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Public's Judgment on Contemporary Mosque Design Approaches

Pınar DİNÇ KALAYCI[1,♠], Esra ŞAHİN ÇELİK[2]

[1] *Gazi University, Faculty of Architecture, Department of Architecture*

[2] *T.R. Prime Ministry, Directorate General of Foundations*

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ABSTRACT

Mosque design is an issue that has been considered mostly in theoretical level by authorities whereas its impact on users left neglected. This study focuses on the judgments of high-school students (N=100) who follow a religion-based program in Aydın, Turkey. Participants judged 4 contemporary mosque design approaches. Scores were collected via questionnaire. *General like-dislike* responses was the dependent variable of the study whereas *differentness, exterior, interior, suitability for praying, invitingness* and *style* characteristics of mosques were the independents. According to results, the mosques imitating historical figures were the least liked whereas the ones *interpreting* these figures received the highest appreciation from young Turkish participants. Furthermore, different characteristics were effective in participants' judgments for different mosque design approaches. The study is considered to be important as it proposes a methodology for diagnosing public opinion on mosques and underlines the potentials of interpretational, prism-shaped and free-shaped approaches in mosque design in Turkey rather than the ongoing imitational practice.

Keywords: *Mosque design, contemporary architecture, user response, aesthetic appraisal*

1. INTRODUCTION

Being sacred places of Islam, mosques are spaces of several reflections and representations. Each mosque is considered as a representation of (i) *paradise* with its inner atmosphere of harmony, avoided directionality of light in interior space, use of water and the decorations in and out of the building, (ii) *a heavenly theater*, in which the worshipper is watched by God from the entrance to the mosque to his/her performance with the congregation, (iii) *an urban sculpture*, that can be observed from 4 sides and from specific distances and venues and (iv) *a cosmic spiral*, that reflects *no beginning and no end* thought of Islam shaping all structural elements and spatial units in spiral configuration [1]. Mosques convey some or all such messages through each element in their composition to worshippers, other societies and to the forthcoming generations [2]. Political issues have also been highly related with mosque design recently [3]. Most mosques come to earth under the effects of traditions, opinions of authority figures or the architect's own passion for creating a novel place of sanctity.

On the other hand, mosques' role in *community development* is also being discussed and special need for reconsiderations of the program and functions of mosques that are built in non-Islamic cultures in specific are underlined too [4]. At this point, one type of information becomes important for designing a new mosque; expectations and tastes of users. Compared to the vast amount of studies on residences, offices, hospitals and schools, user-oriented studies for mosques are limited. Before focusing on the programmatic issues, responses to different formal approaches should be illuminated since mosques are communicative figures of religion and cities and they do it mainly through their forms.

♠Corresponding author, e-mail: pdinc@gazi.edu.tr

Imitating the styles of past centuries, mostly the 16th century mosques [5], has been the general approach in mosque designs in Turkey for the last 50 years. Thousands of mosques imitating past examples have been constructed anonymously all over the country regardless of geographical and social differences. Architectural quality of these mosques does not satisfy design professionals and art historians of the country. Design approaches of these mosques have been called as "unprincipled approaches" that indicate an intensive kitsch content [6]. Although "roof" had been a common element for early-Islamic mosques and for the mosques built away from the Ottoman palace, dome has kept its status as the dominating element in these mosques due to its representational value [7]. Very few exceptions in big cities interpreted history (including dome and minaret) skillfully or preferred a totally Modernist-abstract language that reflected the pure nature of praying. Parliament Mosque (B&C Çinici), Kınalı Island Mosque (T. Uyaroğlu & B. Acarlı), Etimesgut Armed Forces Mosque (C. Bektaş) and TEK Mosque (C. Keskinok) are the internationally referenced exceptions [8] as Sancaklar Mosque (EAA Architects) and Yeşil Vadi Mosque (A. Kazmaoğlu) [9] take significant place in the recent contemporary approaches.

Architects' and art historians' negative opinion for this ongoing major practice and appreciation for the minor distinguished examples can be followed from the literature whereas public opinion for different mosque design approaches is still unknown in Turkey. This study proposes a pilot study, a research model for diagnosing the ignored public opinion on different design approaches for mosques. Young generation receiving religious-based education was the participant group of this study as only 4 design approaches for mosques were studied. This limited participant and design approach groups can be enlarged for bigger-scale surveys.

2. LITERATURE REVIEW

Though mosques had been functioning as social centers through centuries, changes in Islamic societies and rise of new building types in all societies were said to cause an alteration from this multi-functional status. Scale, size and expression of mosques were mentioned to become critical issues due to the enlargement of cities in time and to the increased number of other landmarks in these cities. Still, minarets, domes, gateways and mihrabs are counted as important elements of mosque architecture due to their role in reflecting the religious identity of a society to a building and in attaining continuity between generations. Societies were said to be using these elements according to their own value systems, ranging from traditional to modern [2]. Conventional forms, the domes and minarets in specific, were found to be meaningful in *social sense* though they were considered obsolete for the religious rituals [3]. Here, *social sense* implies the public opinion that sometimes conflicts with the opinion of the architect. Public wants to see symbols since symbols are the indicators of the presence of the society and its values, whereas some architects prefer abstracting or omitting these symbols in order to design a timeless space, e.g. peaceful, relaxing and familiar to all.

Contemporary approaches to mosque design were classified with similar attitude; from traditional to modern. Vernacular, traditional, populist, adapted modern and modernist approaches was the hierarchical systematic that draw the big picture for contemporary mosque design approaches through the end of the 20th century [10]. This classification considers the masterpieces of each approach and perceives all approaches from a positive perspective without criticizing them in terms of suitability for continuity of a distinguished mosque design. On the other hand, the mostly non-monumental stylistic expressions of mosques that appeared after the Second World War to the present were listed as the following; (i) vernacular approaches, (2) revival styles or the replicas, (3) modern regionalists and (iv) the modern expressions. Of these expressions, the revivalist approaches (the unprincipled ones) were criticized due to their negative contribution to the spiritual and cultural continuity of the religion. Instead, a creative combination of regional and universal characteristics was recommended for contemporary mosque design [11]. Traditional-modern poles and viewing all approaches in comparison seem to be a suitable starting point for any new classification proposal and criticism for contemporary mosques.

Design specialists and art historians naturally perceive mosques from their professional and/or academic point of view that usually does not consider public opinion or user response to buildings. In fact, an important part of literature has been devoted to the perceptional differences between architects as designers and layperson, the non-architects who are the potential users/observers. Differences of judgments have been measured through sets of images that belong to one type of building (unfortunately not mosques) or to mixed types. Effects of building exteriors on peoples' like/dislike judgments for buildings were studied in detail. Architects' and laypersons' aesthetic evaluation were found to differ in relation to the physical and affective qualities of architectural images [12]. Architects' predictions for laypersons' judgments for buildings were qualified as *self-anchored and inaccurate* due to the disagreement of judgment scores between these groups on large-scale buildings [13]. Similarly, research on the preferences for the suburban office buildings indicated architect-user differences in judgments, and proposed an *ordered preference model* that would satisfy both groups [14]. Architects were found to be appreciating with high-style (the Modern) houses, rather than popular style ones in relation to familiarity, typicality and affective experience variables, more as they progress in their profession [15]. Differences between these groups have been attributed to the specialized education of architects [16] that equip them with different standards of appreciation [17, 18] than that of laypersons. All these researches indicate a big gap between what architects and laypersons value in judging architectural matters. It is certain that architects should be better informed about the public opinion on buildings. What they can grow on this opinion and how they use their creativity in favor of public are up to their choice.

On the other hand, laypersons' opinions for building facades were found to be more congruent. The environmental cues presented in house exteriors caused respondents from two cities to make same inferences about the friendliness and status of residents [19].

Similarly, effects of house exteriors on respondents were found to be in harmony with the homeowners' personality and identity judgments for themselves [20]. Facades of small suburban offices [21], a presidential library [22] and the headquarters building of New York Times [23] raised consistent judgments of laypersons. Although laypersons could not guess the functions behind facades successfully [24], façade appears to be an architectural element on which laypersons agree up to a certain degree. Unfortunately, none of these searches included mosques. Focusing on mosques and their exteriors seem necessary in order to illuminate designers, whose expectations and tastes were proved to be very different than that of non-architects.

Popularity of the revivalist / unprincipled mosques in Turkey raises the question for modernity of mosques and its acceptability by the public. Architects are not well informed neither about public's real opinion on the present and ongoing popular style or about the modern proposals that suit well to their own professional tastes. Public's perception for each of the mosque design approaches that vary from traditional to modern need to be illuminated. This study was shaped around this missing knowledge.

2.1. The study

Understanding public's opinion on contemporary mosque design approaches was the main objective of the study. Therefore, a group of young people who were following a religion-based program in their school was chosen as the participant group. Existing contemporary design approaches were reviewed and grouped under 4 headings, from traditional to modern: (i) the imitation of the traditional domed, (ii) the interpretation of the traditional domed, (iii) the prism-shaped and (iv) the free-shaped. Samples (n=10) were so chosen that the variety under each heading in reality could have been represented. Judgment scores for each sample illuminated participants' opinions on different mosque design approaches.

2.2. Methodology

The variables and research problems: The study firstly focused on the general like-dislike judgments of participants. Secondly, effects of physical-emotional characteristics on the general like-dislike scores for each design approach were tested; effective and ineffective characteristics were diagnosed. Possible spatial and space-related emotional expectations of prayers from mosques were translated into 6 physical-emotional characteristics in this study. The observable physical characteristics were; (i) differentness from the mosques that can be seen around, (ii) ornamented-flamboyant look of the exterior and (iii) spacious-luminous look of the interior as the emotional characteristics were; (i) the felt nearness to God while praying, (ii) invitingness for peoples' gathering out of pray-times and (iii) style's being appropriate for being a reference in future.

The variety in contemporary mosque designs was studied through a set of mosque images including in-use mosques and on-paper proposals date after 2000. They were collected from internet, national and international architectural competition documents and related books. Collection was divided into 4 basic groups, each group was divided into subgroups and each design approach was represented via the number of mosques equal to the number of its subgroups. Participant responses were thought to vary according to the mosque design approach and each architectural characteristic was thought to have different effect on like-dislike judgments. Based on these variables and assumptions, research problems of the study were the following:

RP_1: Collecting the judgment scores that each design approach raises, and diagnosing the design approach(es) that raise participants' appreciation and,

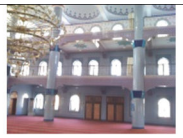
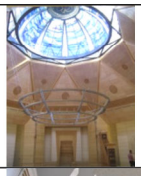
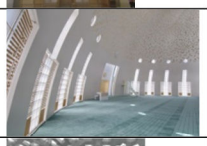
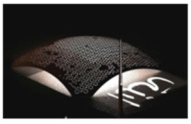
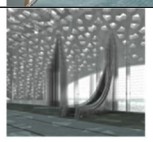
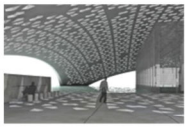
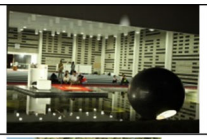
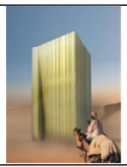
RP_2: Diagnosing the physical-emotional characteristics that effect participants' like-dislike judgments in relation to 4 design approaches.

Mosque images: Each design approach was represented via different number of samples and each sample represented a sub-group. Therefore 2 samples were chosen for representing the imitational approach (1 small scale mosque with single dome; 1 medium scale with one main and four smaller domes), 3 for representing interpretational approach (1 using dome in a prismatic complex; 1 a dome itself and 1 concave shelter standing for a dome), 4 for prism-shaped approach (1 single and decorated prism; 1 pure prism; 1 prism with a lot of extractions; 1 high-rise prism) and 1 for free-shaped approach (an open-air praying area designed like a staircase). Of the 4 prism-shaped mosques, the first 3 had minarets (a familiar figure for participants) and the last high-rise sample stood for the body and the minaret of the mosque itself. Since free-shaped approach could have numerous sub-groups, a single and highly abstract sample was considered to be adequate. For the 2 mosques, (the high-rise and staircase samples) participants were given additional information since participants were thought to be unfamiliar with how believers were proposed to pray in these mosques. In the questionnaire, each mosque was represented via 4 images, 2 exterior and 2 interior. Interior was considered as effective as the exterior for the judgments on mosques, therefore was included in the study. Figure 1 shows the 4 groups of design approaches, the 10 sample mosques chosen according to the sub-groups and the 4 images that represent each mosque.

The questionnaire: The 1st part of the questionnaire was devoted to demographic variables, such as –age, gender and education year information. The 2nd and main part of the questionnaire was devoted to the judgments for the 10 mosque samples. Participants were asked to score each sample for the 6 characteristics. The question set devoted to each sample ended with a general like/dislike scoring. In this part, 5-point Likert scale was used (5=strong agreement and 1=strong disagreement). Each sample took place on a separate sheet. The printed images in the questionnaires were stamp-size black & white pictures so participants had to follow the synchronic presentation of the same images reflected on a curtain, colored and big size pictures. Participants were asked to judge according to the images on the curtain and use the printed images only for being sure that they were judging the right mosque sample at that moment.

Participants: İmam Hatip Schools, which follow a religion-based curriculum, take noteworthy place in Turkish primary and secondary school education. Courses like mathematics, physics and language are still included in the curriculum of these schools. The high-school student participants of this study were chosen from such a school, the Aydın İmam Hatip School, since members of these specific schools were thought to have more sensitivity for mosques. Totally, 100 students participated to the study, 50 were male and 50 were female. Minimum age of participants was 15 as the maximum was 21. All were the 11th and 12th grade students.

Figure 1. The 10 mosques that represent 4 contemporary mosque design approaches

Design approach	The mosque	Exterior 1	Exterior 2	Interior 1	Interior 2
Imitational	1.Yavuz Sultan Selim Mosque, Aydın, Turkey (Architect is not known)				
	2.Adnan Menderes Mosque, Aydın, Turkey (Architect is not known)				
Interpretational	3.Doğramacızade Ali Pasha Mosque, Ankara, Turkey (Arch. E.Şahinbaş)				
	4.Yeşilvadi Mosque, Istanbul, Turkey (Arch. A.Kazmaoğlu)				
	5.Proposal for a national competition, (Arch. H.Evkaya&K.İ.Bal				
Prism-shaped	6.El Irsyad Mosque, Indonesia, (Arch. P.T. Indeonesia				
	7.Proposal for a national competition, (Arch. E.D.Durakbaşa& Ö.S.Baz				
	8.Assyafaah Mosque, Singapur, (Arch. T.K. Hiang&Forum Architects)				
	9.Proposal for an international competition, (Arch. D.Andersson&C. Flügel)				
Free-shaped	10.Proposal for an international competition, (Arch. Rux Design)				

The analyses Cronbach's alpha values for all judgments assured validity of the study, data set was suitable for further analyses (see Table 1). Though ".70" has been accepted as the minimum value for reliability, several empirical researches measuring participant judgments have been based on the Cronbach's alpha values around ".60"s. As mentioned before, participants were asked to judge each mosque sample by considering 2 exterior and 2 interior images in this study, which is a different operation than the similar researches requesting one or more responses to a single exterior image. This specific operation was thought to be the reason for relatively lower, and still acceptable, alpha values. Mean scores and standard deviations for 10 samples indicated the most and least favored approaches whereas significances of judgmental differences were diagnosed via ANOVA analyses. Regression analyses were used in order to diagnose the role of each characteristic on like-dislike scorings.

Table 1. Reliability analyses, Cronbach's alpha values for the physical-emotional characteristics and the general satisfaction variables.

Physical-emotional characteristics	Cronbach's alpha	Number of items
Differentness	.638	10
Exterior	.664	10
Interior	.602	10
Nearness to God	.732	10
Invitingness	.698	10
Style	.679	10
General satisfaction	.747	10

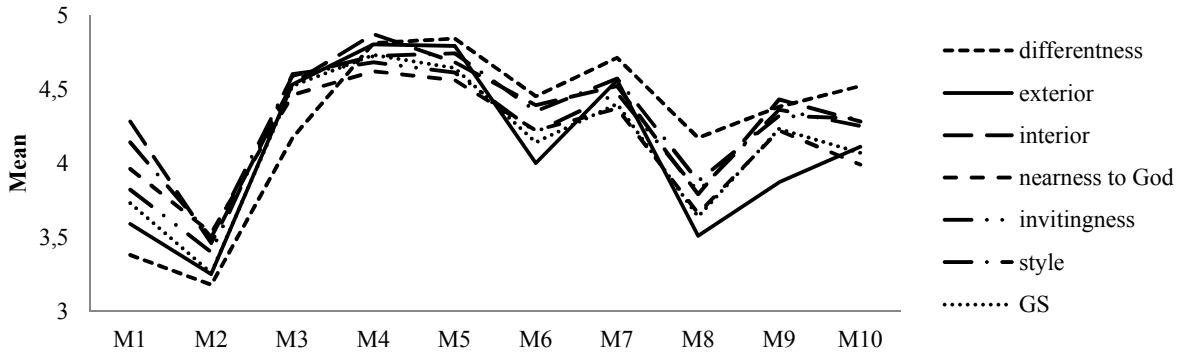
3. FINDINGS AND DISCUSSION

Research Problem 1: Responses to different design approaches Mean scores and standard deviation values indicated Mosque 4, which is a single dome as if it's one half born from the other, being the most favored design whereas Mosque 2, which has 1 main and 4 small domes standing on a prismatic base, being the least (see Table 2 and Figure 1). Scores for the interpretational approach indicated its being the most favored approach (Mean=4.65), followed by the prism-shaped (Mean=4,21), the free-shaped (Mean=4,07) and the imitational approach (Mean=3,57). Briefly, interpretational approach was the approach that received the highest (most positive) scores from participants whereas the imitational approach received the lowest (See Figure 2). In other words, participants preferred abstraction up to a degree in mosque design as they did not give credit to the uninterpreted collections of historical figures. Rarity of cubical forms in mosque design in Turkey and participants' negative response to the progressed abstraction in mosque design were thought to cause prism-shaped and free-shaped approaches to be placed after interpretational approach.

Table 2. Mean and standard deviation values for 10 mosque samples

		Architectural Characteristics												General Satisfaction	
		Differentness		Exterior		Interior		Nearness to God		Invitingness		Style			
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
DA1	MS1	3,38	1,23	3,59	1,05	4,28	0,83	3,96	0,99	3,82	0,95	4,14	1,10	3,78	0,89
	MS2	3,18	1,13	3,25	1,11	3,46	1,05	3,53	0,91	3,4	1,12	3,5	1,21	3,26	0,96
DA2	MS3	4,17	0,58	4,53	0,73	4,54	0,59	4,46	0,69	4,6	0,67	4,59	0,73	4,52	0,72
	MS4	4,81	0,68	4,8	0,60	4,87	0,42	4,62	0,71	4,68	0,74	4,72	0,77	4,73	0,63
	MS5	4,84	0,58	4,79	0,61	4,68	0,71	4,56	0,83	4,61	0,75	4,74	0,71	4,64	0,71
DA3	MS6	4,45	0,89	4	1,13	4,39	0,95	4,22	0,95	4,21	1,00	4,35	1,05	4,14	1,00
	MS7	4,71	0,61	4,56	0,78	4,52	0,76	4,37	0,88	4,47	0,88	4,57	0,85	4,4	0,86
	MS8	4,17	1,17	3,51	1,24	3,79	1,17	3,66	1,16	3,81	1,13	3,88	1,22	3,64	1,14
	MS9	4,38	1,17	3,87	1,29	4,43	1,04	4,22	1,15	4,36	0,97	4,32	1,09	4,23	1,09
DA4	MS10	4,52	0,97	4,11	1,22	4,28	1,03	3,99	1,26	4,25	1,10	4,3	1,04	4,07	1,14

DA=Design approach
MS=Mosque sample



DA1=M1+M2; DA2=M3+M4+M5; DA3=M6+M7+M8+M9 and DA4=M10

Figure 1. Scores for characteristics and general satisfaction in relation to mosque sample (DA=Design Approach M=Mosque Sample GS=General Satisfaction)

For testing significance of differences between the judgments for the 4 mosque design approaches, an ANOVA analyses was run. Table 3 displays results. Differences between participants' judgments for 4 design approaches were significant (F=18,84, df=3 and p= .000). Tuckey tests indicated the scores for the imitational approach to be significantly lower than the scores for other approaches as the scores for the interpretational approach were significantly higher than that of other approaches. Same test indicated similarity (insignificance) of judgments for prism and free-shaped approaches. Therefore, participants were sure about the positivity of interpretational approach and the negativity of imitational approach compared to other approaches whereas not so sure about the difference between prism-shaped and free-shaped approaches. Unfamiliarity of participants to prism-shaped and free-shaped mosques was thought to be the underlying reason. Table 4 displays Tuckey test results and Figure 2 the mean scores for each design approach.

Table 3. ANOVA test; significant score differences between 4 design approaches

ANOVA					
General satisfaction	Sum of the squares	df	Mean of the squares	F-test	Sig.
Between groups	42,688	3	14,229	18,840	,000
Within groups	299,090	396	,755		
General	341,778	399			

Table 4. Tuckey test results indicating the significant differences between 4 design approaches

Multiple comparison Tuckey test						
General satisfaction						
(I)factor	(J)factor	Significant difference (I-J)	SD	Sig.	95% confidence interval	
					Lower	Upper
Imitational approach	Interpretive approach	-,91000*	,123	,000	-1,23	-,59
	Prism-shaped approach	-,47000*	,123	,001	-,79	-,15
	Free-shaped approach	-,33000*	,123	,038	-,65	-,01
Interpretive approach	Imitational approach	,91000*	,123	,000	,59	1,23
	Prism-shaped approach	,44000*	,123	,002	,12	,76
	Free-shaped approach	,58000*	,123	,000	,26	,90
Prism-shaped approach	Imitational approach	,47000*	,123	,001	,15	,78
	Interpretive approach	-,44000*	,123	,002	-,76	-,12
	Free-shaped approach	,14000	,123	,666	-,18	,46
Free-shaped approach	Imitational approach	,33000*	,123	,038	,01	,65
	Interpretive approach	-,58000*	,123	,000	-,90	-,26
	Prism-shaped approach	-,14000	,123	,666	-,46	,18

*indicates significant differences at sig.0.05 value

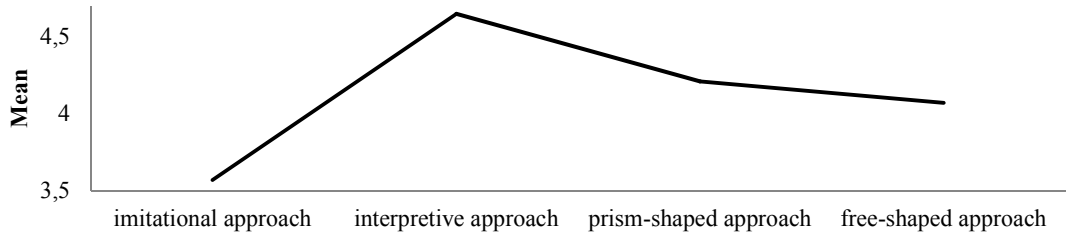


Figure 2. Participants' scores in relation to design approaches

Research Problem 2: Effects of physical-emotional characteristics on like-dislike-judgments for 4 design approaches Regression analyses were run in order to diagnose the effects of 6 physical-emotional characteristics on like-dislike judgments for 4 design approaches. Table 5 displays results. All models were significant (p=.000). The architectural characteristics that this study proposed were able to explain the effects on like-dislike scorings; 68% for imitational, 83% for interpretational, 85% for prism-shaped and 82% for the free-shaped approaches. The percentages that could not be explained were considered to be affected by other factors that did not take place in this study. According to results, exterior, interior and style characteristics were effective in participants' judgments for the imitational approach; interior, invitingness and style were effective for the interpretational approach scorings; exterior, interior, invitingness and style were effective on prism-shaped approach scorings and finally differentness, exterior, suitability for praying and style were effective on the free-style mosque design approach scorings (See Figure 3). Interior was not taken into account in the regression analyses for the free-shaped approach due to the chosen sample's being a design proposing pray in the open-air.

Results indicate that like-dislike scores for prism-shaped and free-shaped approaches were effected by more number of architectural characteristics (n=4) than that of the imitational and interpretational approaches (n=3). In other words, less number of physical-emotional characteristics was concerned when participants were judging the mosques with real domes or the mosques using figures standing for domes. This finding implies that imitational and interpretational approaches convey cultural values relatively more directly and easily (with less number of characteristics) than that of the prism and free-shaped mosques. In other words, the architect who prefers prism-shaped or free-shaped approaches should deal with more number of physical and emotional characteristics for fulfilling publics' expectations. Considering the finding that diagnosed the interpretational mosques being the most favored, using this approach seems to be the most effective way that would satisfy both professionals and public in Turkey.

More number of emotional characteristics (n=2) was effective in the judgments for the interpretational, prism-shaped and free-shaped mosques whereas only *style's being appropriate for being a reference for future* characteristics was effective for the imitational approach. This finding is in line with the dissatisfactions on theoretical grounds that were expressed for revivalist/unprincipled/imitational mosque designs. Interpretational, prism-shaped and free-shaped mosques fulfilled participants' emotional needs more whereas imitational mosques failed to do so. Considering this result, designers can be encouraged to develop non-imitational approaches while designing a new mosque in Turkey. The myths on public's possible negative response to such *newness* should not be taken account.

Style's being appropriate for being a reference for future was the characteristic affected all like-dislike scores for the 4 design approaches. Beta coefficient values indicated style's being the most effective characteristic for imitational (beta=.246) and interpretational (beta=.413) approaches whereas it became the second most effective for prism-shaped and free-shaped approaches. Participants thought imitational and interpretational approaches using domes had more referential value than that of cubic and free-shaped mosques, thus they were more effective in attaining cultural sustainability. On the contrary, *differentness from the mosques that can be seen around* was only effective in the scorings for free-shaped approach thus other approaches were not so original for participants. Although cubic mosques are not a common figure in contemporary Turkish mosque architecture, participants judged its originality as they judged the originality of the mosques shaped through imitational and interpretational approaches. Presence of minarets in 3 of the 4 prism-shaped mosques was thought to be effective in this result.

For the prism-shaped approach, *invitingness for people's gathering out of pray times* was the most effective characteristic as *the felt nearness to God while praying* was the most effective characteristic for the open-air mosque proposal. Although cubic mosques were not participants' favorite, they were found inviting. Similarly, participants were able to understand and appreciate with the open air pray proposal of the free-shaped mosque. They had no objection for such an uncommon form of daily pray. These results indicate young participants' openness to new forms of mosque designs proposing new forms of pray practice.

Table 5. Regression analyses results for 4 mosque design approaches

DA1-Imitational Approach	R	R Square	Adjusted R Square	Std. Error of the Estimate	
	,825	,680	,659	,930	
	Sum of Squares	df	Mean Square	F	Sig.
Regression	170,65	6	28,44	32,92	,000
Residual	80,34	93	,864		
Total	250,99	99			
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std.Error	Beta		
(Constant)	-,050	,551		-,091	,927
Differentness	,069	,068	,083	1,012	,314
Exterior	,154	,074	,183	2,091	,039*
Interior	,238	,084	,222	2,826	,006*
Suitability for praying	,117	,079	,118	1,482	,142
Invitingness	,162	,086	,168	1,891	,062
Style	,210	,083	,246	2,517	,014*
DA2-Interpretational Approach	R	R Square	Adjusted R Square	Std. Error of the Estimate	
	,911	,830	,819	,721	
	Sum of Squares	df	Mean Square	F	Sig.
Regression	235,46	6	39,24	75,52	,000
Residual	48,33	93	,520		
Total	283,79	99			
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std.Error	Beta		
(Constant)	-1,41	,969		-1,453	,150
Differentness	,035	,079	,029	,445	,657
Exterior	-,102	,085	-,085	-1,193	,236
Interior	,432	,092	,342	4,693	,000*
Suitability for praying	,066	,062	,072	1,049	,297
Invitingness	,272	,060	,267	4,533	,000*
Style	,389	,062	,413	6,227	,000*
DA3-Prism-shaped Approach	R	R Square	Adjusted R Square	Std. Error of the Estimate	
	,922	,850	,840	1,148	
	Sum of Squares	df	Mean Square	F	Sig.
Regression	693,554	6	115,592	87,60	,000
Residual	122,64	93	1,319		
Total	816,19	99			
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std.Error	Beta		
(Constant)	-2,31	,900		-2,564	,012
Differentness	,055	,052	,052	1,057	,293
Exterior	,158	,059	,165	2,678	,009*
Interior	,305	,093	,270	3,263	,002*
Suitability for praying	,001	,078	,001	,015	,988
Invitingness	,329	,073	,308	4,527	,000*
Style	,259	,082	,254	3,145	,002*
DA4-Free-shaped Approach	R	R Square	Adjusted R Square	Std. Error of the Estimate	
	,904	,818	,808	,503	
	Sum of Squares	df	Mean Square	F	Sig.
Regression	106,762	5	21,352	84,52	,000
Residual	23,75	94	,253		
Total	130,51	99			
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std.Error	Beta		
(Constant)	-,609	,272		-2,238	,028
Differentness	,201	,063	,172	3,200	,002*
Exterior	,247	,070	,262	3,509	,001*
Interior	-	-	-	-	-
Suitability for praying	,271	,060	,299	4,492	,000*
Invitingness	,083	,069	,080	1,197	,234
Style	,307	,075	,280	4,099	,000*

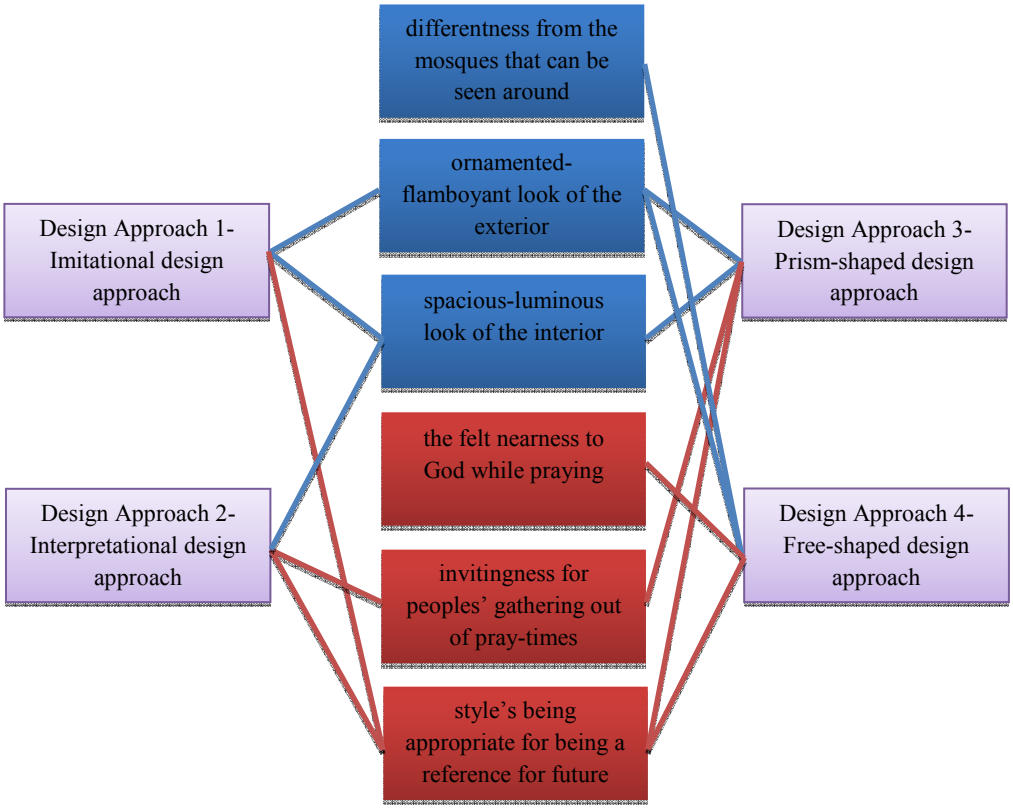


Figure 3. Effective physical-emotional characteristics for general like-dislike scorings of participants for the 4 mosque design approaches

4. CONCLUSION

Study diagnosed a group of young participants' appreciation with the mosques that were designed without imitating any style or figure from history. Instead, presence of interpreted figures raised their positive responses. This result gives idea to architects about what to do and what not to do when developing new design approaches for mosques. Public seems to be bored with what is present at hand and is open for new experiences. Furthermore, the power of non-imitating approaches was found to be superior to imitational approaches in terms of raising emotional responses. The open-air staircase-like example of the free-shaped approach, for instance, was the only sample that was appreciated by participants for its *felt nearness to God while praying* characteristic. Since mosques are sacred places, this role of emotional responses should not be neglected.

Limited number of participants (N=100), mosque design approaches (n=4) and physical/emotional characteristics (n=6) were used in this pilot study. Same research can be repeated with more number and variety of these components. In fact, Imam-Hatip school students was an accurate group of participants in this study because they were young, representing young generations' opinion on the subject, and were sensitive to the subject matter due to their religion-based education. They should be involved in future researches as well. Their appreciation with *newness / the Modern / the interpreted* is distinguishable. Their scorings were in line with the theoretical discourses of academics, eminent architects and art historians recommending skillful interpretations rather than direct imitations. Considering this situation, one can assume that the judgmental distance between architects and non-architects is actually smaller for certain types of buildings (sacred places in this study) and may be getting smaller for any type of building nowadays, at the beginning of 21st century. Agreement between architects and non-architects seems more possible than it happened in the 20th century.

Briefly, findings of this study are important in terms of its display the parallelism of opinions between the eminent authorities and public (the high-school students in specific) and its use of experimental methodology that measured public's judgment via a survey. Moreover, the study illuminates the real/actual status of the frequently built unprincipled/imitational mosques in public's mind which is found to be less satisfying than the mosques representing a relatively modern approach. Now, mosque design is more evidenced (theoretically and experimentally) and architects can define their way more securely.

CONFLICT OF INTEREST

No conflict of interest was declared by the authors.

REFERENCES

[1] Erzen, J., 2011, "Reading Mosques: Meaning and Architecture in Islam", *The Journal of Aesthetics and Art Criticism*, 69, 125-131

[2] Serageldin I., 1990, "Contemporary Expressions of Islam In Buildings: The Religious and The Secular", Expressions of Islam in Buildings, *Aga Khan Publication*, 11-47

[3] Verkaaik O., 2012, "Designing the 'Anti-mosque': Identity, religion and Affect in Contemporary European Mosque Design", *Social Anthropology*, 20(2), 161-176

[4] Taib, MZM, Rasdi, MT., 2012, "Islamic Architecture Evolution: Perception and Behavior", *Procedia-Social and Behavioral Sciences*, 49, 293-303

[5] Kuban D., 1967, "20.yy'ın İkinci Yarısında 16.yy. Stilinde Cami Yaptırmayı Düşünenlere", *Mimarlık*, 47, p.7

[6] Gürsoy, E., 2013, "Unprincipled Approach" in the Contemporary Mosque Architecture", *SDU Faculty of Arts and Sciences*, Journal of Social Sciences, 28, 239-253

[7] Eyüpgiller K.K., 2006, "Türkiye'de 20.yy. Cami Mimarisi", *Mimarlık*, 331, pp.20-27

[8] Al-Araby, KMG., 1998, Architecture of the Contemporary Mosque, Ismail Serageldin and James Steel, Editors, *Digest of Middle East Studies*, 7(4), 38-42

[9] e-architect, 2014, Mosque Architecture: Islamic Buildings. *Major Religious Architectural Projects from Around the World*, http://www.e-architect.co.uk/mosque-buildings, Accessed: 02.07.2014

[10] Serageldin I., Steele, J., 1998, "The Architecture of the Contemporary Mosque: New Architecture", *Academy Editions*, London, 16-19

[11] Jahic, E., 2008, "Stylistic Expressions in the 20th Century Mosque Architecture", *Prostor*, 16, 1-21

[12] Gifford R., Hine DW., Muller-Clemm W., Reynolds D. and Shaw K., 2000, "Decoding Modern Architecture, A Lens Model Approach for Understanding the Differences of Architects and Laypersons", *Environment and Behavior*, 32(2), 163-187

[13] Brown G. and Gifford R., 2001, "Architects Predict Lay Evaluations of Large Contemporary Buildings: Whose Conceptual Properties", *Journal of Environmental Psychology*, 21, 93-99

[14] Fawcett W., Ellingham I. and Platt S., 2008, "Reconciling the Architectural Preferences of Architects and the Public", *Environment and Behavior*, 40(5), 599-618

[15] Purcell AT., Peron E. and Sanchez C., 1998, "Subcultural and Cross-cultural Effects on the Experience of Detached Houses, An Examination of Two Models of Affective Experience of the Environment", *Environment and Behavior*, 30(3), 348-377

[16] Hershberger, RG., 1969, "A Study of Meaning and Architecture", In H.Sanoff & S.Cohen Eds., EDRA 1 Radleigh, *North Caroline State University*, 86-100

[17] Wilson MA, Canter D., 1990, "The Development of Professional Concepts", *Applied Psychology: An International Review*, 39, 431-455

[18] Wilson, MA, 1996, "The Socialization of Architectural Preference", *Journal of Environmental Psychology*, 16, 33-44

[19] Nasar, JL., 1989, "Symbolic Meaning of House Styles", *Environment and Behavior*, 21(3), 235-257

[20] Sadalla, EK, Verschure B, Burroughs J., 1987, "Identity Symbolism in Housing", *Environment and Behavior*, 19, 569-587

[21] Nasar JL, Kang, J., 1989, "Symbolic Meanings of Building Style in Small Suburban Offices", G.Hardy (Ed), *Changing Paradigms: Proceedings of EDRA 20*, 165-172

[22] Nasar JL, 2002, "What Design for a Presidential Library? Complexity, Typicality, Order and Historical Significance", *Empirical Studies of the Arts*, 20(1), 83-99

[23] Nasar JL., 2001, "Planning the Appearance of the New York Times New Corporate Headquarters Building", *Association of the Collegiate Schools of Architecture Conference*, Cleveland, OH

[24] Nasar, JL, Stamps AE, Hanyu K., 2005, "Form and Function in Public Buildings", *Journal of Environmental Psychology*, 25, 159-165