

The Factors That Causes Community Living at the Kapuas Riverside Settlement, Pontianak City

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Abstract: As a riverside community who live in Pontianak, they depend on their need for life on the Kapuas River and become the reason for the appearance of civilization. Some of the problems arising from settlement activity around the Kapuas River do not make the community want to move, but make them survive in the Kapas riverside settlement. Therefore, a study of the underlying reasons for the community around the Kapuas River is required to be attached to the settlement. This study aims to see the attachment of the community to the location of the residence is measured using place attachment calculation in two dimensions, which is place identity and place dependence. The second goal of this study is to find factors that cause community still livint at Kapuas riverside settlement using factor analysis. Place attachment is done by validity and reliability test then analyzed descriptive statistic. The result of the research shows that there is a “strong” place attachment attributed to 3 groups of community factors surviving in the Kapuas riverside settlement, Pontianak city, namely Jaminan Sosial-Budaya, Faktor Aksesibilitas, and Faktor Lingkungan-Shelter.

1 INTRODUCTION

One of the provincial capitals in Indonesia dubbed the river city is the City of Pontianak located in the province of West Kalimantan. Benefits of the existence of rivers for human life, namely as a provider of water and water containers to meet household needs, environmental sanitation, agriculture, industry, tourism, sports, defense, fisheries, electricity generation, transportation, and others. (PP 38/2011 concerning Rivers) While the benefits of the existence of rivers for natural life are as a water quality restorer, a distributor of floods, and a major generator of flora and fauna ecosystems. Settlements on the edge of the water emerged at the beginning of Pontianak City civilization as evidence of dependence on the Kapuas River. (Khaliesh, et. Al, 2012)

Some problems that arise due to settlement activities around the Kapuas River, including: (1) high building density; (2) buildings not habitable; (3) rain for a long time also often causes puddles; (4) road conditions are not feasible; (5) drinking water problems; and (6) poor waste and sanitation problems. Behind this, the Pontianak City community

chose to remain in the Kapuas River waterfront settlement. Therefore, a study is needed regarding the reasons underlying the communities around the Kapuas River to have an attachment and remain in the settlement. Still living in a location can be caused by several things, namely social, economic, cultural, physical and institutional factors. (Himbawan, 2010) Therefore, research was conducted on the level of community engagement with the location of their place of residence, as well as the factors of community survival to live in the waterfront settlements of the Kapuas River, Pontianak City.

Research "The Factors That Causes Community Living at The Kapuas Riverside Settlement, Pontianak City" was carried out in 3 priority areas for handling slum areas based on Pontianak City RKP-KP 2016. The 3 areas in question are Tambelan Sampit-Banjar Serasan, In Bugis-Tanjung Downstream, and Central Siantan 1. These areas are further divided into 6 villages where each region consists of 2 villages.

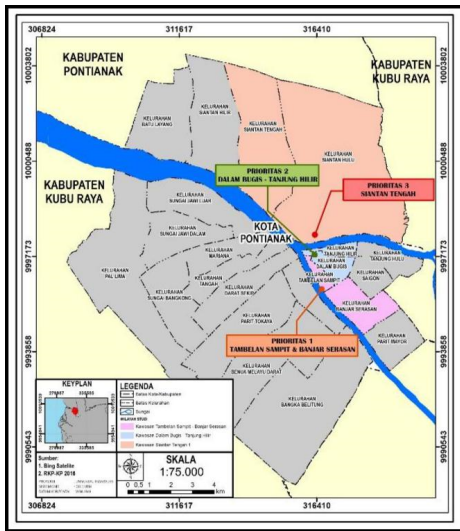


Fig 1. Research study map

Figure 1. is a map of the location of the study area. There are 6 villages that have river waterfront settlements and at the same time become priority areas for slum handling. Following Table 1. shows the distribution of regions and villages included in each research area.

Table 1. Research Area

No.	Name of Area	Kelurahan
1.	Tambelan Sampit-Banjar Serasan Area	Tambelan
		Sampit
		Banjar Serasan
2.	Dalam Bugis-Tanjung Hilir Area	Dalam Bugis
		Tanjung Hilir
		Siantan Tengah
3.	Siantan Tengah 1 Area	Siantan Hulu

Table 1. describes the division of kelurahan into each region. The Tambelan Sampit-Banjar Serasan area consists of Tambelan Sampit and Banjar Serasan Villages. The area in Bugis-Tanjung Hilir consists of Kelurahan Dalam Bugis and Tanjung Hilir. The Central Siantan Area 1 consists of the Districts of Siantan Tengah and Siantan Hulu

2 METHOD

2.1 Population and Sample

The study used an analysis unit in the form of priority areas for slum handling. Determination of samples using probability sampling with random sampling technique. The study used a 10: 1 comparative analysis between the number of respondents with factor analysis and 200 respondents. The sample division is done by looking at the percentage of each slum mission area which can be seen in Table 2.

Table 2. Distribution of the number of respondents

No.	Name of Areas	Count of Population	%	Distribution of Respondents
1.	Tambelan Sampit-Banjar Serasan Area	3.815	30,23	60
2.	Dalam Bugis-Tanjung Hilir Area	5.021	39,79	80
3.	Siantan Tengah 1 Area	3.782	29,97	60
Total		12.618	100	200

2.2 Research Variables

The study used several analytical techniques in the form of Place Attachment Analysis to measure community boundaries with the study location, Factor Analysis to reduce variables that could not be used in the study location and classify variables into groups of factors. Table 3. shows the place attachment variables and the factors of the survival of the community to live in the riverside settlements used in the study.

Table 3. Research Variables

Purpose	Variabel
Knowing the relationship between residents and the location of their settlements above and on the banks of the Kapuas River, Pontianak City.	Place Attachment Place Identity Place Dependence
Determine the factors of the survival of the	Close to the market Close to Educational

Purpose	Variabel
community to live in the waterfront settlements of the Kapuas River, Pontianak City.	Facilities
	Close to Health Facilities
	Close to Public Service Facilities
	Close to the Open Space
	Close to places of worship
	Relations with the Community
	Culture descends
	Close to family Customs
	Organization
	The Appeal of the Government
	Condition / Construction of Houses
	Close to outdoors
	Security Conditions
	Ease of Access to Clean Water
	Ease in disposing of waste
	Ease in Waste Disposal
	Fire Extinguisher
Economic Conditions (Capital)	

2.3 Place Attachment

Place attachment analysis is carried out in two phases, namely validity and reliability testing conducted before the field survey to test the questions, then descriptive statistical analysis to measure the place attachment level.

2.4 Validity and Reliability Test

Validity can indicate the extent to which the research measuring instrument is able to identify the object of research in accordance with the goal (valid measure if it successfully measures the phenomenon). Reliability is used to determine the extent to which the measurement results remain consistent, if the measurement is done twice or more with the same symptoms and measuring instruments. The validity and reliability test survey uses 30 household respondents. Research is said to be reliable if it has instrument criteria with coefficient (r) > 0.6. A research instrument is said to be valid, if:

1. If the product moment correlation coefficient exceeds 0.3
2. If the product moment correlation coefficient > r-table (α ; n-2), n = number of samples
3. Sig value $\leq \alpha$

2.5 Statistic Descriptive

According to Guilani (2003), Halpenny (2006) and Manzo (2003), there are 3 (three) components discussed in place attachments namely place identity, place dependence, and place affect. However, place attachment research was identified using 2 (two) components, including place identity and place dependence following previous research from Doss (2012), Ujang et al (2015), Williams and Roggenbuck (1989), William and Vaske (2003) and Eder and Arnberger (2012).

Questionnaires that have been tested are used to measure place attachments with 200 KK respondents. Place identity is a self dimension that determines an individual's identity that is related to a place physically. (Prohansky et al, 1983) Place dependence is the level of importance of someone to use the function of a place. (Stokols & Shumaker, 1981) The answer scale used is the Likert scale. Table 4. Describes the parameters specified in place attachment.

Table 4. Parameter of *Place Attachment*

Variable	Parameter
Place Identity	Residence is part of the occupant The extent to which residents know where they live
	Strong attachment between the occupant and his place of residence
	Whether or not there is a desire to move
Place Dependence	Meaning of place of residence for residents
	The best place to live for residents
	Compare current residence with other places
	Fun when living
	Interest and comfort when conducting activities in the residence
	The desire to live elsewhere
	Comfort / satisfaction while living in the study area

The results of the place attachment value of each respondent are processed by descriptive statistics, namely by calculating the scale of the answer, criterion score, rating scale value, frequency of the answer scale, and determine the value of the results. The answer scale used is the Likert scale. The final score is used to see the answer on the rating scale based on the criteria score. The following is Table 5. which shows the criterion score in the study.

Table 5: Skor Kriterion

No.	Formula	Rating Scale	%	Scale
1.	1X200	1-200	1-20	Very Weak
2.	2X200	201-400	21-40	Weak
3.	3X200	401-600	41-60	Neutral
4.	4X200	601-800	61-80	Strong
5.	5X200	801-1000	81-100	Very Strong

2.6 Factor Analysis

Research uses the EFA technique because it aims to form factors from several existing variables. The steps to perform Factor Analysis are as follows.

1. Convert ordinal data to intervals
2. Feasibility analysis of factor analysis (KMO and Bartlett's Test)
3. Variable reduction (anti-image matrices)
4. Communalities
5. Factors formed
6. Factor group

The questionnaire used in the study uses a Likert scale and produces ordinal data. Before a factor analysis is carried out, data must be converted from ordinal scale to interval scale. Furthermore, data from factor analysis instruments were converted to interval scale using the MSI (Method of Internal Success) method so that it could be analyzed using further analysis. (Sarwono, 2016)

3 DISCUSSION

3.1 Description of Study Area

Each sub-district in Pontianak City, 55 rivers and ditches are passed by as a place to fulfill their needs. Almost all areas of Pontianak City are within a radius of 15 km from the river mouth located in the lowlands. The priority areas that became the study area consisted of Tambelan Sampit-Banjar Serasan Region, In Bugis-Tanjung Hilir, and Central Siantan 1 (Figure 1 and Table 1) which had part of the Kapuas River waterfront settlement. The height of Pontianak City ranges from 0.10 to 1.50 masl (meters above sea level) with a flat slope, which is less than 2% which has a distance of about 1-2 meters above the water surface.

3.2 Place Attachment

3.2.1 Validity and Reliability Test

Table R shows that respondents with N values of 30 have an R value of 0.349. The calculated R value shows the results of 0.859-0.991 which is greater than 0.349 so that all instruments or questions place attachment both place identity and place dependence for interviews can be continued for the next process because it has been declared valid.

The reliability test looks at the cronbach alpha value that is conceptualized in an assessment. The criteria for the instrument used must have a coefficient (r) or a cronbach alpha value greater than 0.6. The results of a clear reliability test in measuring place attachment instruments in this study resulted in a reliability statistics value of 0.974. This value means that the overall question instrument has been reliable, stated to be very stable and consistent so that it is then compiled in the form of a questionnaire.

3.2.2 Place Attachment Scale

The survey has been conducted using a Likert scale, identifying the attachment of the waterfront settlement community to its residence in the Kapuas River, Pontianak City. The likert scale is determined based on the average value of place attachment results. Determination of the final results is seen using the frequency of the appearance of each response scale from respondents (KK units).

Calculation of place attachment scale of the community of the Kapuas River waterfront settlements, Pontianak City in Table 6. shows the percentage of 71.55% included in the 4 or "Strong" scale interval. Table 6. is an explanation of the results of the scale on each place attachment question.

Table 6: Result of Place Attachment Scale

No.	Variabel	Hasil Skala (C _i)										Total (ΣC)	% (F)	Skala
		1(s ₁)		2(s ₂)		3(s ₃)		4(s ₄)		5(s ₅)				
		f	C ₁	f	C ₂	f	C ₃	f	C ₄	f	C ₅			
Place Identity														
1.	Residence is part of the occupant	0	0	25	50	55	165	90	360	30	150	725	72,5	K
2.	The extent to which residents know where they live	0	0	8	16	41	123	90	360	61	305	804	80,4	SK
3.	Strong attachment between the occupant and his place of residence	2	2	33	66	40	120	72	288	53	265	741	74,1	K
4.	Whether or not there is a desire to move	9	9	47	94	44	132	64	256	36	180	671	67,1	K
5.	Meaning of place of residence for residents	1	1	23	46	49	147	78	312	49	245	751	75,1	K
Place Dependence														
6.	The best place to live for residents	8	8	43	86	59	177	67	268	23	115	654	65,9	K
7.	Compare current residence with other places	3	3	37	74	46	138	86	344	28	140	699	65,4	K
8.	Fun when living	2	2	28	56	54	162	86	344	30	150	714	69,9	K
9.	Interest and comfort when conducting activities in the residence	11	11	57	114	38	114	48	192	46	230	661	71,4	K
10.	The desire to live elsewhere	2	2	2	4	57	171	82	328	57	285	790	66,1	K
11.	Comfort / satisfaction while living in the study area	0	0	8	16	41	123	90	360	61	305	804	79,0	K
Total											7.869			
Mean											715,4	71,5	K (kuat)	

The value of the Kapuas River waterfront settlement community, Pontianak City:

1. Having a positive emotional bond with the environment in which he lives
2. Feeling depressed if separated from the environment in which they live.
3. Feeling emotionally benefited from the environment in which he lives
4. Know the environment in which he lives properly so that he can interact and behave well with the environment in which he lives.
5. Having emotional, cognitive, and functional ties to the environment in which he lives.

The difference in place attachment values in each region does not show a large value. Place attachments in the Tambelan Sampit-Banjar Serasan Area are 72,6%, the Bugis-Tanjung Hilir Area is 70,5%, and the central Siantan Region 1 is 71,8%, all of which are in the strong category.

The result of place attachment that has a strong value proves that the community does not want to move and stay at the waterfront settlement of the

Kapuas River, Pontianak City. Therefore, factor analysis can be continued to underlie the reason for the survival of the community to remain in the waterfront settlements of the Kapuas River, Pontianak City. The difference in place attachment assessment for each location can be seen in Figure 2.

The calculation of place attachment scale answers to the waterfront settlement community, Kapuas River Tambelan Region Sampit-Banjar Serasan, In Bugis-Tanjung Hilir, and Central Siantan 1 shows the percentage of 71.55%, 70.5%, and 71.8% that go into area interval scale 4 or "Strong". This causes the Kapuas River watershed community in each region to have a self-identity that can be described in their environment and their daily activities depend on the "strong" environment and show that the community is considered to feel that the waterfront settlements of the Kapuas River, Pontianak City are part of themselves. The result of place attachment that has strong value proves that the community does not want to move and stays at the waterfront settlement of the Kapuas River, Pontianak City. Therefore, factor analysis can be continued to underlie the reason for

the survival of the community to remain in the waterfront settlements of the Kapuas River, Pontianak City.



Figure 2. The result of the place attachment (place identity and place dependence)

3.3 The Causative Factor of Community Living at the Kapuas Riverside Settlement, Pontianak City

Variables that have been determined by several sources, then submitted to 200 respondents who live in the waterfront settlements of the Kapuas River, Pontianak City. Data obtained from respondents in the form of an ordinal scale need to be converted into the form of interval scale using the MSI method.

3.3.1 KMO and Bartlett's Test

The Bartlett's sphericity test is used to show the correlation between variables as a whole. The KMO test shows the data adequacy requirements so that it can be used in factor analysis. The following is Figure 3. which is a cut of the results of KMO and Bartlett's Test acquisition analysis in the SPSS application.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.694
Bartlett's Test of Sphericity	Approx. Chi-Square	1.551E3
	df	171
	Sig.	.000

Bartlett's Test of Sphericity coefficient is 1.551E3 or equal to 12.664, with 171 degrees of freedom, and 0.000 significance so that the overall correlation between variables is significant at the 0.01 level and has met the requirements of factor analysis. The results of the Kaiser-Meyer-Olkin Measure of Sampling Adequacy test give a value of 0.694 which indicates that there has been a sample adequacy so that it meets the requirements for the factor analysis process and can be further analyzed.

3.3.2 MSA Value

The MSA value in the Anti-Image Correlation table in SPSS is used to determine which variables are reduced and variables that can be further analyzed.

Table 7. MSA Value

No.	Factors	MSA Value
1.	Close to the market	0,735
2.	Close to Educational Facilities	0,692
3.	Close to Health Facilities	0,753
4.	Close to Public Service Facilities	0,692
5.	Close to the Open Space	0,674
6.	Close to places of worship	0,623
7.	Relations with the Community	0,814
8.	Culture descends	0,733
9.	Close to family	0,746
10.	Customs	0,709
11.	The Appeal of the Government	0,547
12.	Condition / Construction of Houses	0,712
13.	Close to outdoors	0,596
14.	Security Conditions	0,609
15.	Ease of Access to Clean Water	0,691
16.	Ease in disposing of waste	0,627
17.	Ease in Waste Disposal	0,623
18.	Fire Extinguisher	0,614
19.	Economic Conditions	0,680

Table 7 explains that the value of MSA = 1, the variable can be predicted without error by other variables; if the MSA value is > 0.5, the variables can still be predicted and analyzed further; whereas if the MSA value is < 0.5, the variable cannot be predicted further and cannot be further analyzed or excluded from other variables.

Table 8. Factors Groups

Factor Groups	Variable	Component Matriks Value
1 st Factor Security Social – Culture	Culture Descends (X8)	0,919
	Relations with the Community (X7)	0,868
	Close to family (X9)	0,803
	Economic Conditions (Modal) (X19)	0,761
	Customs (X10)	0,540
2 nd Factor Accessibility	Close to places of worship (X6)	0,835
	Close to Public Service Facilities (X4)	0,842
	Close to the Open Space (X5)	0,790
	Close to Health Facilities (X3)	0,693
3 rd Factor Environment dan shelter	Close to Educational Facilities (X2)	0,398
	Ease in disposing of waste (X16)	0,804
	Ease in disposing of waste (X17)	0,778
	Condition / Construction of Houses (X12)	0,476
	Fire Extinguisher (X18)	0,569
	Security Conditions (X15)	0,524
	Close to the market (X1)	0,456
	The Appeal of the Government (X12)	0,325
Close to Work Place (X13)	0,342	
	Ease of Access to Clean Water (14)	0,300

There are variables that must be reduced and cannot be used for further analysis, namely influential organizations in the community. This happens because the acquisition of the MSA value from the organizational variable does not reach a value of 0.5, which is only 0.344. Therefore, organizational variables are excluded from the next calculation and there are 19 variables that can be continued for the next process.

3.3.3 Factor Groups

The number of factor groups is set at 3 factors. The Component Matrix table provides information on the number of factors that are formed and which variables enter the first, second, and third factors. Two rotation steps were taken to determine the group of factors, namely the varimax method and quartimax method. Giving names to all three factors is based on subjective judgments of the characteristics of each group member of each factor. The results of 19 variables that have been reduced and grouped into 3 factors can be seen in Table 8. as follows.

4 CONCLUSION

Conclusions from the research Factors That Caused the Community to Survive in the Settlement of the River Basin of Kapuas, Pontianak City includes the results of the attachment between the community and their place of residence that is "4" or has a strong attachment to their place of residence. The community's attachment to the place of residence that has a strong value indicates that the community is at home in the study location. Factors of community survival to live in river water settlements are the Socio-Cultural Assurance Factors, Accessibility Factors, and Environmental Factors - Shelter.

REFERENCES

- DosS. Hailey B. *The Examination of Place Attachment In Camp Staff and Its Association With Connectedness to Nature Over The Course Of A Seven Day Camp*. Salem, Virginia. Bachelor of Arts in Art. Roanoke College, 2012.
- EdeR, Renate. Arnberger, Arne. *The Influence of Place Attachment and Experience Use History on Perceived Depreciative Visitor Behavior and Crowding in an*

- Urban National Park*. Vienna. University of Natural Resources and Life Sciences. 2012.
- Halpenny, Elizabeth A. *Pro-environmental behaviours and park visitor: The effect of place attachment*. Edmonton, Canada. University of Alberta. 2006.
- Himbawan, Gigih *Penyebab Tetap Bermukimnya Masyarakat di Kawasan Rawan Banjir Kelurahan Tanjung Agung Kota Bengkulu*. Semarang. Universitas Diponegoro. 2010.
- Khaliesh, Hamdil. Widiastuti, Indah. Budi, Bambang Setia. *Karakteristik Permukiman Tepian Sungai Kampung Beting di Pontianak*. Malang. IPLBI, 2012.
- Manzo, Lynne C. *Beyond Home and Haven: Toward a Revisioning of Emotional Relationship with Places*. Washington D.C, Amerika Serikat. University of Washington. 2003.
- Peraturan Pemerintah Republik Indonesia Nomor 38 tahun 2011 tentang Sungai.
- Prohansky, Harold M. Fabian, Abbe K, Kaminoff, Robert. *Place Identity: Physical World Socialization of the Self*. New York, Amerika Serikat. University of New York. 1983
- Sarwono, Jonathan. Tt. Mengubah Data Original ke Data Interval dengan Metode Suksesif Interval (MSI). www.jonathansarwono.info. Diakses pada 21 Juni 2018.
- Stokols, Daniel. Shumaker, Salli Ann. *The Psychological Context of Residential Mobility and Well Being*. Irvine, California. University of California. 1981.
- Ujang, Norsidah. 2004. Sense of Well-Being Indicators Attachment to Public parks in Putrajaya, Malaysia. Istanbul, Turkey. ASEAN-Turkey ASLI (Annual Serial Landmark International) Conference of Quality of Life 2014.
- Williams, Daniel R. Roggenbuck, Joseph W. *Measuring Place Attachment: Some Preliminary Results*. San Antonio, Texas. NRPA Symposium on Leisure Research. 1989.
- William, Daniel R. Vaske, Jerry J. *The Measurement of Place Attachment: Validity and Generalizability of a Psychometric Approach*. Colorado. Rocky Mountain Research Station. 2000