Gazi University Journal of Science
GU J Sci
26(2):319-330 (2013)

URBAN CODES: Familiarity, Impressiveness, Complexity and Liking in Façades of Houses

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Received:24/07/2012 Revised: 07/11/2102 Accepted: 08/11/2012

ABSTRACT

This study aims to see the local residents of Kahramanmaraş who are not in the design profession, to know how they find connotative meanings in house styles concerning different cultures and to see how these meanings differ according to socio-demographic qualities. It is hypothesized that foreign examples would be preferred as a 'social status' indication compare to the domestic ones which might be considered as 'warm'. Regarding this, a total of 102 respondents, composed of middle-aged people (25 female, 26 male) and students (25 female, 26 male) have evaluated the façades of 12 houses through using five-point semantic differential scales under four headings: *Familiarity, Impressiveness, Complexity* and *Liking*. The results have shown that different styles with different forms, elements and materials have been evaluated differently by the respondent groups. While the most impressive foreign vernacular examples were defined as the 'social status' indication, the most familiar local vernacular examples were indicated as the 'warmest' house façades. Amongst these results, it was also noted that the students appreciated the foreign vernacular examples and found them attractive than the middle age respondents.

Keywords : *Symbolic Meaning, Familiarity, Impressiveness, Liking, Complexity.*

1. INTRODUCTION

Symbols used in defining the meanings of the objects used or consumed everyday in addition to their practical purposes have become tools expressing social status, cultural values, economic and political situations, and thoughts and feelings. One of the indispensable elements of human life, symbolization, is an integral part of all the objects fulfilling requirements, such as shelter, eating, drinking, and dressing. In this respect, structures both undertake functions that facilitate human life and symbolize certain social, cultural or economic values of societies and personal opinions and thoughts. Façades created within the structures is a shell system limiting internal and external spaces and the factors that characterize façades are categorized into two: surface and volumetric factors. Surface factors help establish the visual relationship with the structure through the surface lines, color harmony, texture of surface materials, and the rhythm of surface elements. Volumetric factors provide semantic formation which is the three-dimensional perception. As stated by Rasmussen, a building is judged by its exterior appearance [1]. The most important element in the formation of these spaces is undoubtedly the volumetric forms and surface factors of the buildings.

Urban architecture forms a physical environment within which cultural knowledge is coded tectonically through the process of the exogenous evolution of mankind where the society is transformed first from oral culture to written culture and then to visual culture. In other words, the city transmits messages through these codes. It could be stated that architectural meanings are the result of the translation of formal codes to contextual codes and vice versa. When urban architecture is

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considered a disciplined art of creating forms, the process of formal coding of the content becomes significant in architectural meanings and experiences.

According to Gibson's theory of ecological optics, stimulating factors from the environment carry information in visual communication. In the process of observer's absorbing this information and rendering this information effective, the role of the past experiences, learned meanings and behaviors and attitudes developed towards these meanings is important. In this respect, it is stated that the activation and transformation of objective information into concrete meanings takes place only within a structuring at different levels. It is also emphasized that there are various "meaning" levels and "signs" and "icons" at the lowest levels of these meanings undertake a decisive role in the abovementioned process [2]. Signs and symbols are the items that convey the meaning of the object to us. According to Langer, our real-world opinion is a background pattern composed by signs and symbols and symbolism is the "texture" of this pattern. The continuously growing meaning or meanings within this framework are symbolic meanings and mental associations [3]. In this respect, the city could be thought as a background pattern formed by signs and symbols. The physical environment constituting urban architecture is the texture of this pattern.

The key concepts of this study, symbolic meaning, style, and code, were intersected with housing, a design area with an intense architectural production. In addition to its being a widespread architectural practice, housing is as well the meeting point of everyday life with architecture and architectural culture and an important personal symbol of social and economic status. The codes, styles, formation processes and influencing factors of the structures and the messages expressed and the interpretations of the residents were included within the scope of work. This study aimed at observing how environmental experience and cognition take place, and the extent to which cognitive structure schemes affect the interpretations. The relationship between *symbolic meaning* [4, 5] and style, in this study, were investigated under the titles "liking, impressiveness, complexity and familiarity". In addition, the relationship between familiarity and other titles (*liking, impressiveness, complexity*) was identified in domestic and foreign detached housing façades. The main hypothesis of the study was that some respondents would prefer foreign examples as an indicator of status, while some would prefer domestic examples which reflect their culture.

2. RESEARCH SETTINGS

This study aimed to clarify the conceptual and symbolic meanings of different housing styles and sought to indentify how non-designer residents who have lived in Kahramanmaraş for many years understand the *connotative meanings* [6, 7] of domestic and foreign styles and how these meanings diversify according to the region. The local people in Kahramanmaraş, one of the oldest cities and cultural centers of Anatolia, have claimed their beliefs, traditions, customs and culture over the centuries. Two aspects of the city, not being cosmopolitan and still bearing its national characteristics, were important in terms of conducting the survey in Kahramanmaraş.

2.1. Participants

In order to determine whether there is a change in respondents' preference in familiarity, impressiveness, complexity, and liking according to age, 102 people were surveyed categorized in two different age groups. The average age of the students was 21 (min. 18 - max. 27), the average age of different professions is 50 (min. 40 - max. 57). 51% of the respondents in each group were male and 49% were female (see Table 1).

Table 1. Respondents' age by gender

Gender	**Average Age**				**Total**	
	21 (18-27)		50 (40-57)			
	n	**%**	**n**	**%**	**n**	**%**
Male	26	25,5	26	25,5	52	51
Female	25	24,5	25	25,5	50	49
Total	51	50	51	50	102	100
n: Number of respondents %: Percentage value						

The first group consisted of university students who were enrolled to disciplines other than design, while the second consisted of professionals and retirees with no connection to the profession of design.

It was foreseen in the survey that where respondents have spent most of their lives would influence *familiarity* with the housing façades (Figure 10). It was expected, in particular, that the domestic façades would influence the preference of *familiarity* with the close environment. 60% of the respondents stated that they have lived for the longest period in Kahramanmaraş, while 5% in a village or town near Kahramanmaraş and 35% in another city (see Table 2).

Table 2. Respondents' age and gender by time spent in Kahramanmaraş

		in K. Maras %	near K. Maras %	another city %	Total %
Age	21 avg.	13	4	33	50
	50 avg.	47	1	2	50
Total %		60	5	35	100
Gender	Male	31	3	15	51
	Female	29	2	20	49
Total %		60	5	35	100

2.2. Visual Images

The detached housing examples representing the domestic and foreign styles were found from architectural magazines, books and several web sites, and then, these were selected according to structural elements, number of storey, region they are located in and so forth.

12 images, 6 from Turkey and 6 from abroad reflecting foreign styles, were chosen in the first phase of preparing the façade drawings to be shown to the respondents. By taking into consideration the effect of construction materials on environmental symbolism, 3 images of domestic examples were warm in terms of materials used (brick, brick, wood, etc.), while the other 3 were cold (stone, concrete, etc.). The same consideration was applied to the images from foreign countries.

The images were drawn by using a computer program in order to obtain the same perspective and the aspect ratio. Thus, landscape elements (trees, people, urban furniture, etc.) that could hinder the legibility of the façades, and therefore, lead to misunderstanding, were not included in the images. The use of drawings in the survey overcame another variable, the factor of color, which could affect preference. Real-like textures were obtained with the use of charcoal to add factors such as material, light and shadow. These 12 cards were placed on a slip of paper in a mixed sequence, in a manner that all the images were visible at the same time to the respondents (Figure 1).

A house example from Safranbolu area (image 3)

Figure 1. The original version of an image used in the survey, the drawing and the final version

Figure 2 shows the final version of all the selected pictures in the survey after these processes.

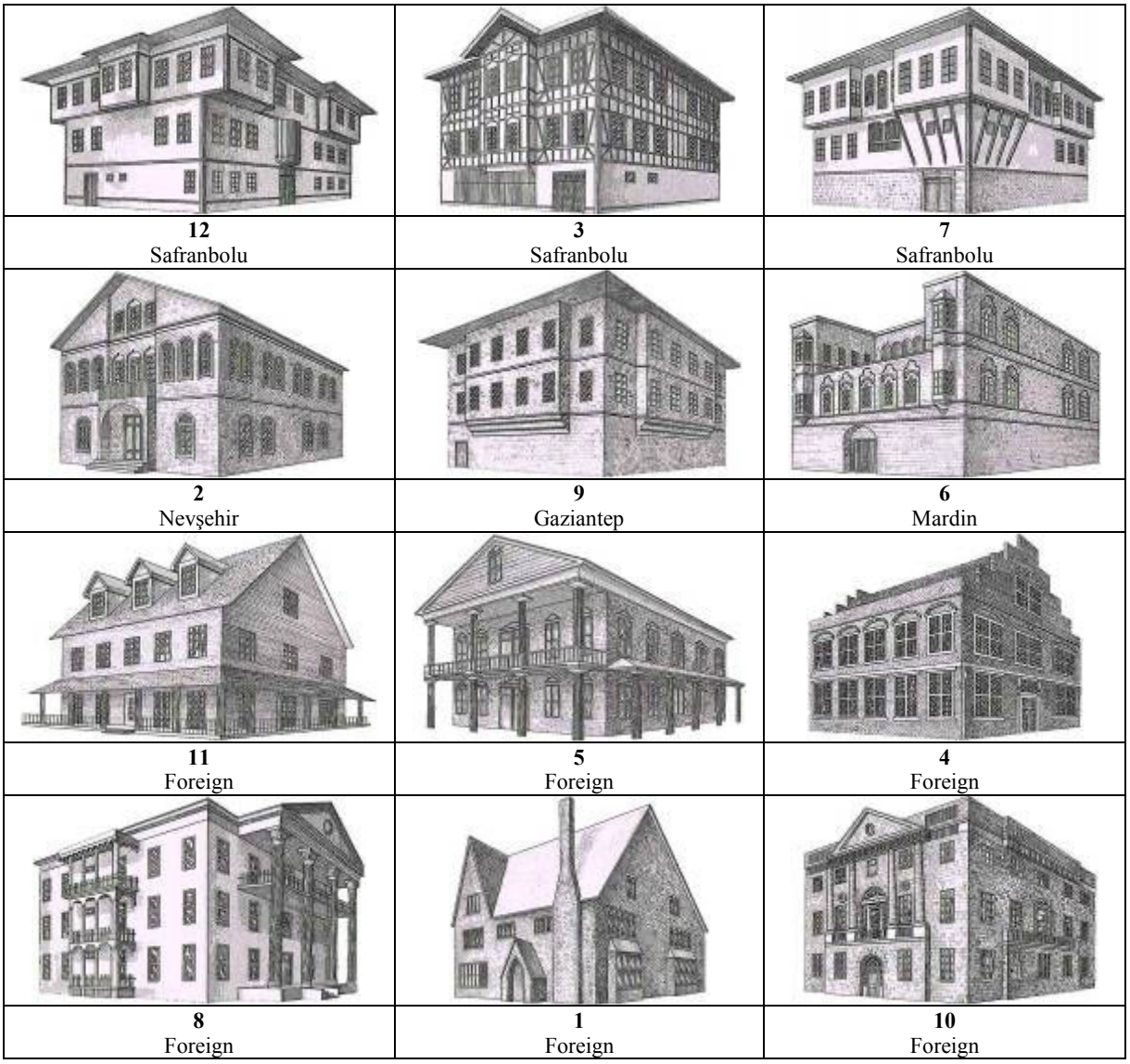


Figure 2. The images used in the survey (with the corresponding numbers in the survey)

2.3. Questionnaire Design

This study made use of the previously-conducted housing evaluation surveys which were found valid and reliable [8, 9, 10, 11]. The first phase of the survey was about the demographic characteristics of the respondents (age, gender, occupation and long-term place of residence). The second phase of the survey asked the respondents to evaluate 12 façade drawings with the help of a 5-point semantic differentiation scale (1=positive value, 5=negative value). Adjective pairs used in this evaluation were listed under the headings *familiarity, impressiveness, complexity* and *liking*. The third phase of the survey asked the respondents who were considered familiar with façades to group the 12 images into domestic and foreign groups. The purpose of this phase was to reveal the extent to which these styles were known.

The last step of the questionnaire was the evaluation of participants' preferences regarding 12 house façades in domestic and foreign styles. These headings were about the preferences of the participants regarding warmth and social status of houses. In order to examine the concepts *warmth* and *status,* the following questions were posed respectively: "*If you lost your way close to a street where these houses are located, which house would you choose to ask for help*?", and "*Imagine being a famous person (bureaucrat, businessperson, politician, etc.). If you lived in a neighborhood with these houses, which house would best represent you?*".

3. EVALUATION OF RESEARCH FINDINGS

Respondents' Assessments of House Styles

The percentage, arithmetic mean and standard deviation of the data obtained in the study were calculated, and Cronbach's alpha reliability tests and single analysis of

variance (ANOVA) were conducted to test the statistical significance (P<0.001) of the differences between the dependent and independent variables. The reliability of the adjective pairs which included the perceptual evaluations of the respondents was tested by "Cronbach's Alpha". Accordingly, the alpha reliability coefficient of the adjectives used in the survey about the façade characteristics of the domestic and foreign examples was found as 0.84. The Cronbach's coefficient estimates of internal consistency for the four scales, including the average scores for the seven bipolar adjective pairs grouped together in Table 2, were as follows: familiarity, impressiveness, complexity and liking. In previous studies [12, 13, 14, 15] it was found that the alpha reliability coefficients for all items can be accepted as "reliable" when it is above 0.70. The Cronbach's Alpha coefficient obtained in the current study is above this specified value. As a result, the semantic differential scale was found to be reliable.

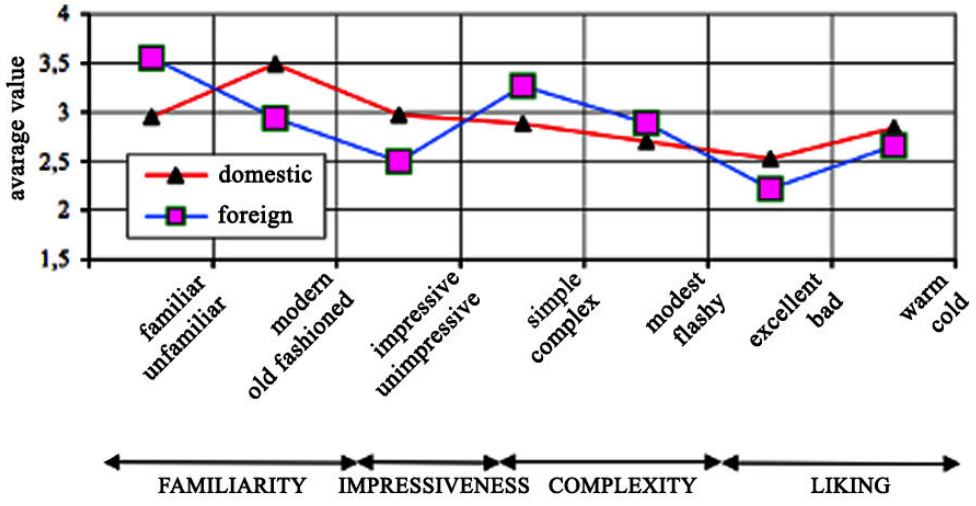
Table 3. Results of reliability analysis of the dependent variables

	Scale Items	**Scale reliability in detail**	**Scale reliability**
Familiarity	familiar- unfamiliar	0,75	0,84
	modern- old fashioned	0,74	
Impressiveness	impressive-unimpressive	0,74	
Complexity	simple- complex	0,73	
	modest- flashy	0,73	
Liking	excellent- bad	0,62	
	warm- cold	0,51	

In other words, the semantic differentiation scale was found 'reliable'. Evaluation of the adjective pairs in terms of the reliability of the scale showed that the relationship between the adjectives was consistent. The reliability values of the adjectives pairs showed that the responses were often similar and consistent.

The differences among the dependent variables including the whole images were tested with one-way analysis of variance (ANOVA). According to these results, the differences among the dependent variables were found to be statistically significant for *familiar- unfamiliar* (F=56.969, df=1, p<0.000), *modern- old fashioned* (F=56.950, df=1, p<0.000), *impressive- unimpressive* (F=40.193, df=1, p<0.000), *modest- flashy* (F=29.450, df=1, p<0.000), *simple- complex* (F=7.179, df=1, p<0.007), *excellent- bad* (F=19.933, df=1, p<0.000) ve *warm- cold* (F=5.782, df=1, p<0.016)

In terms of the relationship between the domestic and foreign façades, the respondents considered the domestic images more *familiar*, *old-fashioned, unimpressive* and *modest*, while they stated that the foreign images were more *modern, impressive, flashy* and *excellent* (Figure 3).



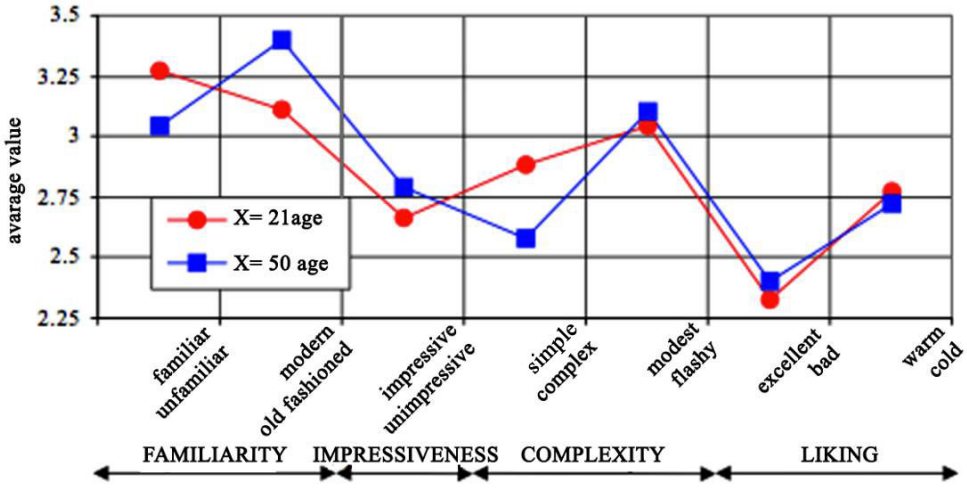
Note: Variable means are ranked from 1 to 5. Higher values indicate a negative response.

Figure 3. The relationship between the domestic and foreign images

 4	The *familiarity* levels related to the domestic and foreign house façades, the most familiar façades were the domestic ones. Façade number 4 (foreign house) was considered the most *unfamiliar*.
 2  6	In addition, the respondents found it difficult to group the images of the domestic façades number 2 and number 6.
 7	The most *familiar* façade was found to be façade number 7. One of the main reasons that led to this outcome was that the residential buildings in Kahramanmaraş have characteristics similar to façade number 7 (Figure 9). It might be an influencing factor that 65% of the respondents have passed the most of their lives in Kahramanmaraş and its environs.
 8	The decorations and details in the façade led to the interpretation that the building is *flashy* [16], and the more *flashy* the façade is, the more *impressive* it is. Although the foreign example number 8 was found to be *complex*, it was defined as *modern, impressive* and *flashy*. Even though this structure greatly influenced the respondents, it was not among the most *liked* three buildings. This result is in line with Akalın's [17] finding that the most *complex* buildings are considered *impressive* but they are not a matter of choice.
 11  5	Similarly, façades number 5 and 11 were considered, to a lesser extent, *modern, impressive* and *warm.* Although façade number 5 was found to be *flashy*, it was among the first three buildings in terms of *liking*. *Impressiveness* increased in the foreign examples with columns, verandas and roof windows (images 8, 11 and 5)
 9  2	The structures characterized as *old fashioned* were generally traditional and mainly made of stone (façade number 9 and 2). Façade number 9 was found to be the most *old fashioned, unimpressive*, the least *complex, worst* and *coldest* structure. In addition, these façades (2 and 9) were the least preferred in terms of *status*.
 5  3	The result that the images evaluated as moderately *complex*, façades number 5 and 3, were in the first three pictures in terms of *liking* confirms Berlyn's inverted "U" relationship [8, 18-23].

In general, it could be stated that materials might affect preferences [24, 25]. The top-rated façades were made of brick and wood (images 3, 5, and 7), while in the least-liked façades mostly stone was used (images 1, 2, 6, and 9). Besides, in the most *liked* façades, building elements such as bay windows, porches, columns and verandas were used.

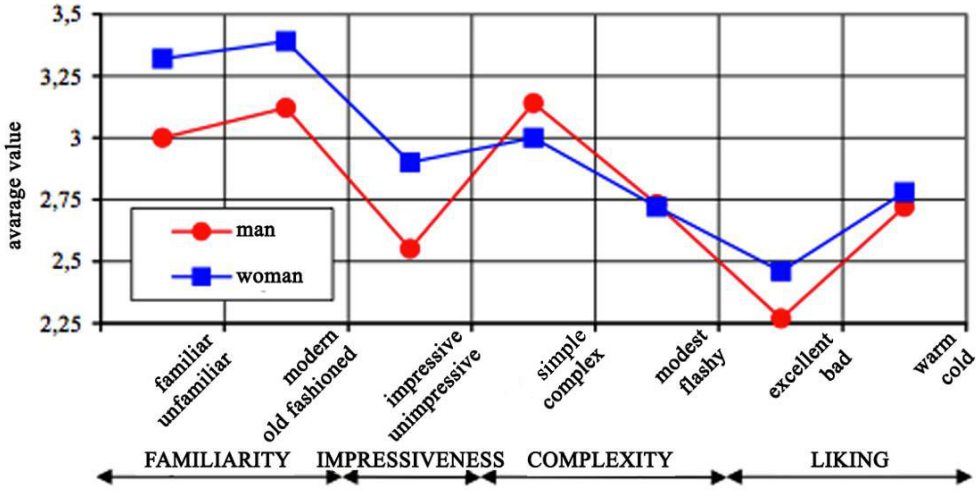
The evaluation of all the images according to the adjective pairs that constitute the semantic differentiation scale, as shown in Figure 4, revealed that, among both young and older respondents, there is no statistically significant difference between the adjective pairs of *impressive- unimpressive, modest-flashy, excellent-bad* and *cold-warm* with p>0.05 level, while there is statistically significant difference between *familiar-unfamiliar* (F=6.671, df=1, p<0.010), *modern-old fashioned* (F=13.771, df=1, p<0.000) and *simple – complex* (F=14.675, df=1, p<0.000). Young people evaluated the images as *unfamiliar, modern* and *complex* less than the older people did and they were affected less (Figure 4).



Note: Variable means are ranked from 1 to 5. Higher values indicate a negative response.

Figure 4. Preferences reflected in the adjective pairs according to age

According to Figure 5, there is a statistically significant difference between the adjective pairs that constitute the semantic differentiation scale *familiar-unfamiliar* (F=13.722, df=1, p<0.000), *modern-unmodern* (F=12.274, df=1, p<0.000), *impressive-unimpressive* (F=19.890, df=1, p<0.000) and *excellent-bad* (F=6.481, df=1, p<0.011). In general, the differences in the graph show that females evaluated the images more negatively than the males did (Figure 5).



Note: Variable means are ranked from 1 to 5. Higher values indicate a negative response.

Figure 5. Preferences reflected in the adjectives pairs according to gender

Grouping Domestic and Foreign Façades

In order to see whether the domestic and foreign façades are guessed correctly by different groups, participants were asked to group the images of the façades into domestic and foreign. At this point of the questionnaire, the participants were not told that the images of the façades belonged to two different groups, namely domestic and foreign. In the second phase of the questionnaire, the images were introduced through the use of adjectives to the participants, who were then informed that the images belonged to domestic and foreign groups.

Table 3 and Table 4 show the percentage distribution of guessing the façades correctly by gender and age groups. There was no significant difference in guessing the façades correctly by age difference (Table 3). The rate of guessing the images correctly of the group with mean age 21 was 36.86%, while that of the group with mean age 50 was 37.26%.

Table 3. Correctly guessing the façades by age groups (%)

Age	Domestic Images						Foreign Images						Total
	2	3	6	7	9	12	1	4	5	8	10	11	
21	26,5	41,2	20,6	44,1	31,3	37,3	46,1	46,1	37,3	39,2	41,2	31,4	**36,86**
50	20,6	48,0	19,6	49,0	41,2	35,3	48,0	47,1	32,3	36,3	40,2	29,4	**37,26**
Total	47,1	89,2	40,2	**93,1**	72,5	72,6	**94,1**	**93,1**	69,6	75,5	81,4	60,8	**68,06**

In terms of the sum of the percentages of correctly guessing the façades by gender (Table 4), 40.11% of females grouped the images correctly, while 33.99% of the males grouped them correctly. It was seen that the female participants were more successful in indicating whether the images belonged to Turkey or foreign countries. The participants' overall rate of guessing correctly the 12 images used in this study was 68.06%. The participants residing in Kahramanmaras had the most difficulty in grouping Image 6 (traditional house façade in Mardin) with 40.2%, followed by Image 2 with 47.1% (traditional house façade in Nevşehir) (Figure 6).

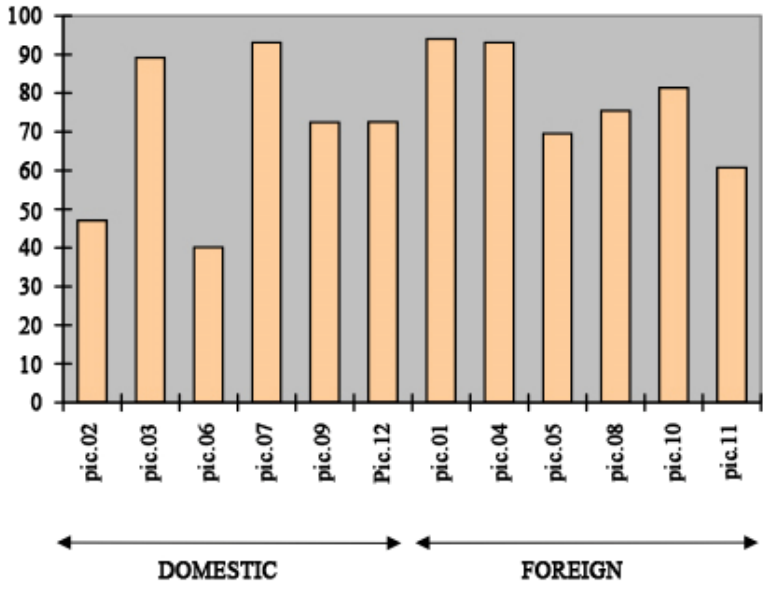


Figure 6. Correctly guessing the domestic and foreign façades

Table 4. Correctly guessing the façades by gender (%)

Gender	Domestic Images						Foreign Images						Total
	2	3	6	7	9	12	1	4	5	8	10	11	
Male	20,6	45,1	17,6	46,1	**29,4**	32,4	44,1	45,1	30,4	34,3	41,2	**21,6**	**33,99**
Female	26,5	44,1	22,6	47,1	**43,1**	40,2	50,0	48,0	39,2	41,2	40,2	**39,2**	**40,11**
Total	47,1	89,2	40,2	**93,1**	72,5	72,6	**94,1**	**93,1**	69,6	75,5	81,4	60,8	**68,06**

Age and gender differences in preferences of 'warmth'

To determine the participants' preferences of warmth, the question "*If you lost your way close to a street where these houses are located, which house would you choose to ask for help?*" was asked. In order to avoid misunderstandings, the participants were reminded that all the houses had the same aspects (floor number, size, economic value, garden, neighborhood, etc.) except for their façades. It was expected that the responses to this question would lead the researchers to find out the façade considered the warmest by the participants. Although there was no significant relationship in the responses of the participants between age and warmth preferences (Pearson's chi-square: 12.018, df: 10, p = 0.284), the warmest façade was considered to be Image 7 with 40.2%. The rate of considering Image 7 the warmest was 16.7% in the group with the mean age 21 and 23.5% in the other (Table 5).

Table 5. Participants' preferences of "warmth" by age

Age	Preference(%)												Total
	Domestic Images						Foreign Images						
	2	3	6	7	9	12	1	4	5	8	10	11	
21 age avg.	1,0	3,9	-	**16,7**	-	2,0	3,9	2,0	4,9	2,9	4,9	7,8	**50**
50 age avg.	1,0	8,8	-	**23,5**	1,0	1,0	1,0	2,0	2,9	2,0	-	6,9	**50**
Total	2,0	12,7	-	**40,2**	1,0	2,9	4,9	3,9	7,8	4,9	4,9	14,7	**100**

The formal aspects of the façade considered the warmest revealed that it was also the most familiar one. While 23.6% of the younger group preferred domestic fronts, this rate was 35.3% in the other group. The rate of preferring foreign images in the group with the mean age 50 was 14.8%, while 26.4% in the group with the mean age 21, indicating they found the foreign images warmer than the older participants (Figure 7).

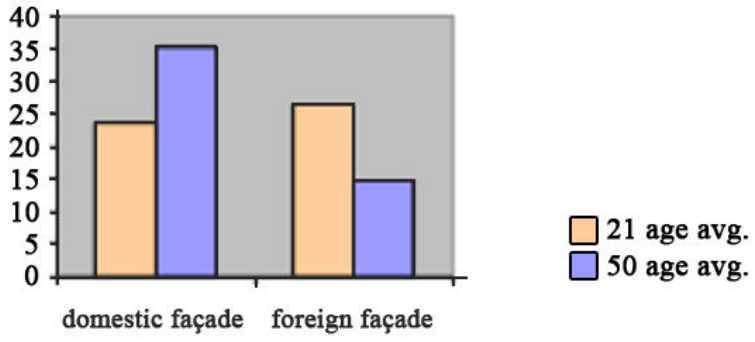


Figure 7. 'Warmth' preferences in domestic and foreign fronts by age groups

Another factor that might affect the warmth preference is the material used. The material used in the façade considered the warmest is wood. Image 6 is made of stone and it was not selected by any of the groups in warmth preferences. There was no significant relationship between gender and warmth preferences in the participants' responses to the question asked in order to determine their warmth preferences in façades (Pearson's chi-square: 6.131, df: 9, p = 0.804).

Age and gender differences in preferences of "status"

Houses are not only the most common architectural practice but also a point of encounter for everyday life, culture, and architecture and a space to express oneself and the social and economic status. In other words, a house is an important personal representation. In order to determine the status symbols of the participants, the question "*Imagine being a famous person (bureaucrat, businessperson, politician, etc.). If you lived in a neighborhood with these houses, which house would best represent you*?" was asked. At this stage, the participants were reminded that the houses have the same aspects except for their façades.

Table 6 shows that there was no significant change in the social status preferences of the participants due to age difference (Pearson's chi-square: 15.805, df: 9, p = 0.71). Image 8 was preferred for social status with the rate 52%. This façade was preferred by 23.5% of the group with the mean age 50, and by 28.4% of the group with the mean age 21. Image 2 and 9 were not preferred as an indicator of social status by any of the participants.

Table 6. Participants' 'social status' preferences by age

Age	Preference(%)												Total
	Domestic Images						Foreign Images						
	2	3	6	7	9	12	1	4	5	8	10	11	
21 age avg.	-	2,9	1,0	4,9	-	-	1,0	2,0	1,0	**28,4**	5,9	2,9	**50**
50 age avg.	-	2,9	2,0	1,0	-	3,9	2,0	-	6,9	**23,5**	2,9	4,9	**50**
Total	-	5,9	2,9	5,9	-	3,9	2,9	2,0	7,8	**52,0**	8,8	7,8	**100**

There was no significant difference in social status preferences of domestic and foreign façades in terms of age. While 8.8% of the younger group preferred domestic façades, 41.2% preferred foreign façades. This rate is 9.8% and 40.2%, respectively in the older group (see Figure 8).

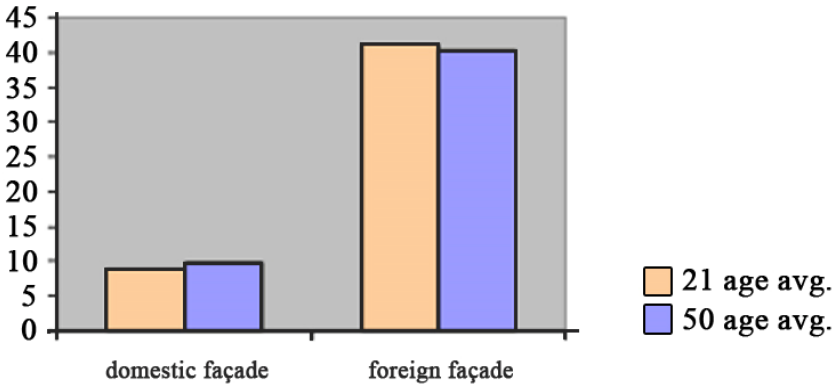


Figure 8. 'Status' preferences in domestic and foreign façades by age groups

In terms of the formal aspects of the selected façade, colonnades on three floors and the triangular pediment strike attention. Moreover, Image 8 was considered the flashiest façade, while Image 2 and 9 which were not preferred have modest aspects. There was no significant difference in the participants' preferences of social status in terms of gender (Pearson's chi-square: 9.000, df = 9, p = 0437).

4. CONCLUSION and DISCUSSION

According to data obtained from the study, the examples from foreign cultures were chosen by the respondents as they considered them an indicator of status (image 8). The domestic examples were preferred as they were closer to the culture of the respondents (image 7), while the respondents' preference towards the examples of foreign cultures was found to be related to the façade characteristics of these buildings which were similar to the characteristics of the domestic façades (image 5).

In conclusion, this study identified the meanings of images of domestic and foreign structures for different groups. It was further tested the difference in interpretation of domestic and foreign house façades according to age and gender. This study was based on the assumption that different groups might have different interpretations. For this purpose, and within the framework of Rapoport's [26] non-verbal communication model, a survey was designed about the house façades belonging to different styles of domestic

and foreign cultures. According to this model, the respondents were expected to interact with the images of façades that carry the information encoded on them. As different age, gender and regional groups interpret the façades through different cognitive filters, different meanings for the same images were expressed. In addition, it was observed that the groups shared similar meanings.

Supported by this study, the assumption that different groups might have different interpretations is based on the differences in experiencing. People gain experience with the repetitions of the types they see in their environment. Cognitive structure schemes are built when confronted with repetitive situations. If this structure corresponds to the examples in the environment, this leads to a sense of familiarity. Thus, it is not a coincidence that the respondents were familiar with the examples from Turkey used in this study. Moreover, it explains the familiarity of the long-term residents of Kahramanmaraş, who constituted the majority of the respondent group, with the façades that demonstrate similar characteristics to the traditional houses in Kahramanmaraş (see Figure 9).

Figure 9. Examples of traditional houses in Kahramanmaraş

The situations that do not comply with the cognitive structure schemes are described as unusual. As Nasar stated, in this case, people either place this piece of information in a category by expanding their memory or develop a blurred category. This was the case for the examples of foreign housing. The domestic examples, all of which reflect traditional façade characteristics, were recognized and categorized easily and identified as unmodern. However, as the foreign examples were unknown to the respondents, they were placed in a blurred category. As a result of this blurred opinion, they were considered more modern with respect to the domestic examples. Wickelgren states that the increasing familiarity would lead to less complexity [27]. The results of this study demonstrated that the foreign façades were interpreted as more complex than the domestic façades, while the examples of domestic housing were generally considered as simpler.

According to the environmental behavior researchers, psychological and social functions about the form of the building are related to the identity of users. Symbols help people develop shared schemas (stereotypes). These schemas help identify objects or people. The domestic and foreign examples of house façades used in this study revealed the liking of the respondents. The respondents liked the foreign façades more. The reason for this preference could be due to 'the different' triggering interest. Likewise, in their study, Purcell and Nasar found out that difference and dissimilarity increase interest [28]. While differences were observed in liking, it was also seen that the same meanings were shared among the respondents.

Furthermore, this study determined how the residents of Kahramanmaraş, a city without cosmopolitan characteristics, read urban codes. It could be thus possible to develop a way to satisfy both the younger generation and older people. It could be achieved through the modernization of the traditional lines by designers' stylizing them in future urban development. It is expected that future local research on this topic would support these findings.

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