3) facing south was an important attribute in their architecture, followed by ‘low-rise building’ and ‘living close to the ground.’ Among the six consequences, ‘enjoying daylight’ (n = 3) and ‘physical comfort’ (n = 2) showed stronger associations than the others (i.e., ‘attractive,’ ‘feeling stable,’ ‘enjoying view,’ and ‘eco-friendly’). Among the six values of architecture, ‘tradition’ (n = 3) and ‘quality of life’ (n = 3) were shown to be their strongest values, followed by ‘enjoying life’ and ‘health and safety.’

![Hierarchical Value Map (HVM) of 'surrounding natural environment'](Source: Authors)
The hierarchical value map of architecture (Figure 2) displays two chains from ‘building orientation’ showed stronger associations than others. The connection between ‘building orientation’ and ‘tradition’ confirmed the importance of cultural traditions about orienting the building to the south. The chain ‘building orientation’-‘enough daylight’-‘physical comfort’-‘quality of life’ indicated that respondents’ preference for a building orientation facing south was not only a result of tradition, but also due to quality of life by being physically comfort thanks to sufficient daylight. Thus, although architecture was considered to be a satisfactory attribute in their current housing, participants who lived in a building facing directions other than south attached negative meanings to it related to insufficient daylight and physical discomfort. In relation to ‘low-rise building,’ respondents attached meanings of ‘attractive’ and ‘feeling stable,’ which fulfilled values of ‘enjoying life,’ ‘health and safety,’ and ‘unity with nature.’ When compared to large-scaled, high-rise apartment complexes—typical building types in most cities in Korea—respondents were pleased with living in a ‘low-rise’ building.
Unsatisfactory Attributes

Carpeted floor. Among the five unsatisfactory attributes, carpeted floor was associated with the greatest number of negative consequences. Figure 3 indicates that the predominant consequences for carpeted floor were ‘unpleasant to touch’ (n = 7), ‘unhygienic’ (n = 5), and ‘uncomfortable’ (n = 5), followed by ‘desire to modify,’ ‘hard to keep clean,’ and ‘causing allergy.’ Meanwhile, the major values related to carpeted floor were ‘health and safety’ (n = 15), ‘quality of life’ (n = 8), ‘emotional security’ (n = 5), and ‘tradition’ (n = 5). Consequences of carpeted floor were predominantly negative, indicating that it did not support their underlying values.

The hierarchical value map of carpeted floor in Figure 3 clearly presents specific reasons related to each negative meaning attached to this factor. ‘Health and safety,’ the value in the biggest circle in the map, showed strong associations with three consequences: ‘unhygienic,’ ‘causing allergy,’ and ‘hard to keep clean.’ Respondents believed that a carpeted floor did not fulfill their important values for health and safety because they perceived
the carpeted floor to be unhygienic, cause allergies, and be inconvenient to clean. The strongest consequence, ‘unpleasant to touch,’ was linked to two behavioral consequences: ‘desire to modify’ and ‘wearing slippers,’ indicating that respondents made efforts to reduce their uneasiness to touch carpet directly and eventually achieve better a quality of life in their housing. Respondents also expressed their discomfort with a carpeted floor in that it prevented them from fulfilling their ‘emotional security’ in their housing environment.

The link between ‘hard to adapt’ and ‘tradition’ indicated that respondents’ value for cultural tradition was one of the most significant reasons for their aversion to carpeted floors. Carpets are rarely used as floor covering material in homes in Korea. Since radiant floor heating systems (called On-dol) are still generally used in Korea, the link between ‘missing On-dol’ and ‘tradition’ also indicated respondents’ attachment to their traditional On-dol in their homes in Korea.

**Interior lighting.** Figure 4 indicates that interior lighting was linked to seven consequences and five values. The primary consequence of interior lighting was ‘too dark’ (n = 9), followed by ‘being
frustrated’ (n = 6) and ‘hard to adapt’ (n = 5). Participants indicated a ‘wish for a brighter room’ (n = 4), and some (n = 4) indicated they had already taken action to fix their interior lighting condition. Among the five values linked to interior lighting, ‘emotional security’ (n = 7) was found to be the most significant with the maximum number of relations, followed by ‘tradition’ (n = 6) and ‘health and safety’ (n = 6).

The hierarchical value map of interior lighting in Figure 4 clearly shows that all consequences were derived from the meaning of ‘too dark.’ The strong link of ‘too dark’-‘being frustrated’-‘emotional security’ indicated that dark interior lighting causes respondents to feel frustrated because their emotional security was not fulfilled well. Meanwhile the ‘tradition’-‘hard to adapt’ link derived from the attribute ‘no ceiling light.’ This chain suggested another reason for negative meanings attached to interior lighting. As bright general lighting from the ceiling is the norm in Korean homes, the localized movable lighting arrangement and lack of general lighting in respondents’ current homes were unfamiliar to them and hard to adapt to. The chain of ‘too dark’-‘inadequate for reading’-‘health and safety’ revealed another problem of dark lighting: poor visibility. Two consequences—namely, ‘wish for a brighter room’ and ‘trying to fix’—were linked to ‘too dark,’ suggesting behavioral consequences to improve respondents’ health and safety in their current homes.

**Acoustics.** Figure 5 indicates that the acoustics factors were linked to seven consequences and four values. ‘Noises from neighbors’ (n = 7) due to poor acoustic conditions and ‘squeaks’ (n = 3) caused by wood-framed structures were the main attributes of acoustics. The main consequences included not only perceptual consequences such as ‘sensitive about making noises’ (n = 4), ‘being irritable’ (n = 4), and ‘missing home in Korea’ (n = 2), but also behavioral consequences such as ‘controlling children’ (n = 3) and ‘careful not to make noises’ (n = 2). The major values derived from consequences include ‘self-discipline’ (n = 6) and ‘emotional security’ (n = 5).

The hierarchical value map of acoustics in Figure 5 shows the main consequences derived from ‘noises from their neighbors.’ The consequence ‘sensitive about making noises’ was linked to two behavioral consequences—‘controlling children’ and ‘careful not to make noises’—indicating that noises from neighbors made respondents more sensitive about making their own noises in order not to bother other people. For example, respondents with young children (n = 3) mentioned that they did not allow their children to jump or run inside. Respondents also indicated that they themselves tried to walk quietly at home, especially late at night and early in the morning. Both ‘noises from neighbors’ and ‘HVAC noises’ were linked to ‘being irritable,’ which prevented respondents from fulfilling their ‘emotional security’ in their homes.

**Bathroom.** Figure 6 shows that bathroom was linked to eight consequences and three values. The main attribute for bathroom was ‘no floor drain’ (n = 8), which is a typical attribute of bathrooms in Korea. The consequences of bathroom present two contrasting meanings. Although negative meanings were more prevalent with ‘inconvenient to clean’ (n = 6) and ‘feel unclean’ (n = 2), positive meanings
also emerged, such as ‘getting more adapted’ (n = 3) and ‘more refreshing’ (n = 3).

Interview data demonstrated that participants who had lived in their current homes more than one year (n = 3) expressed that, the longer they remained, the more they adapted to the bathroom without a floor drain. These participants also indicated that changes in their perceptions occurred from negative to positive, such as ‘more refreshing’ by ‘getting more adapted’ in regard to the same attribute. As a result, the bathroom was simultaneously linked to positive as well as negative meanings, although the negative consequences were dominant. The main values of bathroom include ‘cleanliness’ (n = 8), ‘tradition’ (n = 6), and ‘enjoying life’ (n = 3).

The hierarchical value map of bathroom in Figure 6 illustrates two distinct major paths linked from ‘no floor drain,’ representing the two opposite attitudes about this attribute. The negative meaning chain of ‘no floor drain’–‘inconvenient to clean’–‘tradition’ tended to be more evident among newcomers. Newcomers...
were not satisfied with a bathroom without a floor drain in their current homes because they were not able to clean their bathroom floor with soap and water, as they did in Korea. On the other hand, the chain of ‘no floor drain’-‘getting more adapted’-‘more refreshing’-‘cleanliness’-‘enjoying life’ was more common among those who had adapted to their bathroom condition and felt more refreshed in their bathroom without any floor drain; in other words, the longer they stayed in their current housing, the more changes occurred in a positive direction.

**Entryway.** Figure 7 shows that the entryway was linked to five consequences and four values. Since removing one’s shoes inside the home is the norm for Koreans, ‘no shoes amenities’ in the entryway was the main attribute for the resulting consequences and values. ‘Inconvenient to organize shoes’ (n = 6), ‘not functional’ (n = 4), ‘not suited for lifestyle’ (n = 3), ‘unhygienic’ (n = 2), and ‘looks awkward and cluttered’ (n = 2) were consequences related to the entryway. The important values were ‘pleasure’ (n = 6), ‘tradition’ (n = 3), ‘health and safety (n = 2), and ‘cleanliness’ (n = 1).
Underlying Values

Table 2 indicates that the most frequently shared values were ‘health and safety’ \(n = 25\), ‘tradition’ \(n = 23\), ‘emotional security’ \(n = 21\), and ‘quality of life’ \(n = 14\), followed by ‘enjoying life’ \(n = 9\), ‘cleanliness’ \(n = 9\), ‘pleasure’ \(n = 8\), ‘self-discipline’ \(n = 6\), ‘family security’ \(n = 3\), and ‘unity with nature’ \(n = 3\). The findings revealed that most of these frequently shared values were not effectively achieved through dwelling attributes in their current housing. Respondents perceived their dwelling attributes to be unsatisfactory not only when their fundamental needs—‘health and safety,’ ‘emotional security,’ and/or ‘quality of life’—were not supported, but also when their traditional cultural amenities were not supported. Although ‘quality of life’ was not a value item included in Schwartz’s (1994) value types, the current study found it to be an important value related to the residential environment.
Discussion and Conclusion

The present study sought to (1) investigate meanings of dwelling attributes for cross-cultural temporary residents focusing on the layers of meanings to examine both functional relationships and underlying values; (2) identify how cultural background affects meanings of dwelling attributes; and (3) explore the feasibility of means-end theory (Gutman, 1988) when identifying layers of meanings attached to dwelling attributes. Based on the conceptual framework, the manifest function (i.e., lower-level, everyday meanings) of dwelling attributes were investigated through consequence categories while middle-level, latent meanings of dwelling attributes were examined through value categories (Coolen, 2005; Rapoport, 1988). The interrelationships between consequences and values for each of the seven attributes were illustrated in the hierarchical value maps (see Figures 1 through 7). The findings demonstrated that the dwelling attributes were associated with diverse lower- and middle-level meanings for Korean temporary residents.

A summary of meanings of the seven dwelling attributes follows. The salient manifest meanings of surrounding natural environment were ‘enjoying view’ and ‘relaxation,’ which related to respondents’ latent meaning of ‘emotional security.’ Meanwhile, the important latent meaning of architecture was ‘tradition’ regarding the building orientation facing south, which resulted in the manifest meanings of ‘enjoying daylight’ and ‘physical comfort.’

Carpeted floor had the greatest number of negative manifest meanings, such as ‘unhygienic,’ ‘causing allergy,’ and ‘hard to keep clean,’ which were related to the latent meaning of ‘health and safety.’ The manifest meaning ‘unpleasant to touch’ caused two behavioral consequences: ‘wearing slippers’

Table 2: The Frequency of Value Categories Resulted from the Analysis of In-depth Interviews with Participants of the Present Study. (Source: Authors).

<table>
<thead>
<tr>
<th>Values</th>
<th>Satisfactory</th>
<th>Unsatisfactory</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health and safety</td>
<td>2</td>
<td>23</td>
<td>25</td>
</tr>
<tr>
<td>Tradition</td>
<td>3</td>
<td>20</td>
<td>23</td>
</tr>
<tr>
<td>Emotional security</td>
<td>4</td>
<td>17</td>
<td>21</td>
</tr>
<tr>
<td>Quality of life</td>
<td>5</td>
<td>9</td>
<td>14</td>
</tr>
<tr>
<td>Enjoying life</td>
<td>4</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>Cleanliness</td>
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<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Pleasure</td>
<td>2</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>Self-discipline</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Family security</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Unity with nature</td>
<td>3</td>
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<td>3</td>
</tr>
<tr>
<td>Excitement</td>
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<td>2</td>
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</tr>
<tr>
<td>Sense of belonging</td>
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<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Protecting the enviroment</td>
<td>1</td>
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and ‘desire to modify’ in order to improve the latent meaning ‘quality of life.’ The manifest meanings of ‘missing On-dol’ and ‘hard to adapt’ derived from the latent meaning ‘tradition.’ Meanwhile, the most notable manifest meaning of interior lighting was ‘too dark,’ which was associated with most other manifest meanings, including ‘being frustrated,’ ‘hard to adapt,’ ‘wish for brighter room,’ and ‘trying to fix.’ The major latent meanings were ‘emotional security,’ ‘tradition,’ and ‘health and safety,’ which were not effectively fulfilled by interior lighting.

The main attribute causing negative meanings of acoustics was ‘noises from neighbors.’ The manifest meaning ‘sensitive about making noises’ caused two behavioral consequences: ‘controlling children’ and ‘careful not to make noises’ due to the latent meaning of ‘self-discipline.’ On the other hand, the dominant manifest meaning of bathroom was ‘inconvenient to clean’ due to the absence of a floor drain system, although ‘getting more adapted’ and ‘more refreshing’ were the manifest meanings of the same attribute attached by those who had lived in their current dwelling for longer periods. Finally, the most salient manifest meanings for entryway were ‘inconvenient to organize shoes’ and ‘not suited for lifestyle’. The main latent meanings were ‘pleasure’ and ‘tradition,’ which were not effectively fulfilled by entryways.

These results support Hadjiyanni’s (2005) findings and revealed that these important latent functions of dwelling attributes were not successfully achieved through respondents’ current dwelling conditions. The overwhelmingly high number of unachieved values indicates that housing attributes in their current housing did not effectively satisfy their fundamental needs. In particular, carpeted floors were linked to the greatest numbers of negative meanings, representing respondents’ perceptions that carpeted floors prevented them from achieving health and safety—one of the most fundamental needs.

The results also showed that consequences related to each attribute include behavioral consequences as well as perceptual consequences. Behavioral consequences for carpeted floor, interior lighting, and acoustics indicated that respondents associated certain adjustments in their behaviors or in their housing attributes as efforts to reduce their negative meanings. As Morris and Winter (1978) suggested, housing dissatisfaction leads families to involve themselves in various adjustment behaviors. Thus, these behavioral consequences demonstrated that respondents tried to reduce their dissatisfaction via various adjustment behaviors.

This study’s second aim was to identify how cultural aspects of housing influence the meanings of housing attributes for Korean temporary residents. This study’s findings revealed the latent meaning ‘tradition’ was significant in five attributes (i.e., architecture, carpeted floor, interior lighting, entryway, and bathroom), indicating that cultural aspects of Korean housing affected the meanings of dwelling attributes in their current homes. Considering that all the negative attributes except acoustics were strongly attached to tradition, interior dwelling features in their current housing were not well-suited to the lifestyles of those from different cultures.
Moreover, the results indicate that it is important for design professionals, facility managers, and policymakers to understand how differently people from other cultures attach meanings to the dwelling attributes in their homes. Given the increasing numbers of temporary residents from different cultures, housing attributes should be more culturally responsive so as to support their lifestyle and enhance their quality of life during their stay in the host country. The results herein demonstrated the importance of greater variability in dwelling attributes in order to satisfy varying degrees of cultural needs for different groups within our society.

The final aim of this study was to explore how means-end chain theory is useful in describing relationships between cross-cultural temporary residents and the housing attributes in their current housing. The results of this study showed means-end chain theory was effective in examining meanings of housing attributes and illustrating the relationship between housing attributes and cross-cultural temporary residents. Through the data processing, attributes and consequences of these attributes were identified. The analysis also revealed how physical attributes of housing gain personal meaning for cross-cultural temporary residents.

The hierarchical value maps effectively represented not only how respondents perceived and reacted to their housing attributes, but also why they have positive or negative meanings for the specific housing attributes. The most obvious benefit from the process was identifying underlying values attached to their perceptions and behaviors. Thus, it can be proposed that means-end theory can be effectively applied in the context of housing research to obtain meaningful results and help understand the relationships between housing attributes and cross-cultural residents.

The results of this study reflect attributes, consequences, and underlying values of the temporary residents from different culture. However, some limitations offer opportunities for further research. For instance, larger samples and households from different cultural backgrounds are warranted in order to expand the knowledge of meanings of residential environment.

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The Meanings of Dwelling Attributes for Temporary Residents from Different Cultures: The Case of Korean Temporary Residents in the United States

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