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Police Station Facades: Searching the Architectural Characteristics that can be Appreciated by all

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ABSTRACT

This study proposes a model for measuring the responses of architects (n=32), teachers (n=51) and police officers (n=50) for a set of police station facades in order to diagnose the architectural style characteristics that affect these groups similarly. Approachability, professional outlook and prestigious outlook were the independent variables as appreciation was the dependent variable of the study. An expert group (n=5) assessed a large set of images (n=60) and related them with architectural characteristics (n=14). Images with repeating characteristics were eliminated so a more reliable set of images (n=20) was used in the study. Via the questionnaire, 11 questions were asked and 133 participants gave response. Results indicated facades that were / had foursquare, well-defined entrance, massive-transparent, legible, elaborated, humanly-inhumanly scaled, static, traditional-reformer, traditional roof-modern roof, varied in colors, and monotonous in fenestration characteristics were raising positive response of all participants. The study is important in terms of its potential to assist in decision giving processes of architects for the specific building type facades that has to give a positive image to whole society. In addition, the study proposes a research model that is more specific to designers rather than psychology related disciplines via combining conventional research methodologies with architectural characteristics.

Keywords: Police station design, perception, contemporary architecture, user response, aesthetic appreciation.

1. INTRODUCTION

Pluralized policing governance and delivery, changed management practices, increased diversification and representations within police organizations have been considered to be the reflections of change in policing since 1960s in western societies [1]. In line with these developments, police-public relations have gained importance recently in Turkey as the duty of police has changed from arresting criminals to preventing crimes [2]. Ensuring safety and security for the continuity of public order has been defined as the mission whereas deterring and arresting the ones who disturb the order, participating public safety policies, giving trust through happy staff and human-centered services have been declared as the vision of Turkish National Police [3]. In this context, it has become necessary for the police and public to be in direct contact and cooperation for these

ideals to be materialized. These changes have inevitably affected expectations of public from the police and police stations as well. Police station buildings seem to be the main mediums through which these expectations can be fulfilled, therefore their facades can be considered as the media that motivates or deters direct contact. This study focuses on the architectural characteristics that such a media should have for supporting fluidity of interaction.

1.1. Perceptional differences

Effects of buildings on perceivers have been studied frequently. Hershberger [4] has been mentioned to be the first researcher who documented perceptional differences between architects and laypersons and underlined the role of architectural education in this difference [5]. Several other researchers who worked with different sets of building types and professional groups also came up with similar findings. Wilson [6] focused on the source of differences and documented that architectural education was effective on students and their way of understanding buildings, i.e., architectural students' tastes were diverting from laypersons' assessments step by step as they progressed in education. The changes of taste and judgment in architectural education were displayed in another study which compared the scorings of different and equivalent levels of Turkish and Polish students; although Polish students were found to be adopting the intangible and abstract language of architectural design earlier than their Turkish peers, both Turkish and Polish students were showing similar judgmental patterns through the end of their education [7]. Another result of this special educational process was architects' misjudgments when they were predicting about public taste on housing [8] or large contemporary buildings [5]. Architects and laypersons were found to be using different conceptual properties in assessments on buildings therefore the physical and formal properties causing this differentiation required detailed investigation and support [5]. In this context, contemporary office buildings were examined and they were found to be affecting architects and laypersons differently in terms of emotional impact and global aesthetic qualities and, not surprisingly, the objective features that were causing these differing assessments were found to be almost totally different for each group. Metal claddings, triangles and rounded corners affected architect participants in their assessments whereas reflectivity, glass, stories, fenestration and color uniformity affected laypersons in terms of arousal [9]. Fanciness was the only common objective feature that affected both groups similarly [9]. An "ordered preference model" was also proposed in order to encourage designs that can be appreciated by both sides. According to this model, architectural attributes were ordered from basic to complex and preferences of laypersons were found to be more dominated by simple attributes (like roof) whereas architects' preferences were more dominated by the complex attributes (like character) [10].

Interviews with the respondents of two very different cities revealed perceptional similarities in judging house styles; high-style or atypical houses were not favored by both groups, therefore architectural components of style or individual buildings were more affective in judgments than design review (the architectural appearance controls or visual impact analyses), bulk (the total volume of the building), demographic and personality factors [11]. This implies possible agreements or presence of strong perceptional similarities between laypersons in judging housing styles and motivates similar investigations for public buildings as well. Form follows function doctrine was found to be ineffective in judgments of laypersons from Tokyo, Montreal and Columbus; they guessed the original functions of the sample building images wrongly, so their diagnose for city halls, libraries, museums and live theaters were found to be weak [12]. Variety in laypersons' formal expectations from and judgments for public buildings need further building-type-specific research. Effects of complexity and newness of public buildings were studied with layperson participants; new/modern buildings were preferred to older ones, when maintenance in older buildings were not controlled, and situation was turning to opposite as the maintenance was controlled. When newness was tested together with complexity, newness and preference were found unrelated for the buildings high in complexity so well-maintained, old and complex buildings were preferred by laypersons as much as the new and complex ones [13]. All such studies underline the importance of old/traditional/vernacular buildings in layperson judgments therefore implies old-new or traditional-modern combinations for the studies that include layperson judgments. In contrast, layperson judges classified medical building facades in terms of expected care and comfort in three architectural expression categories; traditional house type, brick office type and large medical type, and diagnosed the large medical type to be the highest in assumed quality of care and expected comfort [14]. Effect of traditional forms showed variation according to laypersons' expectations from different functional types.

Studies on such perceptional differences and similarities in architecture has been important because architecture was considered as an effective tool in constructing cultural relations in society via legitimating certain social practices as being common sense and beyond question [15]; therefore, competing and contrasting architectural preferences of social groups needed special concern in order to obtain a status of reconciliation. In addition, architectural design has been perceived as a user-based activity in which the architect is expected to act like an advocate of users [16]. It is certain that architects need to develop their understanding for user/perceiver responses to buildings, for their own specialized perceptions, for the architectural characteristics that stimulate responses and for the tools for decoding all these issues.

1.2. Raising Confidence in the Police, Role of Police Stations

Confidence in the police was explained through regime nature of societies; long-term stable authoritarian and long-term stable democratic regimes were reported to be raising confidence in the police whereas the same confidence was reported to be decreasing in the countries with higher homicide rates [17]. Fair treatment of the police, in another study, was found to be the most important predictor of citizens' evaluations about the police [18]. Eventually, what police station buildings communicate was found to be affecting in peoples'

emotive readings of security and safety thus effective in social control and crime prevention. Fortress-like police stations were found to be perceived as intimidating whereas the ones like public buildings, with transparency and porosity, were found to be unintimidating because of the blurred street-building borders [19]. Similarly, perceived likelihood of conviction was found to be affected by the architecture of courthouses, a similar building type related with crime, i.e., a high-style courthouse built in 1995 was causing discomfort and was associated with conviction compared to an old building which had been built as a convent in 1345 and converted to a courthouse in 1874 [20].

Authority, professionalism and approachability of police station facades were assessed by Clinton and Devlin [21]in relation to three exterior categories, i.e., modernist, post-modernist and residential. Authority variable yielded ineffectual, strong and outdated titles, as professionalism yielded unskilled, non-traditional and governmental and approachability yielded uninviting, accessible, public and impenetrable titles in factor analyses. These titles were correlated with styles; the most authoritative exteriors were the large and domineering ones whereas the least authoritative ones were the residential and small ones, the most professional exteriors were the ones dominating their surroundings whereas the least professional ones were the ones that appeared to contain unskilled officers and the most approachable exteriors were the ones with clear walkways, windows and entrances whereas the least approachable ones were the large buildings with thick walls, few windows and sturdy façade. New and modern facades were reported to be liked by participants. Besides, the relationship between participants' political leanings and their façade preferences were not supported [21].

All these indicate strong relationship between preferences and the architectural characteristics that facades contain and encourage further research that can guide designers about what to do and what not, to avoid in police station design.

2. THE STUDY

2.1. Methodology

The purpose of the study was diagnosing the police station facade characteristics that affect different interest groups (architects, teachers and police officers) similarly. A tool was proposed for measuring and comparing groups' responses to a set of images displaying various characteristics representing different architectural styles.

Variables and Research Problems: The study was based mainly on three independent and one dependent variable. Approachability, professional outlook and prestigious outlook of police station facades were the independent variables whereas appreciation was the dependent one. Considering these, research problems were the following:

RP1: Diagnosing the independent variables that affect appreciation of each participant group and finding out the common / shared independent variable(s) that affect different interest groups similarly.

RP2: Considering the common / shared independent variable(s), finding out the images that represent these variables positively and relating these images with architectural characteristics.

RP3: Restudying the selected images and architectural characteristics, drawing a clear picture of the relationships between common / shared independent variables, appreciation variable and the architectural characteristics.

Image-selection process (The preliminary study): Image selection is an important part of inquiries like present one since it effects reliability and interpretation of findings directly. The study started with a set of 60 images each chosen by researchers from the digital media. Since style variability of present police office buildings would delimit study's differentiation of styles, building images that represented other functions (e.g. official buildings and museums) were also included. For diagnosing the style that could be attributed to any chosen image, 14 architectural characteristics were proposed in form of adjective pairs. Being experienced architects, researchers defined 25 possible style alternatives by grouping these characteristics in variation. The principles for this grouping were (i) combining the characteristics that did not conflict with each other and (ii) using minimum 3 and maximum 8 adjective pairs since exceeding these limits was considered to be confusing for interpretation and elimination. An expert group of 5 eminent architects judged 60 images in terms of 14 characteristics via a 5-point Likert scale, 1 indicating affinity to simple, traditional, static, massive, plain, rough, transitory, mysterious, humanly scaled, monotonous in colors, monotonous in materials, well-defined entrance, monotonous in fenestration and traditional roof characteristics whereas 5 indicating affinity to the opposite pole. Table 1 displays the proposed characteristics and the Intraclass Correlation test results. Test results indicated only one characteristic was unreliable (>,70).

Table 1. Intraclass Correlation Values for the 14 adjective pairs

	Architectural characteristics	N	Number of items	AMIC*
1	Simple – Complex	5	60	,814*
2	Traditional – Reformer	5	60	,877*
3	Static – Dynamic	5	60	,911*
4	Massive – Transparent	5	60	,823*
5	Plain – Ornamented	5	60	,763*
6	Rough – Elaborated	5	60	,758*
7	Transitory – Foursquare	5	60	,809*
8	Mysterious – Legible	5	60	,750*
9	Humanly scaled - Inhumanly scaled	5	60	,740*
10	Monotonous in colors - Varied in colors	5	60	,752*
11	Monotonous in materials - Varied in materials	5	60	,697
12	Clear entrance - Ill-defined entrance	5	60	,752*

13	Monotonous in fenestration - Varied in fenestration	5	60	,827*
14	Traditional roof - Modern roof	5	60	,914*

*AMIC. Average Measure Intraclass Correlation > ,70

Expert groups' judgments diagnosed the 25 images that corresponded to the component characteristics of 25 styles. For this, a table that displayed 60 images (the first column), the 13 architectural characteristics (the following 13 columns) and expert judgment average values for each image-characteristic intersection (the cells) was prepared. At the same time, expert judgments were divided into 5 intervals: 1,00-1,79 / 1,80-2,59 / 2,60-3,39 / 3,40-4,19 / 4,20-5,00. For choosing the images that represent each pre-determined style, the following numeric principle was applied to each component characteristics of the style under scrutiny: 1,00-1,79 and 4.20-5,00 intervals (the two poles) were used for determining the images that represented 3,4 and 5 characteristics (1st group) as 1,00-2,59 and 3,40-5,00 intervals (the two poles and their adjacent intervals) were used for the images that represented 6,7 and 8 (2nd group) characteristics. In the end of the first part, 12 images from the 1st group and 13 from the 2nd were chosen, thus 35 risky images that might cause confusion in interpretation were eliminated.

From the 25 images, the most reliable 20 (an even group, 10 from the 1st group and 10 from the 2nd) was chosen via the following two steps. A similar table was prepared for the chosen 25 images. Cells were marked as each characteristic was present in the related image. The last row indicated the number of times that each characteristic was appearing for the 25 images. The images that contained the characteristics appearing 2, 3 and 4 times were kept as the images with characteristics appearing 5 and more times were eliminated (since there were other pictures in the group indicating the same characteristic). One from each image group was dropped by this way. In the next and the last step, the images with the characteristics that appeared 4 times were refocused. There were7 images of such from the 1st group and 4 images from the 2nd. The number of characteristics of each image was portioned to the total number of the same characteristics appearing in 25 images. The images that gave the highest values were eliminated, so 1 image from the 1st and 2 images from the 2nd group were excluded. Finally the number of the set was reduced to 20 and the ideal set involved 10 images to which 3, 4 or 5 characteristics were attributed and 10 images to which 6, 7 or 8 characteristics were done so. The images, the architectural characteristics that were attributed to them and the mean values that determined these attributions are listed in Picture 1. Image list was recomposed so that style groups appeared in changing orders, one image from style 1 followed by one image from style 2.

The Questionnaire: Before study variables, 8 demographic questions were asked. They were; (i) gender, (ii) age, (iii) educational level, (iv) occupation, (v) experience in occupation, (vi) whether participant had a police relative or friend, (vii) participant's general familiarity to police office buildings and (viii) whether participant had ever been in a police office.

Following part was devoted to dependent and independent variables of the study, each were questioned via sub-variables (n=11).

For measuring *approachability*, the following sub-variables were proposed:

(i) Legibility; whether the building's actual function was guessable by judging its exterior,
(ii) Invitingness; whether participant would like to enter the building without any hesitation in any condition and,
(iii) Cuteness; whether building looks attractive, nice or sincere considered children's point of view in specific.

Professional look was measured through the following sub-variables:

(i) Giving confidence; whether a building's presence in nearby environment would raise participant's feeling of safety,
(ii) Expert look; whether participant thinks all operations can be run quickly and effectively in the building and,
(iii) Equipment and technology; whether participant guesses there are adequate equipment and technologies that can ease the operations run inside the building.

Prestigious look was studied via the following three sub-variables:

(i) Strength; whether building was raising esteem and respect through its authoritarian look,

(ii) Positive image; whether building was looking contemporary and modern, representing a high-status position and,
(iii) Building aesthetics; whether building was representing a high level architectural expression that would raise positive feelings of those who see it in their nearby environments.

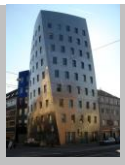
Being the dependent variable, *appreciation* had two sub-variables:

(i) Personal appreciation; whether individuals liked or enjoyed the image of the building personally, regardless of operational and social concerns,
(ii) Value of becoming prevalent; whether participant would recommend this style of building to authorities for it (the style) to be repeated all over the country.

Sub-variables were asked indirectly, in form of questions targeting/addressing the meaning. For each sub-variable, participants were asked to respond according to a scenario. Scenarios varied between barely giving opinion to assuming self being a child and judging the image from a child's point of view, being a citizen who needs to visit the police station or acting as an authority who is charged with decision giving for the presented images of police stations.

Participants (32 architects, 51 teachers and 50 police officers) judged 20 images for the 11 sub-variables via a 5-point Likert type scale (1= very negative and 5=very positive). Cronbach alpha values representing reliability of occupation group responses were positive thus all judgment scores could safely be used for further investigation. Table 2 displays related results. The detailed study run in the image-selection process and the

way questions were asked were considered to have positive effect on these high values of reliability.

N	Image	Style	Mean	N	Image	Style	Mean
P1		Reformer Modern roof Transparent Legible Elaborated Complex Monotonous in colors Ornamented	4,2 4,4 4,8 4 4,4 3,6 2,4 4	**P11**		Traditional Traditional roof Complex Dynamic Ornamented Elaborated	1,8 1,2 4,2 3,8 4,6 4,2
P2		Complex Dynamic Ornamented Varied in fenestration Varied in colors	4,2 4,4 4 4,8 4,2	**P12**		Simple Plain Humanly scaled Modern roof Well-defined entrance	1,4 1,4 1,2 4,8 4,4
P3		Inhumanly scaled Massive Monotonous in colors Monotonous in fenestration Ill-defined entrance Transitory	3,6 1,6 1,4 1 1,6 2	**P13**		Simple Plain Humanly scaled Monotonous in colors Legible Ill-defined entrance	1,6 1,8 1,8 1,8 3,4 1,6
P4		Traditional Traditional roof Monotonous in fenestration Static	1 1,2 1,4 1	**P14**		Simple Static Plain Massive	1,6 1,4 1,4 1,6
P5		Simple Static Plain Monotonous in colors Monotonous in fenestration Transparent	1,4 1,6 1,6 2,4 1,8 3,4	**P15**		Complex Reformer Dynamic Ornamented Transitory Varied in fenestration Varied in colors	4,2 4,6 4,8 3,4 2,2 3,4 3,4
P6		Reformer Dynamic Modern roof Ill-defined entrance Varied in fenestration	4,6 4,4 4,8 1,6 4,6	**P16**		Mysterious Modern roof Foursquare Monotonous fenestration	1,4 5 4,2 1
P7		Transparent Foursquare Legible Humanly scaled Well-defined entrance Modern roof	3,6 4 3,8 2,2 3,4 4,8	**P17**		Traditional Traditional roof Complex Ornamented Dynamic Humanly scaled Varied in colors	2,2 2 3,8 3,4 4,2 2 2,2
P8		Reformer Modern roof Varied in colors	4,2 4,8 4,4	**P18**		Simple Static Plain Foursquare Mysterious	1,2 1,4 1,4 4,6 1,6
P9		Dynamic Complex Reformer Inhumanly scaled Massive Monotonous in colors	4,8 4 4,8 3,6 2 2,4	**P19**		Simple Plain Humanly scaled Monotonous in colors Legible Well-defined entrance Elaborated	1,6 2 1,2 1,2 3,8 4,8 3,6
P10		Foursquare Well-defined entrance Modern roof Varied in fenestration	4,2 4,6 4,8 4,2	**P20**		Mysterious Reformer Dynamic Modern roof Transitory	1,6 5 5 4,8 1,6

Picture 1.The image set and the architectural characteristics attributed to them by expert group judgment

Note: P4, P7, P10, P11, P12, P17 and P19 represent real police offices.

Table 2. Cronbach's alpha values of participant groups and all participants

			Architect			Teacher			Police officer			All participants		
	Variables		N	n	α	N	n	α	N	n	α	N	n	α
1	Approachability	Legibility	32	20	,754	51	20	,716	50	20	,894	133	20	,831
2		Invitingness	32	20	,908	51	20	,839	50	20	,916	133	20	,890
3		Cuteness	32	20	,897	51	20	,852	50	20	,896	133	20	,886
4	Professional look	Giving confidence	32	20	,919	51	20	,915	50	20	,915	133	20	,919
5		Expert look	32	20	,936	51	20	,880	50	20	,905	133	20	,910
6		Equipment and technology	32	20	,833	51	20	,852	50	20	,892	133	20	,870
7	Prestigious look	Strength	32	20	,883	51	20	,872	50	20	,902	133	20	,895
8		Positive image	32	20	,785	51	20	,824	50	20	,874	133	20	,848
9		Building aesthetics	32	20	,702	51	20	,848	50	20	,875	133	20	,847
10	Appreciation	Personal appreciation	32	20	,772	51	20	,798	50	20	,851	133	20	,817
11		Value of becoming prevalent	32	20	,823	51	20	,780	50	20	,889	133	20	,841
All			32	20	,968	51	20	,972	50	20	,980	133	20	,976

n=Number of items

Participants: Researchers of the study (n=2) determined the 60 images-set from which a reliable set of 20 was chosen. In addition, they decided about the architectural characteristics and the possible (hypothetical) styles that could have been composed of these characteristics. In similar researches, generally it is the researchers who decide about the image set that is going to be used for judgment. This study proposed a preliminary operation to facilitate decision giving process and charged 5 eminent teachers of architecture for judging each image (N=60) in terms of their degree of representing 14 architectural characteristics. In other words, each of these 5 experts performed 60 x 14 = 840 judgments. The first 25 and the last 20 images that represented the pre-determined styles were chosen by this way. Therefore, researchers and the expert group were very active participants of this study.

The main part of the study was devoted to variables and appreciation of 3 different occupation groups. Figure 1 displays frequency values for the demographics of these groups. Further analyses indicated being familiar with police office buildings in general was effective in all participants' judgments on professional look (F= 4,04, df=4 and p=.004) prestigious look (F=3,423, df=4 and p=.011) and appreciation (F=2.502, df=4 and p=.046) scores whereas participants' actual experiences in these buildings were ineffective in their related judgments (Approachability: F=0,47, df=4 and p=.0758; Professional look: F=1,6, df=4 and p=.0,178; Prestigious look: F=1,235, df=4 and p=.3; Appreciation; F=0,732, df=4 and p=.572). Effects of other demographic factors on the present study were not tested since these were related with psychology of judgment rather than its architectural concerns.

The analyses: Judgment scores for sub-variables were grouped under 4 headings so they indicated the variables of the study. ANOVA test results representing all participants' responses indicated presence of significant differences of judgment between participant groups so similarities could also be considered significant. In addition, Pearson Correlation test results representing all participants' responses indicated significant relationships between independent and dependent variables so the research model (i.e. the dependent and independent variables design) was reliable and suitable for further investigation. For diagnosing the effect of approachability, professional look and prestigious look of the 20 police office images on appreciation, Regression tests were run for the responses of each group.

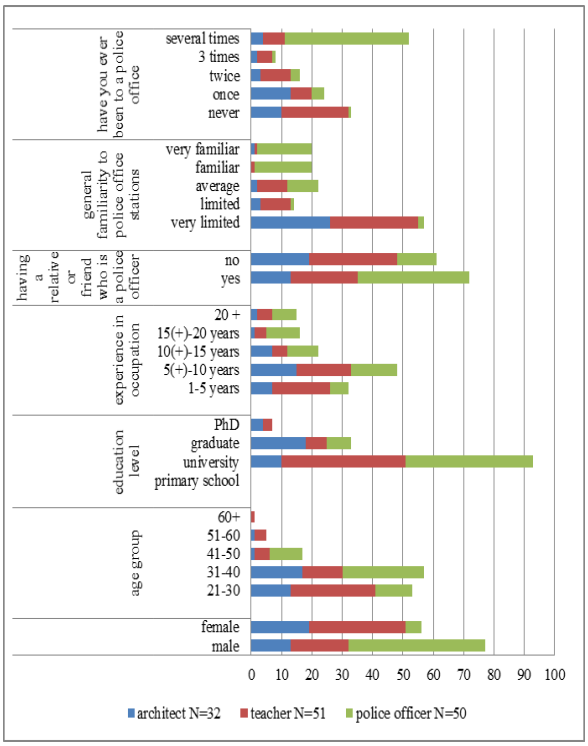


Figure 1. Demographic variables of the study and their frequency values

These tests indicated the independent variables that affected each groups' judgment of appreciation so common/shared independent variables were illuminated. In specific to each group, images and their scores were arranged from the most positive to negative. The images that had the highest 3 and the lowest 3 scores of each group were chosen for the focused independent variables and the appreciation variable, thus appreciation was treated as an independent variable this time. As each image was defined via architectural characteristics beforehand, the characteristics appearing for the most favored and the least favored images were omitted. Remaining characteristics were the ones indicating that groups' non-contradicting opinion about the architectural characteristics representing the chosen police office building facades. These operations were run for the 3 participant groups of the study and for all participants and the reappearing/common characteristics were considered to be the architectural characteristics on which all participants agreed.

2.2. Findings

Before focusing on the judgments of profession groups and their relation with architectural characteristics, differences between groups and correlations between variables were tested. Presence of significant results in both tests was the preconditions of the designed investigation.

ANOVA test result-Presence of significant similarities and differences. ANOVA test results indicated participant groups were showing significant difference in general in judging professional look ($F=6,189$, $df=3$ and $p=.003$), prestigious look ($F=7,631$, $df=3$, $p=.001$) and appreciation ($F=4,733$, $df=3$, $p=.010$) variables. Furthermore, Tuckey tests indicated architects' and teachers' judgments to be different than that of police officers'. Significant general disagreements in judgments assured the study to continue considering judgments of all participants (rather than focusing on individual participant groups) but still viewing each group's specific position within the total group.

Pearson Correlation test results-Presence of significant relationships between study variables. Results indicated significance ($p>.05$) of all relations between the 4 variables of the study as none of the variables were displaying independency or irrelevance. Table 3 displays results. Significant relationships indicated that the proposed research model was appropriate for measuring different groups' responses to police station facades.

Table 3. Pearson correlation test results indicating significant relationships between study variables

		Approachability	Professional look	Prestigious look
Professional look	Pearson correlation	.441**		
	Sig. (2-tailed)	0		
	N	133		
Prestigious look	Pearson correlation	.435**	.871**	
	Sig. (2-tailed)	0	0	
	N	133	133	
Appreciation	Pearson correlation	.486**	.776**	.878**
	Sig. (2-tailed)	0	0	0
	N	133	133	133

** correlation significance level is 0,01 (2-tailed)

RP1: The common / shared independent variable(s) that affect different interest groups similarly. Regression analyses were run for diagnosing the independent variables affecting each participant group's appreciation (the dependent variable) from the 20 images representing different style and architectural characteristics. Table 4

displays results for each group. According to results, approachability and prestigious look were effective in architects' and teachers' appreciation judgments whereas only prestigious look was effective in police officers' appreciation judgments. Professional look of police office facades was ineffective in all groups' appreciation. Since police officers can approach to any police office building without any hesitation and limitation whereas other citizens like architects and teachers may think twice, police officers' judgments for approachability were considered to be positively prejudiced. Prestigious look was found to be the common independent variable that effected all participants' appreciation from the 20 police office building facades. This variable was also slightly more effective in police officers' appreciation judgments (R2=0,835) than that of the teachers' (R2=0,74) and architects' (R2=0,72). Therefore, prestigious look was diagnosed to be the only common/shared independent variable affecting architects', teachers' and police officers' appreciation. On the other hand, significant results for all participants indicated approachability to be the other variable representing appreciation judgments. As a result, both variables, approachability and prestigious look, were diagnosed to be the two factors affecting appreciation so could be a base for the following steps of the study.

Table 4. Regression analyses indicating 3 participant groups' ANOVA test results (the model significance), Model summary (the model determination percentage) and Regression values (the significant effects).

Participant Group 1 : Architects						
ANOVA[b]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6388,609	3	2129,536	24,02	**,000[a]**
	Residual	2482,359	28	88,656		
	Total	8870,969	31			
Model Summary						
Model			R	R Square	Adjusted R Square	Std. Error of the Estimate
-	1		,849[a]	**0,72**	0,69	9,41572
Coefficients[b]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	β		
1	(Constant)	-47,918	23,394		-2,048	0,05
	Approachability	**0,216**	**0,101**	**0,22**	**2,127**	**0,042**
	Professional look	-0,053	0,135	-0,08	-0,392	0,698
	Prestigious look	**0,705**	**0,164**	**0,861**	**4,291**	**0,000**
Participant Group 2 : Teachers						
ANOVA[b]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15432,245	3	5144,082	44,608	**,000[a]**
	Residual	5419,911	47	115,317		
	Total	8870,969	50			
Model Summary						
Model			R	R Square	Adjusted R Square	Std. Error of the Estimate
-	1		,860[a]	**0,74**	0,723	10,73859
Coefficients[b]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	β		
1	(Constant)	-33,505	15,982		-2,096	0,041
	Approachability	**0,285**	**0,103**	**0,259**	**2,775**	**0,008**
	Professional look	-0,031	0,106	0,041	0,292	0,772
	Prestigious look	**0,476**	**0,099**	**0,652**	**4,788**	**0,000**
Participant Group 3 : Police officers						
ANOVA[b]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	24304,565	3	8101,522	77,62	**,000[a]**
	Residual	4801,215	46	104,374		
	Total	29105,78	49			
Model Summary						
Model			R	R Square	Adjusted R Square	Std. Error of the Estimate
-	1		,914[a]	**0,835**	0,824	10,21637
Coefficients[b]						

Table 4. (continued) Regression analyses indicating 3 participant groups' ANOVA test results (the model significance), Model summary (the model determination percentage) and Regression values (the significant effects).

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	β		
1	(Constant)	-18,668	13,49		-1,384	0,173
	Approachability	0,032	0,072	0,03	0,448	0,656
	Professional look	-0,069	0,103	-0,088	-0,667	0,508
	Prestigious look	**0,741**	**0,102**	**0,978**	**7,241**	**0,000**
All participants						
ANOVA[b]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	49554,918	3	16518,306	157,172	**,000[a]**
	Residual	13557,473	129	105,097		
	Total	63112,391	132			
Model Summary						
Model			R	R Square	Adjusted R Square	Std. Error of the Estimate
-	1		,886[a]	**0,785**	0,78	10,25167
Coefficients[b]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	β		
1	(Constant)	-25,996	9,036		-2,877	0,005
	Approachability	**0,141**	**0,05**	**0,128**	**2,795**	**0,006**
	Professional look	0,007	0,062	0,009	0,108	0,914
	Prestigious look	**0,603**	**0,062**	**0,815**	**9,73**	**0,000**

a. Predictors: (Constant), Prestigious look, Approachability, Professional look
b. Dependent Variable: Appreciation

R Square: Determination coefficient; the percentage value indicating the effect independent variables on the dependent variable.

RP2: The common / shared independent variable(s), images that represent these variables and the architectural characteristics that appear in these images. After diagnosing approachability and prestigious look of police station facades as being the two variables that effect citizens' and all participants' (citizens and police officers) appreciation from facades, the images that represented each participant groups' judgments were found. The three images each group judged as the most approachable and having the most prestigious look were listed together with the three images each group judged as the least approachable and having the least prestigious look. The characteristics of each image had been determined beforehand. The characteristics that were present in both lists (the most and the least) were eliminated for assuring a characteristic's appropriateness. In the end, the images that were chosen for being the most approachable and having the most prestigious look by each participant group and all participants were left with the characteristics that were specific to them (not repeating in the least approachable and having least prestigious look images). Table 5 displays the characteristics attributed to images, elimination process and the remained characteristics for each group and all participants. Participant groups agreed on 5 images as they were judging prestigious look variable whereas their judgment varied more in number (n=7) for approachability. This situation supports the previous claim of the study indicating approachability being an effective variable for only citizens but not for police officers. Elimination was done with special care and two examples will be given here for displaying the principles: (1) Although the 3rd choice of police officers for approachability variable were shared by 2 images representing traditional approaches, traditionalism was eliminated from the characteristics list since the least approachable images of the same group were also determined to be traditional. (2) On the contrary, transparency was kept in the same list since it was not a characteristic of any of the images that were found to be the least approachable. Considering Table 5, foursquare, well-defined entrance, transparent, legible, humanly scaled, traditional, traditional roof, monotonous in fenestration, and static characteristics were found to be the characteristics that represented all participants' (architects, teachers and police officers) judgments for approachability as reformer, modern roof, transparent, elaborated, inhumanly scaled, massive and varied in colors characteristics were found for the prestigious look. These two lists gave an idea about the possible characteristics that can be affective in design decisions but still needed support and refinement.

Table 5. Numbers of the images reflecting judgments for the approachability and prestigious look variables (displaying the two poles), the omitted and remained characteristics in relation to participants

	Approachability				Prestigious look		
	1st	2nd	3rd		1st	2nd	3rd
Architects	**P5** Simple Static Plain Monotonous in colors Monotonous in fenestration Transparent	**P10** Foursquare Well-defined entrance ~~Modern roof~~ ~~Varied in fenestration~~	**P1** ~~Reformer~~ ~~Modern roof~~ Transparent Legible ~~Elaborated~~ ~~Complex~~ Monotonous in colors Ornamented	**P8** ~~Reformer~~ ~~Modern roof~~ Varied in colors	**P1** Reformer ~~Modern roof~~ ~~Transparent~~ ~~Legible~~ ~~Elaborated~~ ~~Complex~~ Monotonous in colors ~~Ornamented~~	**P8** Reformer ~~Modern roof~~ Varied in colors	**P15** ~~Complex~~ Reformer ~~Dynamic~~ ~~Ornamented~~ Transitory Varied in fenestration Varied in colors
	20th	19th	18th		20th	19th	18th
	P20 Mysterious ~~Reformer~~ Dynamic ~~Modern roof~~ Transitory	**P6** ~~Reformer~~ Dynamic Modern roof Ill-defined entrance ~~Varied in fenestration~~	**P11** Traditional Traditional roof Complex Dynamic Ornamented Elaborated		**P17** Traditional Traditional roof ~~Complex~~ ~~Ornamented~~ ~~Dynamic~~ Humanly scaled Mysterious	**P11** Traditional Traditional roof ~~Complex~~ ~~Dynamic~~ ~~Ornamented~~ Elaborated	**P7** Transparent Foursquare Legible Humanly scaled Well-defined entrance Modern roof
	1st	2nd	3rd		1st	2nd	3rd
Teachers	**P10** Foursquare Well-defined entrance Modern roof ~~Varied in fenestration~~	**P7** Transparent Foursquare ~~Legible~~ ~~Humanly scaled~~ Well-defined entrance ~~Modern roof~~	**P5** ~~Simple~~ Static ~~Plain~~ ~~Monotonous in colors~~ Monotonous in fenestration Transparent		**P1** Reformer Modern roof Transparent ~~Legible~~ Elaborated ~~Complex~~ ~~Monotonous in colors~~ ~~Ornamented~~	**P9** ~~Dynamic~~ ~~Complex~~ Reformer Inhumanly scaled Massive ~~Monotonous in colors~~	**P8** Reformer Modern roof Varied in colours
	20th	19th	18th		20th	19th	18th
	P6 Reformer Dynamic ~~Modern roof~~ Ill-defined entrance ~~Varied in fenestration~~	**P15** Complex Reformer Dynamic Ornamented Transitory ~~Varied in fenestration~~ Varied in colors	**P13** ~~Simple~~ ~~Plain~~ ~~Humanly scaled~~ ~~Monotonous in colors~~ ~~Legible~~ Ill-defined entrance		**P17** Traditional Traditional roof ~~Complex~~ ~~Ornamented~~ ~~Dynamic~~ Humanly scaled Mysterious	**P13** Simple Plain Humanly scaled ~~Monotonous in colors~~ ~~Legible~~ Ill-defined entrance	**P4** Traditional Traditional roof Monotonous in fenestration Static
	1st	2nd	3rd		1st	2nd	3rd
Police officers	**P7** Transparent Foursquare Legible Humanly scaled Well-defined entrance ~~Modern roof~~	**P10** Foursquare Well-defined entrance ~~Modern roof~~ ~~Varied in fenestration~~	**P4** ~~Traditional~~ ~~Traditional roof~~ ~~Monotonous in fenestration~~ ~~Static~~	**P11** ~~Traditional~~ ~~Traditional roof~~ ~~Complex~~ ~~Dynamic~~ ~~Ornamented~~ ~~Elaborated~~	**P1** ~~Reformer~~ ~~Modern roof~~ Transparent ~~Legible~~ Elaborated Complex ~~Monotonous in colors~~ Ornamented	**P10** Foursquare Well-defined entrance ~~Modern roof~~ ~~Varied in fenestration~~	**P9** ~~Dynamic~~ Complex ~~Reformer~~ Inhumanly scaled Massive ~~Monotonous in colors~~
	20th	19th	18th		20th	19th	18th
	P6 Reformer Dynamic ~~Modern roof~~ Ill-defined entrance ~~Varied in fenestration~~	**P20** Mysterious Reformer Dynamic ~~Modern roof~~ Transitory	**P15** Complex Reformer Dynamic Ornamented Transitory ~~Varied in fenestration~~ Varied in colors		**P13** Simple Plain Humanly scaled ~~Monotonous in colors~~ ~~Legible~~ Ill-defined entrance	**P4** Traditional Traditional roof Monotonous in fenestration Static	**P6** ~~Reformer~~ ~~Dynamic~~ ~~Modern roof~~ Ill-defined entrance ~~Varied in fenestration~~

Table 5. (continued) Numbers of the images reflecting judgments for the approachability and prestigious look variables (displaying the two poles), the omitted and remained characteristics in relation to participants

	1st	2nd	3rd	1st	2nd	3rd
All participants	**P10** Foursquare Well-defined entrance ~~Modern roof~~ ~~Varied in fenestration~~	**P7** Transparent Foursquare Legible Humanly scaled Well-defined entrance ~~Modern roof~~	**P4** Traditional Traditional roof Monotonous in fenestration Static	**P1** Reformer Modern roof Transparent ~~Legible~~ Elaborated ~~Complex~~ ~~Monotonous in colors~~ ~~Ornamented~~	**P9** ~~Dynamic~~ ~~Complex~~ Reformer Inhumanly scaled Massive ~~Monotonous in colors~~	**P8** Reformer Modern roof Varied in colors
	20th	19th	18th	20th	19th	18th
	P6 Reformer Dynamic ~~Modern roof~~ Ill-defined entrance ~~Varied in fenestration~~	**P20** Mysterious Reformer Dynamic ~~Modern roof~~ Transitory	**P15** Complex Reformer Dynamic Ornamented Transitory ~~Varied in fenestration~~ Varied in colors	**P17** Traditional Traditional roof ~~Complex~~ ~~Ornamented~~ ~~Dynamic~~ Humanly scaled Mysterious	**P4** Traditional Traditional roof Monotonous in fenestration Static	**P13** Simple Plain Humanly scaled ~~Monotonous in colors~~ ~~Legible~~ Ill-defined entrance

RP3: The appreciation variable, images that represent this variable and the architectural characteristics that appear in these images Operations run for RP2 were repeated for the appreciation variable this time. As the characteristics that were also present in the 3 least appreciated lists were omitted, the most appreciated images of each group and the characteristics that qualify them were left. Table 6 displays the remained characteristics for each group. As a result, foursquare, well-defined entrance, transparent, elaborated, static and monotonous in fenestration were the characteristics that were representing participant groups' (architects, teachers and police officers) judgments for appreciation. This result implies the need for an operation of refinement so for a last word.

As a result, the architectural characteristics affecting perceivers. Considering the images and the architectural characteristics lists prepared for RP2 and RP3, a final and shorter list of characteristics was obtained via sticking two lists together. Picture 2 displays results. Being foursquare, static and having well-defined entrances and monotonous fenestrations seemed important for police office buildings in terms of their effect on approachability and appreciation of perceivers. Having elaborated facades was important both for attaining a prestigious image and perceiver appreciation at the same time. Transparency was diagnosed to be the only characteristic that all participants judged to be related with appreciation, approachability and prestigious look of police office façades. For a more prestigious look, designers seem to be free to choose between transparency and massiveness, but if they prefer a more positive public appreciation and approachability at the same time it is better they favor transparency or try to make a combination of these two poles. Designing humanly or inhumanly scaled, traditional or reformer buildings and having a traditional or modern roof was left to designers' decision since all were important in participants' approachability and prestigious look assessments. Variety in colors was only effective in participants' prestigious look judgments, therefore it is also up to designers' choice to use color variations in design of police office facades. It is up to designers and authorities how to use and how much to use the characteristics given in Picture 2 in new design proposals but transparency seemed to be a first choice for the new police office facades.

Table 6. Numbers of the images reflecting judgments for the appreciation variable (displaying the two poles), the omitted and remained characteristics in relation to participants

	Appreciation				
	1st	2nd	3rd		
Architects	**P1**	**P5**	**P8**	**P9**	**P12**
	Reformer ~~Modern roof~~ ~~Transparent~~ ~~Legible~~ ~~Elaborated~~ ~~Complex~~ Monotonous in colors ~~Ornamented~~	Simple Static Plain Monotonous in colors Monotonous in fenestration ~~Transparent~~	Reformer ~~Modern roof~~ ~~Varied in colors~~	~~Dynamic~~ ~~Complex~~ ~~Reformer~~ Inhumanly scaled Massive Monotonous in colors	Simple Plain ~~Humanly scaled~~ ~~Modern roof~~ ~~Well-defined entrance~~

Table 6. (continued) Numbers of the images reflecting judgments for the appreciation variable (displaying the two poles), the omitted and remained characteristics in relation to participants

	20th	19th	18th
	P17	**P11**	**P7**
	Traditional	Traditional	~~Transparent~~
	Traditional roof	Traditional roof	Foursquare
	~~Complex~~	~~Complex~~	Legible
	Ornamented	Dynamic	~~Humanly scaled~~
	Dynamic	~~Ornamented~~	~~Well-defined entrance~~
	~~Humanly scaled~~	~~Elaborated~~	~~Modern roof~~
	~~Varied in colors~~		
	1st	2nd	3rd
Teachers	**P9**	**P1**	**P5**
	~~Dynamic~~	~~Reformer~~	~~Simple~~
	Complex	~~Modern roof~~	Static
	~~Reformer~~	Transparent	~~Plain~~
	~~Inhumanly scaled~~	~~Legible~~	~~Monotonous in colors~~
	~~Massive~~	Elaborated	~~Monotonous in fenestration~~
	~~Monotonous in colors~~	Complex	Transparent
		~~Monotonous in colors~~	
		Ornamented	
	20th	19th	18th
	P6	**P13**	**P3**
	~~Reformer~~	~~Simple~~	~~Inhumanly scaled~~
	~~Dynamic~~	~~Plain~~	~~Massive~~
	~~Modern roof~~	Humanly scaled	~~Monotonous in colors~~
	Ill-defined entrance	~~Monotonous in colors~~	~~Monotonous in fenestration~~
	Varied in fenestration	~~Legible~~	Ill-defined entrance
		Ill-defined entrance	Transitory
	1st	2nd	3rd
Police officers	**P10**	**P7**	**P11**
	Foursquare	Transparent	Traditional
	Well-defined entrance	Foursquare	Traditional roof
	~~Modern roof~~	~~Legible~~	~~Complex~~
	~~Varied in fenestration~~	~~Humanly scaled~~	~~Dynamic~~
		Well-defined entrance	~~Ornamented~~
		~~Modern roof~~	Elaborated
	20th	19th	18th
	P6	**P13**	**P2**
	1st	2nd	3rd
All participants	**P10**	**P1**	**P5**
	Foursquare	~~Reformer~~	Static
	Well-defined entrance	~~Modern roof~~	~~Simple~~
	~~Modern roof~~	Transparent	~~Plain~~
	~~Varied in fenestration~~	~~Legible~~	~~Monotonous in colors~~
		Elaborated	Monotonous in fenestration
		~~Complex~~	Transparent
		~~Monotonous in colors~~	
		~~Ornamented~~	
	20th	19th	18th
	P6	**P13**	**P17**
	~~Reformer~~	~~Simple~~	Traditional
	Dynamic	~~Plain~~	Traditional roof
	~~Modern roof~~	Humanly scaled	~~Complex~~
	Ill-defined entrance	~~Monotonous in colors~~	~~Ornamented~~
	~~Varied in fenestration~~	~~Legible~~	Dynamic
		Ill-defined entrance	Humanly scaled
			Varied in colors

2.3. Discussion

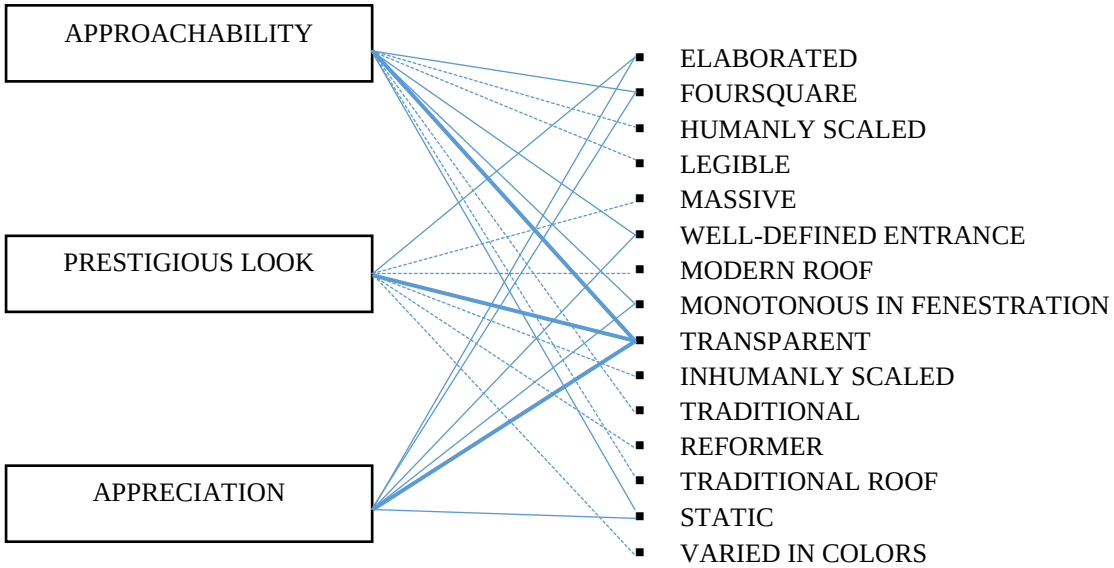
Objective of the study was diagnosing the architectural characteristics that had the potential of affecting architects and laypersons similarly so that designers and decision givers would give priority to these issues. Researchers collected real and possible police station images, established an image bank. For obtaining a meaningful set of images, rather than using a coincidental one, expert group judgments were used. Images that contained 2, 3 and 4 characteristics and images that contained 5, 6, and 7 characteristics were obtained via 3-step elimination process. The final set was judged by architects, teachers and police officers in terms of approachability, professional look, prestigious look and overall appreciation. Prestigious look was effective in appreciation of architects' and other laypersons' in-group judgments whereas approachability was effective in all participant's judgments. Considering approachability, prestigious look and overall appreciation and the images that represent these variables, certain architectural

characteristics were diagnosed to be related to these issues.

Final list (Picture 2) indicated transparency to be the main characteristic that needs consideration in design.

This finding was in line with previous studies that diagnosed transparency and porosity as positive characteristics in police station perception (such as [19]). Few windows were also diagnosed to be a factor that caused participants judging a police station image as least approachable [21]. This study proposes a balanced mixture of transparent-massive in facades since full transparency were not supported in terms of prestigious look. According to results, facades can be either massive or transparent for obtaining a prestigious look whereas must be transparent for approachability and appreciation. A balanced use of massive-transparent surfaces can be recommended to designers as full transparency also seems effective in public judgment.

Facades that were transparent or massive, foursquare, with well-defined entrance, legible, humanly or inhumanly scaled, with traditional or modern roof, having monotonous fenestration, looking static, elaborated and varied in colors were diagnosed to be positively effective in architects', police officers' and teachers' judgments therefore integrating all in appreciation. Proportions of these characteristics were considered to vary according to possible image sets and participants therefore were excluded in the study.



Picture 2. Architectural characteristics associated with participants' approachability, prestigious look and appreciation judgments for police station facades

Using a reliable image set was important. Image bank contained a mixture of facades that were supposed to be examples of simple-complex, traditional-modern-up to date, real-possible, old-new, well-known (by architects)-not known buildings. Simple-complex issue was used as a base in obtaining a balanced mixture of images. Results were not interpreted in simplicity-complexity terms (as proposed in [10]), since individual architectural characteristics was the focus of the present study.

This study's main objective was to guide designers instead of illuminating psychological or social patterns that are related with design. Therefore, all study was designed around characteristics and proposed a methodology that could directly relate judgments to characteristics. Previous Lens Model proposals (such as Gifford and his friends' study on the architects' and laypersons' perception for modern architecture [9]) were effective relating emotional responses of participant group to physical characteristics of building facades via Pearson Correlations. This simple statistical process encouraged experimenting new and observable processes, so that the proposed methodology can be followed, even interfered, by design practitioners as well.

3. CONCLUSION

Developments that appeared 1960s (such as architectural programming, environment-behavior studies, evidence-based design approach, universal design concept), puts architects in critical point at which they cannot listen their inner voice all through the design process but also pay attention to others' approaches to architecture too. It is obvious that designer is not alone in decision giving, instead exposed to several voices from which he/she has to choose the most reliable. At the same time, communication between certain building types and public became important and façade also became a medium delivering an institution's values to society. In other words, facades are texts through which certain messages and impressions be transmitted.

Certain architectural characteristics were diagnosed in this study for increasing the agreement between architects and laypersons regarding police stations. Transparency was diagnosed to be the main characteristic effective in judgments of all participants. Fortunately, architectural language has been becoming more and more transparent through the introduction of new building materials and construction techniques for almost all building types in 20th and 21st centuries and this study supports/encourages its effective use in police stations as well.

CONFLICT OF INTEREST

No conflict of interest was declared by the authors.

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