ASPECT SHAPER FACADE VISUAL QUALITY BUILDING ON JALAN PASAR BESAR MALANG

Eni Zuliana[1], Jenny Ernawati[2], Herry Santosa[3]
[1]Magister of Architecture, University of Brawijaya , Malang, Indonesia
[2,3]Department, of Architecture, University of Brawijaya , Malang, Indonesia
Email*:* enizuliana128@gmail.com , jenny_ernawati@ub.ac.id , hayherry@gmail.com

Abstract

Malang City is a a city designed by the Dutch Colonial nice and structured based on rule aesthetics caring environment facade visual quality building . Jalan Pasar Besar Malang is one of the the path that has score history and role important to development physical city of Malang. Research objectives this is for identify as well as describe aspect Influential visual quality significant to facade visual quality building on Jalan Pasar Besar Malang. Method used is quantitative with analysis linear regression. Based on analysis that has been conducted declared that aspect facade visual quality influential building significant to facade visual quality The building on Jalan Pasar Besar Malang is rhythm, coherence, scale, homogeneity, proportion and balance.

Keywords: aspect visual quality, facade building, Jalan Pasar Besar Malang

Introduction

Malang City is a city designed by Kansten with draft comfortable and beautiful city. There is many room open green, in the form of gardens the city that became one factor indication existence comfort and beauty created in the city of Malang. In addition to the comfort and beauty of Malang City, there are many relic building historic typical inheritance permanent colonial preserved by the Malang City Government is also one of the power drag Malang City. one area that has score historical is Malang Big Market. Malang City Big Market already there is since the colonial era , in that era the Big Market was called *Chineeschestraat* , which is a Dutch language which means a street inhabited by Ethnics Chinese (Setiamurdi and Santosa, 2017) . In that era there is a the rule named *Wijkenstelsel* which is the rule the require ethnicity Chinese inhabit Big Market area. majority activity from Public chinese the is trade, then no amazed area the known with area Chinatown.

Facade visual quality building need to be protected and preserved because Becomes characteristics a face city. Preservation conducted with notice aspect shaper facade visual quality building namely, cohesiveness, proportion, scale, rhythm, balance, homogeneity and simplicity. Facade visual quality buildings on Jalan Pasar Besar Malang can be always create environmental visual quality area historic as well as could give visual comfort for whole society. Visual perception of Public is one factor strong

shaper and will determine characteristics a city. Then from that, research this conducted for knowing facade visual quality building on Jalan Pasar Besar Malang based on perception community and know aspect shaper Influential visual quality significant to facade visual quality building on Jalan Pasar Besar Malang.
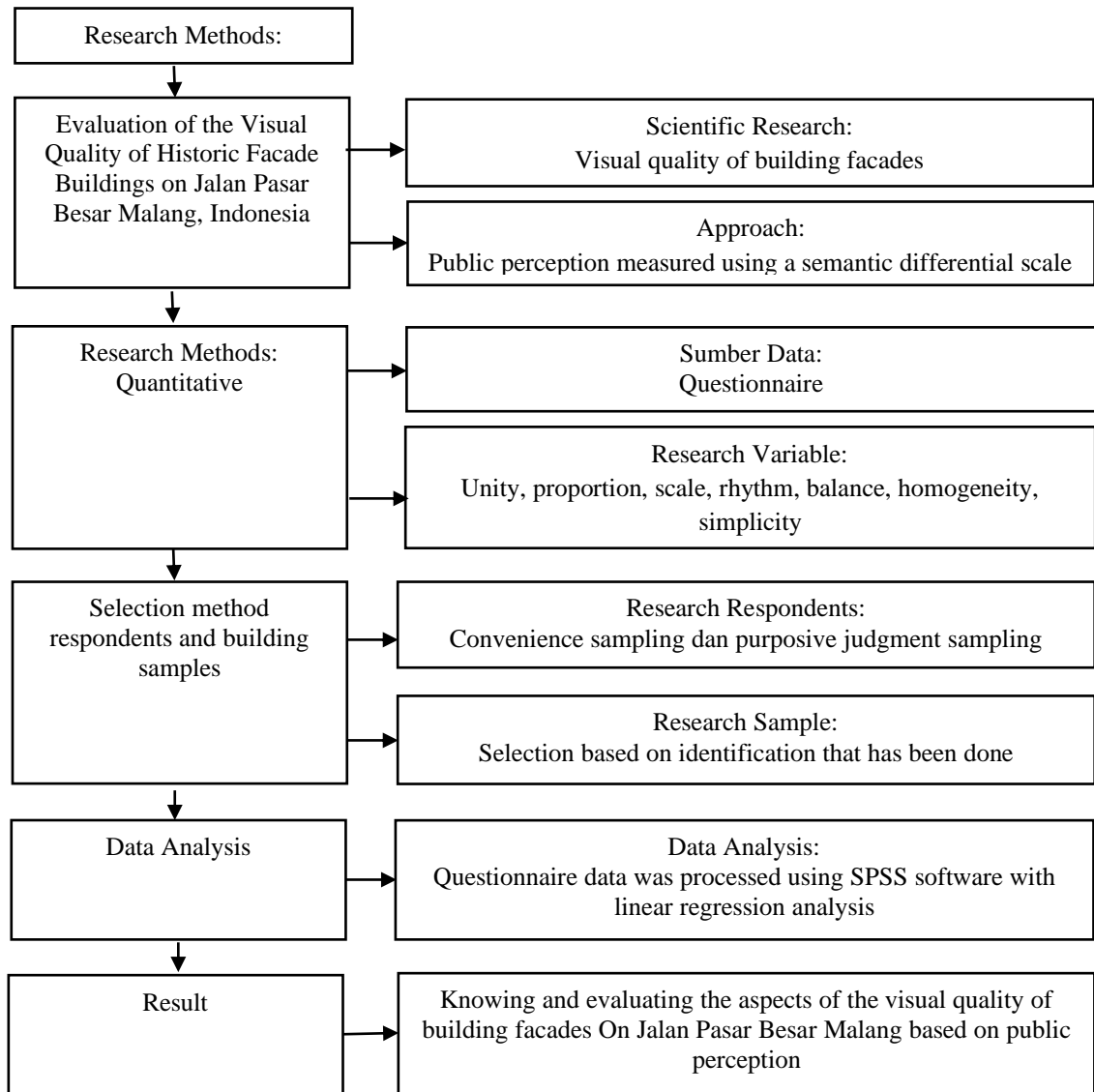
Research Method

Figure 1
Method diagram study

Study this use variable visual aesthetics with destination for knowing perception respondent to visual quality of building facades on Jalan Pasar Besar Malang. The variables in this study were obtained from the results of a literature review that came from theories as well as from previous studies related to the research focus and have been adapted to the existing state of the research location. A number of theory put forward by (Moughtin , 1999), (Moughtin , 1992) and (Moughtin , 1995) in journal

study (Saputra, 2016) , (Santosa, Martiningrum, Giriwati, & Astrini, 2016)and the journal study (Mandaka & Pandanaran, 2015).

Table 1
Variables And Semantic Scale Used In This Study.

No	Variable	Semantic Scale	Citation
1	*unity*	*chaotic-orderly*	(Ernawati & Moore, 2014) (Santosa et al., 2016)
2	*proportion*	*disproportionate-proportional*	(Santosa et al., 2016) (Santosa, Suryasari, et al., 2015) (Santosa & Fauziah, 2017)
3	*scale*	*unscalatic-scalatic*	(Nurgandarum and Anjani, 2020) (Saputra, 2016) (Uzunoglu, 2012) (Wijaya et al., 2019)
4	*rhythm*	*monotone-dynamic*	(Santosa et al., 2016) (Santosa et al., 2015) (Perovic and Folic, 2012) (Hogg, 1969) (Ural and Yilmazer, 2010) (Santosa and Fauziah, 2017)
5	*balance*	*unbalanced-balance*	(Santosa et al., 2016) (Santosa et al., 2015) (Santosa and Fauziah, 2017)
6	*homogeneity*	*homogeneous-heterogeneous*	(Fang et al., 2015)
7	*simplicity*	*complicated-simple*	(Fang et al., 2015) (Santosa et al., 2015) (Santosa et al., 2016) (Azis et al., 2019a)

Draft measurement facade visual quality building on Jalan Pasar Besar Malang using method measurement *semantic differential scale* that uses 7 categories appraisal , as example application variable cohesiveness that uses scale semantics " no " balanced " has " the value of 1 and its inverse " balanced " has value 7 and value 4 set as point neutral (Ernawati and Moore 2014) .

In architectural theory based on empirical studies, it is stated that people usually like an organized area and don't like a chaotic and messy area (Rapoport, 1993). An area with an organized state or not will increase people's preferences (Nasar, 1998). The community may not be disturbed by the chaos that exists in the appearance of the facade or the area as a whole in an area that has historical value, because people's perceptions differ according to their respective community backgrounds (Hershberger, 1972). Based on several quotes from previous research, it is explained that a semantic scale that has a value of 1-3 on the continuum table does not mean it has a negative indicator, as well as a semantic scale that has a value of 5-7 on the continuum table does not mean it has a positive indicator.

The sample of respondents was selected in two ways, namely by convenience sampling and purposive judgment sampling.
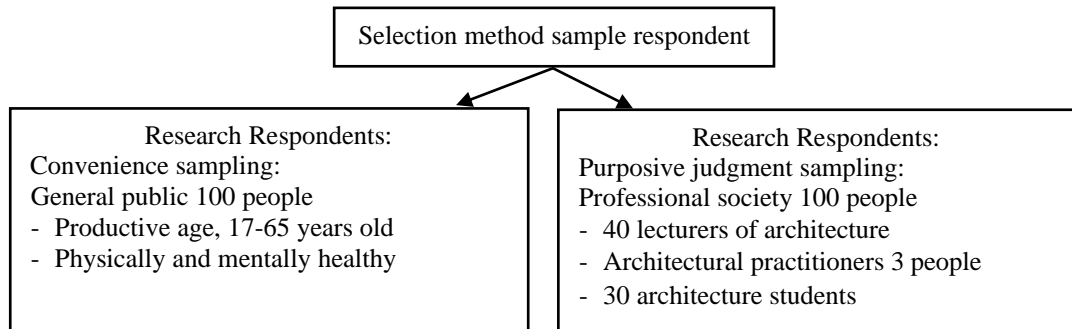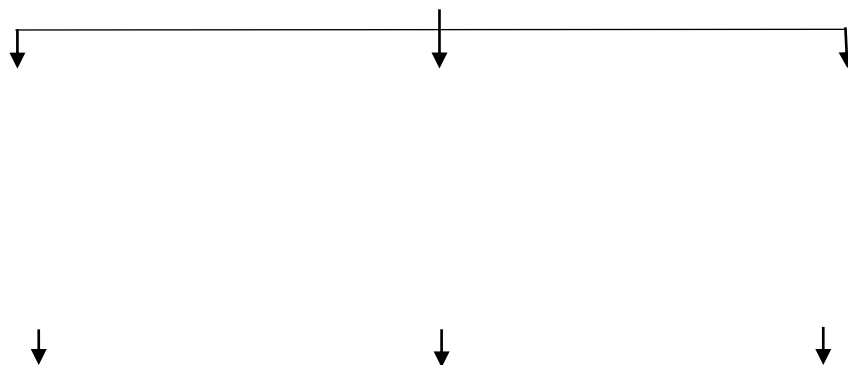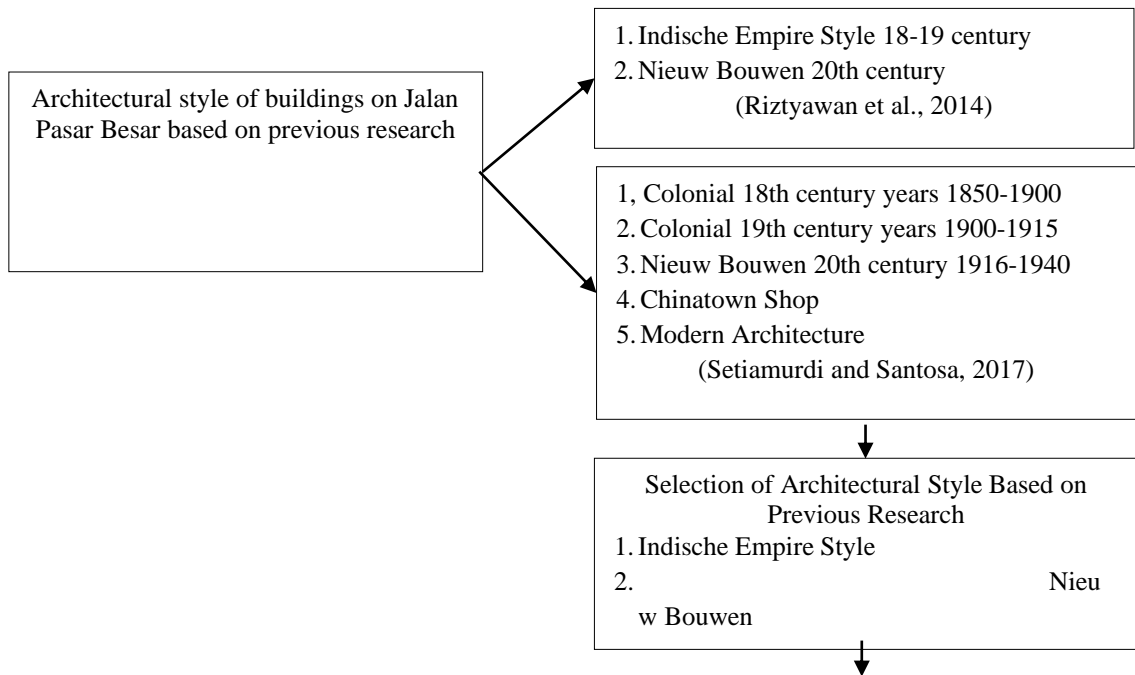
Selection method sample respondent

Research Respondents:
Convenience sampling:
General public 100 people
- Productive age, 17-65 years old
- Physically and mentally healthy

Research Respondents:
Purposive judgment sampling:
Professional society 100 people
- 40 lecturers of architecture
- Architectural practitioners 3 people
- 30 architecture students

Figure 2
Selection Method Sample Respondents

Architectural style of buildings on Jalan Pasar Besar based on previous research

1. Indische Empire Style 18-19 century
2. Nieuw Bouwen 20th century
        (Riztyawan et al., 2014)

1, Colonial 18th century years 1850-1900
2. Colonial 19th century years 1900-1915
3. Nieuw Bouwen 20th century 1916-1940
4. Chinatown Shop
5. Modern Architecture
        (Setiamurdi and Santosa, 2017)

Selection of Architectural Style Based on Previous Research
1. Indische Empire Style
2.   Nieu
   w Bouwen

Eni Zuliana, Jenny Ernawati, Herry Santosa

Identification of Building Sample Selection Based on Previous Research
1. No signage or decorative additions to block the façade
2. The building is still original, unchanged from the original architectural style
3. The building is still actively functioning

Indische Empire Style	Nieuw Bouwen	Modern Architecture
Monumental, thick walls, high ceilings, marble floors, high pillars in Greek style, front and back verandas connected without walls (Tarore, 2016) symmetrical (Handinoto, 1994)	Flat roof, gevel horizontal, cube, white, gray, crea, (Riztyawan, 2014) simple impression, clean without ornaments, prioritize the function of space (Mulyadi, 2008)	Symmetrical, cube, simple without ornaments, more neutral or striking colors, modern materials ex: glass, acp (Brunner, 2013) (Setiamurdi, 2017)

Ika Shop Building

Alimar Hotel Building

Sari Makmur Shop Building

Sumber Jaya Shop Building

Sakinah Shop Building

Figure 3
Selection Method Sample Building

Population building identified in accordance with needs research, namely no no signage or addition decorative blocking facade, building still original no changed from style architecture the original and the last building still working active. From result identification concluded that sample building from study this are Ika Shops, Alimar Hotels, Sari Makmur Shops, Sumber Jaya Shops and Sakinah Shops.

Toko Ika   Hotel Alimar   Toko Sari Makmur   Toko Sumber Jaya   Toko Sakinah

Figure 4
Building samples study

Result and Discussion

Based on method that has been explained in the discussion before , then conducted analysis linear regression for evaluate facade visual quality building on Jalan Pasar Besar Malang.

Table 2

Model Summary

Model	R	R Square	Adjusted R Square	Std. The error of the Estimate	Durbin-Watson
1	.824 [a]	.679	.651	.7555	2.171

a. Predictors: (Constant), Unity Ika Shop Building, Rhythm Ika Shop Building, Scale Ika Shop Building, Balance Ika Shop Building, Unity Ika Shop Building, Homogeneity Ika Shop Building, Proportion Ika Shop Building

b. Dependent Variable: Visual Quality of Faade Ika Shop Building

The model summary table explains big score correlation or relationship (R) that is of 0.824 and explained big percentage influence variable free (predictors) of variable dependent variable called coefficient determination (R2) of 0.679, which explains that variable free (predictors) of variable dependent variable is by 67.9%, while the rest influenced by variable another .

Table 3

ANOVA [a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	94,331	7	13,476	23,611	.000 [b]
	Residual	44,518	78	.571		
	Total	138,849	85			

a. Dependent Variable: Visual Quality of Faade Ika Shop Building

b. Predictors: (Constant), Unity Ika Shop Building, Rhythm Ika Shop Building, Scale Ika Shop Building, Balance Ika Shop Building, Unity Ika Shop Building, Homogeneity Ika Shop Building, Proportion Ika Shop Building

ANOVA table is used for determine level significance or linearity from analysis regression . Criteria could determined based on F test or value test significance (Sig). If the value of sig <0.05 then the regression model is linear and vice versa . In exposure table on sig value is 0.00 which means have value <0.05, then analysis The regression carried out on Building 1 Ika Shop meets criteria linearity.

Table 4
Coefficients ᵃ

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	-.180	.465		-.388	.699		
Unity Ika Shop Building,	.213	.087	.211	2,440	.017	.550	1.818
Proportion Ika Shop Building	.283	.082	.307	3.459	.001	.522	1,916
Scale Ika Shop Building	.260	.092	.242	2.825	.006	.560	1,785
Rhythm Ika Shop Building,	.192	.068	.230	2.836	.006	.626	1,597
Balance Ika Shop Building	.095	.076	.103	1.251	.215	.610	1,638
Homogeneity Ika Shop Building	.098	.089	.096	1.107	.272	.546	1,833
Simplicity Ika Shop Building	-.095	.070	-.110	-1,348	.182	.612	1,634

a. Dependent Variable: Visual Quality of Faade Ika Shop Building

In the Coefficients table, column B is named coefficient B which means is change in the mean variable Y (predictors) for every change variable X (variable bound) of one unit. Change this is increase when B is marked positive and decreasing when B is marked negative. After knowing table coefficient, necessary conducted there is a normality test with destination for test in analysis regression carried out, variable bully or residuals have normal distribution. For test normality used Normal PP Plot chart.

Normal P-P Plot of Regression Standardized Residual
Dependent Variable: Kualitas Visual Fasad Bangunan 1

=
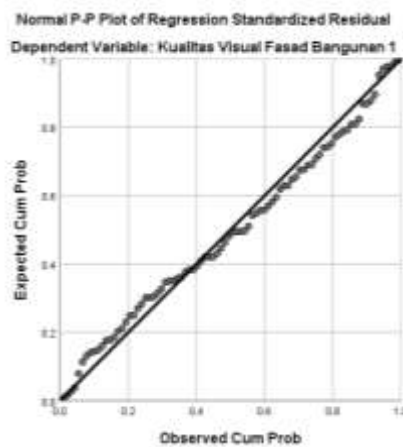
residual normality test using Normal graph P=P Plot obtained plot points coincide with a diagonal line so that the residual follows normal distribution and assumptions normality fulfilled.

Next test necessary conducted is a heteroscedasticity test that aims to test analysis regression occur variance inequality of the residual one observation to another observation. For test assumption heteroscedasticity used scatterplot graph between regression standardized predicted value (ZPRED) with regression studentized residual (SRESID) and the glejser test.

Heteroscedasticity test results use ZPRED and SRESID scatter plot graphs are known scatter plot points by random above and below Y axis and not shape pattern certain so that assumption heteroscedasticity fulfilled.

Heteroscedasticity test results use ZPRED and SRESID scatter plot graphs are known scatter plot points by random above and below Y axis and not shape pattern certain so that assumption heteroscedasticity fulfilled.

Figure 5
Heteroscedasticity test using scatter plot graph ZPRED and SRESID linear regression analysis of Ika Shop Building

Heteroscedasticity test results use ZPRED and SRESID scatter plot graphs are known scatter plot points by random above and below Y axis and not shape pattern certain so that assumption heteroscedasticity fulfilled .
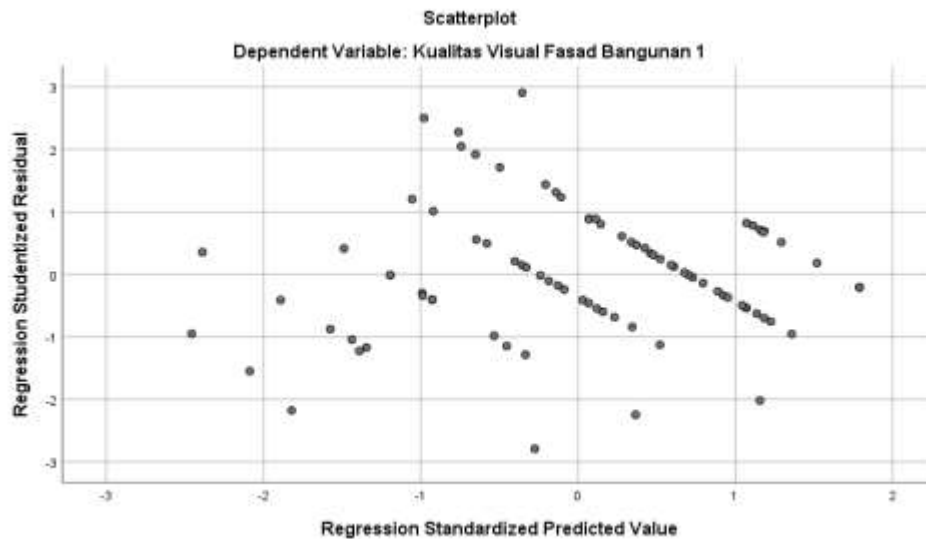
Result of analysis regression on Toko Ika summarized in table below _ this :

Table 5
The results of the regression analysis on Ika Shop Building

No	Predictors (Constant)	Coefficient	t-hit	Sig. t	Note.
1	constant	-0.180	-0.388	0.699	Note
2	Unity	0.213	2,440	0.017	Significant
3	Proportion	0.283	3.459	0.001	Significant
4	Scale	0.260	2.825	0.006	Significant
5	Rhythm	0.192	2.836	0.006	Significant
6	Balance	0.095	1.251	0.215	Note
7	Homogeneity	0.098	1.107	0.272	Note
8	Simplicity	-0.095	-1,348	0.182	Note
	F	23,611			
	Sig. F	0.000			
	R-Square	0.679			
	Adjusted R-Square	0.651			

Test influence Partial variable the visual quality of the faade comprising from unity, proportion, scale, rhythm, balance, homogeneity, simplicity facade visual quality whole obtained existence influence positive significant with score significance (sig-t) less from 0.05 (sig-t < 0.05) that is integration (*unity)*, proportion (*proportion*), scale (*scale)*, rhythm *(rhythm)* . These results indicate that *unity*, proportion , scale , rhythm will have *a* significant effect on the better the visual quality of the facade . whole Building 1 Ika Shop. Test influence simultaneous obtained score significance of 0.000 (sig-F < 0.05) which indicates that there is influence significant by simultaneous Among unity , proportion , scale , rhythm , balance , homogeneity, simplicity facade visual quality whole . Coefficient value determination (R ^{2}) of 0.679 indicates that facade visual quality whole could explained by 67.9 percent by unity, proportion, scale, rhythm, balance, homogeneity, simplicity *and* the rest of the effects are explained by other factors.

Series stages analysis regression consisting of from model summary, ANOVA, coefficients, normality test and the last one The heteroscedasticity test was also carried out on the samples of Alimar Hotels, Sari Makmur Shops, Sumber Jaya Shops, Sakinah Shops.

Result of analysis regression on Hotel Alimar summarized in table below this :

Table 6
The results of the regression analysis on Hotel Alimar

No	Predictors (Constant)	Coefficient	t-hit	Sig. t	Note.
1	constant	-0.180	-0.388	0.699	Note
2	Unity	0.213	2,440	0.017	Significant
3	Proportion	0.283	3.459	0.001	Significant
4	Scale	0.260	2.825	0.006	Significant
5	Rhythm	0.192	2.836	0.006	Significant
6	balance	0.095	1.251	0.215	Note
7	Homogeneity	0.098	1.107	0.272	Note
8	Simplicity	-0.095	-1,348	0.182	Note
	F	23,611			
	Sig. F	0.000			
	R-Square	0.679			
	Adjusted R-Square	0.651			

Result of analysis the regression on Toko Sari Makmur is summarized in table below this :

Table 7
The Results Of The Regression Analysis On Sari Makmur Shop Building

No	Variable free	Coefficient	t-hit	Sig. t	Note.
1	constant	0.133	0.204	0.839	Note
2	Unity	0.213	1,897	0.062	Note
3	Proportion	0.032	0.249	0.804	Note
4	Scale	0.071	0.553	0.582	Note
5	Rhythm	0.367	5.171	0.000	Significant
6	balance	0.208	1,674	0.098	Note
7	Homogeneity	0.086	0.664	0.509	Note
8	Simplicity	-0.014	-0.152	0.880	Note
	F	14,291			
	Sig. F	0.000			
	R-Square	0.562			
	Adjusted R-Square	0.523			

Result of analysis regression on Sumber Jaya Store summarized in table below this :

Table 8
The Results Of The Regression Analysis On Sumber Jaya Shop Building

No	Variable free	Coefficient	t-hit	Sig. t	Note.
1	constant	0.461	0.807	0.422	Note
2	Unity	0.270	2,065	0.042	Significant
3	Proportion	0.075	0.634	0.528	Note
4	Scale	0.057	0.462	0.645	Note
5	Rhythm	0.193	2,339	0.022	Significant
6	balance	0.051	0.578	0.565	Note
7	Homogeneity	0.313	3.618	0.001	Significant
8	Simplicity	-0.048	-0.468	0.641	Note
	F	15,140			
	Sig. F	0.000			
	R-Square	0.580			
	Adjusted R-Square	0.543			

Result of analysis regression on Toko Sakinah summarized in table below this :

Eni Zuliana, Jenny Ernawati, Herry Santosa

Table 9
The results of the regression analysis on Sumber Jaya Shop Building

No	Variable free	Coefficient	t-hit	Sig. t	Note.
1	constant	-0.236	-0.424	0.673	Note
2	Unity	0.444	4047	0.000	Significant
3	Proportion	0.051	0.442	0.660	Note
4	Scale	0.208	2.033	0.045	Significant
5	Rhythm	0.227	2,742	0.008	Significant
6	balance	0.199	2.206	0.030	Significant
7	Homogeneity	-0.109	-1.104	0.273	Note
8	Simplicity	0.015	0.171	0.865	Note
	F	19,748			
	Sig. F	0.000			
	R-Square	0.639			
	Adjusted R-Square	0.607			

Influential Variables significant to facade visual quality the building on Jalan Pasar Besar Malang at Toko Ika is coherence, proportion, scale, rhythm, Hotel Alimar is rhythm and homogeneity, Toko Sari Makmur is rhythm, Sumber Jaya Store is cohesiveness, rhythm and homogeneity, Toko Sakinah is coherence, scale, rhythm and balance.

Discussion

Analysis result linear regression every sample building conducted tabulated and stated that influential variable significant to facade visual quality The building on Jalan Pasar Besar Malang is rhythm, coherence, scale, homogeneity, proportion and balance.

Rhythm on the facade building on Jalan Pasar Besar Malang is obtained from existence loop form from aperture door nor window. Majority aperture door nor window tend shaped vertical. The integration that is formed by continuity, similarity and repetition is interpreted by the facade of the building on Jalan Pasar Besar Malang with the formation of door and window openings. Door openings tend to be rectangular in shape like the door in general, besides that there is a harmonica door which also has a vertical line motif. Integration from the point of view of facade color, namely the color contrast that occurs on the facade of Building 5 Toko Sakinah . The scale is tool measure that compares size between element facade building to size man (Nurgandarum and Anjani, 2020) (Saputra, 2016) (Uzunoglu, 2012) (Wijaya et al., 2019) . The scale that has a significant effect on the building facade on Jalan Pasar Besar Malang is the scale of the monumental building. The building in this study that interprets the scale variable is a building that has 3 floors with a fairly wide building width, so that the building seems monumental, the buildings are Building 1 Ika Shop and Building 5

Sakinah Store. Homogeneity is the uniformity created by the existence element facade buildings in one area of the building's facade as a whole (Perovic and Folic, 2012) (Santosa et al., 2015) (Santosa et al., 2016) , The uniformity of the shape of the window door opening gives the impression of homogeneity. In Building 2 Hotel Alimar the door and window openings are rectangular and above the openings there are curved vents. Homogeneity in Building 4 Toko Sumber Jaya is applied to the uniformity of shapes that tend to be vertical, namely rectangular in door and window openings. Proportion is the suitability of the height and width of the building facade elements to the size of the building area as a whole (Wijaya et al., 2019) The proportion is obtained from the building area, namely the suitability of the height and width of the building which is interpreted in Building 1 Toko Ika. Balance on the facade of the building on Jalan Pasar Besar Malang is on the facade of Building 5 Toko Sakinah, where the imaginary line that is formed both vertically and horizontally on the facade of the building is an asymmetric imaginary line.

Conclusiom

Aspect shaper visual quality of the facade building on Jalan Pasar Besar Malang based on perception Public is balance and cohesion . Aspect shaper facade visual quality The building on Jalan Pasar Besar Malang is rhythm, coherence, scale, homogeneity, proportion and balance. Conclusion from study this could noticed and observed as one effort for create facade visual quality building on Jalan Pasar Besar Malang with notice aspect shaper visual quality as perception Public that is balance, cohesiveness and attention aspect shaper facade visual quality influential building significant to facade visual quality building that is rhythm, coherence, scale, homogeneity, proportion and balance.

Eni Zuliana, Jenny Ernawati, Herry Santosa

BIBLIOGRAPHY

Azis, Baskoro, Santosa, Herry, & Ernawati, Jenny. (2019). Assessing Public Perception For Illumination Of Building In Kayutangan Street, Malang, Indonesia. *Dimensi (Journal Of Architecture And Built Environment)*, *46*(1), 11–22. Https://Doi.Org/10.9744/Dimensi.46.1.11-22

Ernawati, Jenny, & Moore, Gary T. (2014). *Tourists ' And Residents ' Impressions Of A Heritage Tourism Site : The Case Of*. (November 2014). Https://Doi.Org/10.26687/Archnet-Ijar.V8i3.383

Fang, Siyuan, Muramatsu, Keiichi, & Matsui, Tatsunori. (2015). Experimental Study Of Aesthetic Evaluation To Multi-Color Stimuli Using Semantic Differential Method. *Transactions Of Japan Society Of Kansei Engineering*, *14*(1), 37–47. Https://Doi.Org/10.5057/Jjske.14.37

Hogg, J. (1969). A Principal Components Analysis Of Semantic Differential Judgements Of Single Colors And Color Pairs. *The Journal Of General Psychology*, *80*(1 St Half), 129–140. Https://Doi.Org/10.1080/00221309.1969.9711279

Mandaka, Mutiawati, & Pandanaran, Universitas. (2015). *Estetika Visual Koridor Pada Bangunan-Bangunan Komersil*. (1).

Nurgandarum, D., & Anjani, C. F. (2020). Legibility Of Building Facades And Imageability Of Historical City Center, Case Study: Bukittinggi City Center. *Iop Conference Series: Earth And Environmental Science*, *452*(1). Https://Doi.Org/10.1088/1755-1315/452/1/012158

Perovic, Svetlana, & Folic, Nadja Kurtovic. (2012). Visual Perception Of Public Open Spaces In Niksic. *Procedia - Social And Behavioral Sciences*, *68*, 921–933. Https://Doi.Org/10.1016/J.Sbspro.2012.12.277

Riztyawan, Iwan, Antariksa, & Maulidi, Chairul. (2014). Karakteristik Kawasan Historis Koridor Jalan Pasar Besar Malang. *Arsitektur E-Journal*, *7*(2), 75–85.

Santosa, Herry, & Fauziah, Nur. (2017). Aesthetic Evaluation Of Restaurants Facade Through Public Preferences And Computational Aesthetic Approach. *Iptek Journal Of Proceedings Series*, *0*(3). Https://Doi.Org/10.12962/J23546026.Y2017i3.2434

Santosa, Herry, Martiningrum, Indyah, Giriwati, Novi Sunu Sri, & Astrini, Wulan. (2016). Penilaian Estetika Fasade Bangunan Pertokoan Melalui Pendekatan Environmental Aesthetics Dan Computational Aesthetics Di Kota Malang. *Temu Ilmiah Iplbi*, (1), 97–104.

Santosa, Herry, Suryasari, Noviani, Mustikawati, Triandriani, Eka, Desetri, Adani, Firosa, & Fauziah, Nur. (2015). Penilaian Estetika Fasade Bangunan Di Koridor Jalan. *Jurnal Ruas*, *13*(2), 77–88.

Santosa, Herry, Triandriani, Noviani Suryasari, Desetri, Mustikawati, & Nur, Eka

Firosa Adani. (2015). Integrasi Pendekatan Kualitatif Dan Kuantitatif Dalam Penilaian Estetika Fasade Bangunan Di Koridor Jalan Kayutangan, Malang. *Ruas*, *13*(2), 77–88. Https://Doi.Org/10.21776/Ub.Ruas.2015.013.02.9

Saputra, Muhammad Alfian R. (2016). *Visual Qualities Of Darmo Heritage Street Corridor In Surabaya, Indonesia Muhammad Alfian R. Saputra*. *4*(6), 341–346.

Setiamurdi, Retno Ulvi, & Santosa, Herry. (2017). Karakteristik Fasade Bangunan Kawasan Pasar Besar Kota Malang. *Jurnal Mahasiswa Jurusan Arsitektur Universitas Brawijaya*, *5*(4).

Ural, Sibel Ertez, & Yilmazer, Semiha. (2010). The Architectural Colour Design Process: An Evaluation Of Sequential Media Via Semantic Ratings. *Color Research And Application*, *35*(5), 343–351. Https://Doi.Org/10.1002/Col.20583

Uzunoglu, Semra Sema. (2012). Aesthetics And Architectural Education. *Procedia - Social And Behavioral Sciences*, *51*, 90–98. Https://Doi.Org/10.1016/J.Sbspro.2012.08.124

Wijaya, Budi Tri, Ernawati, Jenny, & Santosa, Herry. (2019). Persepsi Masyarakat Terhadap Estetika Visual Koridor Bersejarah - Studi Kasus: Jalan Panglima Sudirman Kota Batu. *Jamang (Jurnal Arsitektur, Manusia Dan Lingkungan)*, *1*(1), 29–33.