Local community’s perception, attitude, and participation towards different level management of geopark: A comparison Geosite case study, between Muroto Cape and Rammang-rammang Geosite

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Abstract: Community’s participation is a principal success key of a geopark. Community’s participation has relation with development of geopark. Analysis of community’s participation is complicated, there are many variables that can influence it that might come from internal and external of community’s perception. In addition, some of the variables that influence community’s participation sometimes imaginary, that must be analyze deeply to find their effect and relation among other variables. Through this research, it expecting to analyze all of the variables in scope of geosite. Case study were used from two geosites at different level management (UNESCO Global Geopark/UGG and National Geopark). Thus, the conclusion from this study can be used as reference information for introspection between case studies, and also information to accelerate the development of geopark without regard the aspects of sustainability. This study used a case study model with quantitative-qualitative analysis through analysis of EFA, SEM, and MANOVA. This analysis equipped with questionnaire to collect data based on role observation carried out at the beginning of the study. The results of this study indicate that there are differences in the level of community participation that are not parallel with level of management status of the geopark itself. This is caused by various variables which include internal and eksternal variable of participation itself. Both case studies indicate weaknesses with each other that can complement each other. Therefore, final results of this study conclude that the importance of quality and quantity of social relations are evenly distributed in the management of geopark. As well as strengthening internal relations in a geopark, it is considered more important that external relations in the development of a geopark.

1. Introduction
In fact, many examples for worldwide research have shown that natural management will succeed only if participation of local community are involved in management [1] [2] [3] [4]. Therefore, investigating the factors that can influence participation is important because that is the key in solving geopark problems [5] [6].

There are various kinds that can influence participation of local people including the effectiveness of management, public trust, demographic characteristic, community awareness, etc. [7] [8]. But,
problems in analyzing community’s perceptions, attitudes, and participation that those variables cannot be connected to each other through analysis without using tools. Based on these challenges, the urgency of this research is to find out the factors that influence the community’s perception, attitudes, and participation in both of the case study. Furthermore, it will be analyzed relation between level of participation of community with level of management status for both of study case. In this study we will try to compare the management of two different geopark sites, namely the UGG (UNESCO Global Geopark) level for Muroto Geopark (by case study of Muroto Cape Geosite) and also the national geopark level for Maros-Pangkep Geopark (by case study of Rammang-rammang geosite). Both of this study case has a different management based on their geopark status.

In this study, there are some of term that used such as “local community” means people who live in or around the geosite, while “perception” is described as knowledge and awareness of the local community to interpretate conditions and problems, “attitudes” can be describe as local community’s choices in siding which can be support, neutral, and conflict depending on the situation and problem, and “participation” is describe as the ability and behavior of the local community towards the involves of an activity management, both directly and indirectly participating [9].

2. Materials and methods
A preliminary questionnaire survey of respondent opinions was conduct in the both of the study site. The questionnaire then revised, and the final version consisted of 17 questions regarding local community’s perception, three questions on attitude, and six questions on participation (Table 1). Further items on demographic characteristics, as well as free answers were also recorded. The answers to the first 26 items were ranked using a five-point Likert scale, where respondents assigned a score of 5 for strongly agree, 4 for agree, 3 for neutral, 2 for disagree, and 1 for strongly disagree.

| Code | Indicator | Variable in SEM |
|------|-----------|-----------------|
| Positive Perception | Variable Latent Exogenous (ξ) | Observed independent Variable (x) |
| N1 | Increase crime rate | |
| N2 | Increase traffic jam level | |
| N3 | Increase environmental pollution | |
| N4 | Increase environmental damage | |
| N5 | Increase economic losses to the community | |
| N6 | Increase conflict | |
| N7 | Increase other losses to the community | |
| N8 | Increase maintenance activities | |
| A1 | Support for the development of geosite | |
| A2 | Level of satisfaction with geosite | |
| A3 | Benefit of geosite | |
| S1 | Protection of the local environment | |
| S2 | Distribute geosite profits | |
| S3 | Community participation in the work provided by geosite | |
| S4 | Community participation in managing geosite | |
| S5 | Training and counseling to the community | |
| S6 | Voluntary participation | |

Statistical analysis used the Statistical Package for the Social Sciences (SPSS) 24.0, for factor analysis to reducing and process interrelationships between observations and to reveal obvious patterns [10]. We aimed to concentrate the 26 variables into small number of groups in order to
summarize the representative information for all local community’s perception. According to the Kaiser standard [11], common factors with an eigenvalue of more than 1.0 should be obtainable. From the eigenvalue and the correlation coefficient matrix of the variables, we obtained the factor loading.

In term of the internal correlation of participation, we constructed two hypothesis: 1) the participation toward geosites of local communities is impacted directly by their perception of the geosites, and 2) the positive participation of local communities is impacted by their perceptions through their attitudes toward the geosites management (see Figure 1).

Figure 1. Proposed Structural Equation Mode

While, in relation between participation and status level of the geopark, hypothesis constructed as there is difference of participation level in both of the geosites that is not same with the level of geosites status itself. Based on factor analysis, there will be some latent variables representing local community’s perception toward geosite; therefore, we selected a Structural Equation Model (SEM) as the best statistical approach to explain the natural or social phenomena by introducing the latent variable that can’t be observed directly and by identifying causality between observations and latent variables. This process can be considered as an expansion of factor analysis and multiple regression analysis [11]. The SEM of local community’s perception was divided into attitudes (A) and participation (S) (Fig. 1). SEM analysis was used to verify which hypothesis in term of internal correlation of participation is valid, and the path coefficient (standard partial regression coefficient) was used to show intensity and direction of relationships among the perception factors, attitudes, and participation. Larger path coefficients indicate stronger influential factors. Multivariate Analysis of Variance (MANOVA) was used to test the ratio of variations within and between groups (Dilon & Golstein, 1984). MANOVA tested whether the different demographic groups had different
perceptions, attitudes, and participation intent. If a difference existed, we conducted a post hoc test to determine where the difference was among the groups.

Related to the level of participation, this study used category of participation level from [13] as follows:

### Table 2. Typologies of Participation

| Form and level of participation                      | Characteristic of features                                                                 |
|------------------------------------------------------|---------------------------------------------------------------------------------------------|
| Nominal participation                                | Subscribing to a group                                                                     |
| Consultative participation                           | Being informed of decisions without adding voice on it                                     |
| Activity-specific participation                      | Opinion search “by the way process” for ratification of decisions taken                   |
| Active                                               | Having a direct opinion on matters concerning your development                            |
| Interactive (empowering) participation              | Having a voice or influence in the group decisions                                        |

3. Results

3.1. Respondents Description

In Rammang-rammang geosite, 280 questionnaires were distributed, and 264 valid responses were collected. The respondents were dominated by men with 81.82%. Average age majority in productive age with 71.67%. Education level is low education with 67.43% and their income per year also there in middle to low range which is 75.76%. Almost all of the respondents are local people who have settled and become residents of more than 20 years consisting of people who work, have families, and do not work on geosites.

Different things are shown by Muroto Cape Geosite, out of 200 questionnaires distributed, there are 171 valid responses that can be processed. From the valid responses, the majority of sex were dominated by women (52.63%), with age around 30 years and above (81.88%), and the level of education that could be classified as high (88.88%). As for the income of the community it is considered to be spread evenly across the five income classes. The half of the community are local people who have lived in Muroto Cape for more than 20 years with different working relationships with geosites.

3.2. Local Community’s Perception

Related to the positive perception, in Rammang-rammang geosite 77.48% responses were accepted (P1 to P9), with a value over 3, and P7 “Increase environmental protection” had the most positive response with 96.21%. There are also 3.11% respondents reject positive perception (by giving score lower than 3) with the highest in P9 “improve other public facilities”. Muroto Cape geosite shows that 55.69% of respondent accept positive perception with the highest is P1 “increase development of the local economy” with 78.95%. In other side of Muroto Cape geosite, 10.46% respondent rejected positive perception with the highest reject from P8 “improve local infrastructure” with 30.99%.

In terms of negative perception, for Rammang-rammang geosite 86.17% respondent rejected negative perception (item N1 to N8) by giving score lower than 3. While for the Muroto Cape geosite has 61.55%. Both of the geosite, the highest rejection from N4 “increase environmental damage” with 91.67% for Rammang-rammang geosite and 83.04% for Muroto Cape geosite. On the other hand, 3.13% respondent in Rammang-rammang Geosite and 11.77% in Muroto Cape Geosite accept negative perception by giving score more than 3. The highest acceptance for both of the case study is N8 “increase maintenance activities” with 7.20% for Rammang-rammang Geosite and 36.84% for Muroto Cape Geosite.

The majority of respondents in Rammang-rammang Geosite supported the establishment of geosite (by giving score more than 3 for items A1-A3) with percentage is 86.49%. The highest support from A2 “level of satisfaction with geosite” by 89.02%. In the other side, for Muroto Cape Geosite 54.78% supported the establishment of geosite. The highest support from A1 “support for the development of geosite” with percentage of 89.47%.

In community’s participation, for Rammang-rammang Geosite 88.19% respondents accept to participate in geosite management (by giving score more than.3 for items S1 – S6). The highest
acceptance for S2 “Distribute geosite profits” with 90.53%. In other side, 2.02% responses are rejected with the highest is S6 “voluntary participation” with percentage 3.41%. The other story for Muroto Cape Geosite has 39.08% acceptance for participate. The highest acceptance is same for S2 “Distribute geosite profits” with 72.51%. While other side there is also rejection for participate. The highest rejection in Muroto Cape Geosite come from S3 “Community participation in the work provided by geosite” with percentage of 46.02%.

3.3. Common Factors in Local Community’s Perception

According to the Kaiser standard, we selected 6 factors for negative and positive perception in Rammang-rammang geosite, and 4 factors in Muroto Cape geosite. These factors formed because it had eigenvalue >1 that means the factor formed has capability to represent the items as unity. While, the eigenvalue will influence contributing rate that means percentage of uninformity. Higher percentage of contributing rate value, that means the factor has higher diversity. Therefore, value of contributing rate is better if it below 50%. The principle factor method and varimax rotation were used to obtain the factor patterns, where the factor pattern describes the factor loading value. A larger factor pattern shows a stronger influence of a common factor on the objective variable. In terms of positive perceptions in Rammang-rammang geosite (Table 3), the first factor “Positive Perception Benefit” (PPB), was composed of P1, P2, P3, and P7. The second factor, “Positive Perception Service” (PPS) included three items (P5, P8, and P9). The third factor that formed as the last is “Positive Perception Communities Potency” (PPCP) included P4 and P6. In the other hand of case study Muroto Cape Geosite, (Table 3) the first factor is “Positive Economic Perception” (PEP) was composed of P1, P2, P3, P4, P5, and P6. While the last factor formed as a second factor is “Positive Living Environment” (PLE). The accumulated contribution of three factors of positive perception in Rammang-rammang geosite was 59.342, while two factors in Muroto Cape Geosite was 56.340%

Table 3 Factor analysis of positive perception in Rammang-rammang Geosite and Muroto Geosite

| Code | Eigen value | Contributing rate (%) | Factor name |
|------|-------------|-----------------------|-------------|
| First factor | P1 | 2.409 | 26.772 | Positive Perception Benefit (PPB) |
| | P2 | | | |
| | P3 | | | |
| | P7 | | | |
| Second factor | P5 | 1.772 | 19.684 | Positive Perception Service (PPS) |
| | P8 | | | |
| | P9 | | | |
| Third factor | P4 | 1.160 | 12.386 | Positive Perception Communities Potency (PPCP) |
| | P6 | | | |

Rammang-rammang Geosite

Muroto Geosite

Note: According to the Kaiser standard, three eigenvalues >1.0 were selected for positive perception. The factor pattern reflects the factor loading value, with a larger factor patterns being a stronger objective variable.

Table 4 Factor analysis of negative perception in Rammang-rammang Geosite and Muroto Geosite

| Code | Eigen value | Contributing rate (%) | Factor name |
|------|-------------|-----------------------|-------------|
| First factor | N1 | 2.178 | 27.226 | Negative Perception Disadvantage (NPD) |
| | N2 | | | |
| | N4 | | | |
| | N5 | | | |
| Second factor | N3 | 1.330 | 16.621 | Negative Perception Existence (NPE) |
| | N6 | | | |
| Third factor | N7 | 1.252 | 15.650 | Negative Perception Regulatory (NPR) |

Rammang-rammang Geosite

Muroto Geosite

Note: According to the Kaiser standard, three eigenvalues >1.0 were selected for positive perception. The factor pattern reflects the factor loading value, with a larger factor patterns being a stronger objective variable.
About negative perception, there are 3 factors that formed in case study of Rammang-rammang Geosite. The first factor is “Negative Perception Disadvantage” (NPD) was formed by 4 items of N1, N2, N4 and N5. The second factor is “Negative Perception Existence” (NPE) was formed by 2 factors of N3 and N6. The third factor is “Negative Perception Regulation” (NPR) that contains items of N7 and N8. The accumulated contribution of three factors negative perception in Rammang-rammang geosite is 59.497% (Table 4). In other case of Muroto Cape Geosite, there are 2 factors formed. The first factor is “Negative Living Environment” (NLE) that contained by N1, N2, N3, N4, N6, and N7. The second factor as the last is “Negative Economic Perception” (NEP) that contained by N5 and N8. The total contribution of two factors is 62.616% (Table 4).

3.4 SEM of Local Community’s Perception, Attitudes and Participation

Based on the relation of SEM, it has been analyzed the relation between perception, attitude, and participation. With SEM analysis, we validated the relationship between perceptions, attitudes, and participation of local communities that could not otherwise observed directly. To be an answer of hypothesis, we need to link it one by one. Therefore, we develop three models for each case study. The first correlation between perception and attitude of communities in Rammang-rammang Geosite shows in Fig. 2 that there are four factors that influence attitude. Four factors are PPB, PPS, PPCP, and NPD. While correlation between perception and attitude of communities in Muroto Cape Geosite in Fig. 3 shows that there are three factors that influence attitude. Three factors contain by PLE, NLE, and NEP.

Note: A: Attitude; S: Participation towards the geosite; PPB: Positive Perception Benefit; PPS: Positive Perception Service; PPCP: Positive Perception Communities Potency; NPD: Negative Perception Disadvantage; NPE: Negative Perception Existence; NPR: Negative Perception Regulation; \( \zeta \) = (zeta) chance of model error; \( \varepsilon \) = (epsilon) measurement error in manifest variable for latent variable Y; \( \delta \) = (delta) measurement error in manifest variable for latent variable X; P1-P9, N1-N8 see table 1; * non-significant. Path coefficient sees Fig. 1.

Figure 2 Model Correlation Between Perception, Attitude, and participation in Rammang-rammang Geosite
SEM analysis revealed that in Rammang-rammang Geosite (Fig. 2) factor PPB had the strong causal relationships with A of local communities, with path coefficient of 0.85, and another positive perception of PPS and PPCP has strong influence also with path coefficient of 0.13 and -0.12 respectively. Both of these factors mean that community who has positive perception like PPB, and PPS will support the management of Rammang-rammang geosite, whereas for community who has PPCP will not support because it has value in minus that means contrast as opposite. In term of negative perception, NPD has path coefficient -0.08 that means community who has NPD perception will not support for management of Rammang-rammang Geosite.

SEM analysis revealed also that in Muroto Cape Geosite (Fig. 3) factor PLE, NLE, and NEP has causal to A community. The strongest influence from positive perception is PLE with path coefficient of 0.92 that means community who has PLE perception will support management of Muroto Cape Geosite. In other side of negative perception, the strongest causal is come from NLE with -0.28 and second position is NEP with -0.10. Minus value means that community who has NLE and NEP perception will not support management of Muroto Cape Geosite.

Note: A: Attitude; S: participation towards the geosite; PEP: Positive Economic Perception; PLE: Positive Living Environment; NLE: Negative Living Environment; NEP: Negative Economic Perception; \( \zeta \) = (zeta) chance of model error; \( \epsilon \) = (epsilon) measurement error in manifest variable for latent variable Y; \( \delta \) = (delta) measurement error in manifest variable for latent variable X; P1-P9, N1-N8 see table 1; * non-significant. Path coefficient sees Fig. 1.

Figure 3 Model Correlation Between Perception, Attitude, and participation in Muroto Cape Geosite
In Fig 2, the participation of community is influenced by positive perception like PPB, PPS and PPCP. Path coefficient value for this relation is 0.63, -0.07, 0.16 respectively. The highest value from PPB that means community who has positive perception in form of PPB, will be participate in Rammang-rammang geosite management. For the value that has minus (-) it means being opposite for what to not participate. This minus value also for negative perception literally for NPD, where the value is -0.26. Community who has negative perception in form of NPD will not participate in Rammang-rammang Geosite management.

Muroto Cape Geosite as another study case, their participation influenced by PLE, NLE, and NEP in terms of positive and negative perception. All of the perception had positive path coefficient that means, community who has the significant perception of PLE, NLE and NEP will be participate in Muroto Cape Geosite management. The highest value of path coefficient is NEP. Based on result for both of case study, it shows that community’s perception influencing their participation towards management of geosite. This result means that the first hypothesis is correct that “the participation toward geosites of local communities is impacted directly by their perception of the geosites”. But, to make the hypothesis clear, we need to make sure the second hypothesis in case to be a comprehensive answer, even Fig. 3 already give the answer partially.

Last analysis to analyze internal relation between perception, attitude, and participation in both of case study, we conduct analysis to find correlation between attitude and participation. This is important to complete the answer for the second hypothesis from SEM analysis. In Rammang-rammang Geosite there are relation between attitude and participation, by path coefficient value of 1.14 (categorized as a strong influence) (Fig. 2). In the other case, Muroto Cape Geosite doesn’t has relation between community’s attitude and their participation (Fig. 3). By these result, we know that Rammang-rammang Geosite support hypothesis 2 (the positive participation of local communities is impacted directly by their perceptions through their attitudes toward the geosites management), while Muroto Cape Geosite support hypothesis 1 (the participation toward geosites of local communities is impacted directly by their perception of the geosites).

### 3.5 Variations in Local Resident’s Perception, Attitudes, and Participation

The main purpose of this research was to elucidate the perception structure of local communities in the geopark (by case study of the geosite). Perception was related to personal and locational characteristics. MANOVA and the post hoc test can show variations in perceptions to the same item for different groups of local communities. Table 5 and 6 provides the variables used in the analysis, with the dependent variable as ordinal and independent variable as nominal. Results are shown in Table 7.

**Table 5 Variables in MANOVA for Rammang-rammang Case Study**

| Category             | Code     | Composition |
|----------------------|----------|-------------|
| PPB (Positive Perception Benefit) | P1, P2, P3, P7 |
| PPS (Positive Perception Service) | P5, P8, P9 |
| PPCP (Positive Perception Communities Potency) | P4, P6 |
| NPD (Negative Perception Disadvantage) | N1, N2, N4, N5 |
| A (Attitude)         | A1, A2, A3 |
| S (Participation)    | S1, S2, S3, S4, S5, S6 |
Based on the result of Table 7, it shows that there is relation between independent variable and dependent variable. Rammang-rammang Community’s perception in PPB (Positive Perception Benefit) is influenced by education and income per year of community. Their attitude is influenced by income per year. The last variable is participation influenced by income per year and relationship (employment related to geosite). In other case of Muroto Cape, community’s perception of PLE influenced by age and income per year, then their participation influenced by age, education, and income per year of community. These result didn’t show the detail of category in independent variable that influence dependent variable. Therefore, we need to explore it by Post hoc test

**Table 7 MANOVA result for Rammang-rammang and Muroto Case Study**

| Rammang-rammang Geosite | Muroto Geosite |
|--------------------------|----------------|
| **Independent Variable** | **Dependent Variable** | **Sig. (p value)** | **Independent Variable** | **Dependent Variable** | **Sig. (p value)** |
| Education                | PPB (Positive Perception Benefit) | 0.046             | Age                       | PLE (Positive Living Environment) | 0.000             |
| Income per year          | PPB (Positive Perception Benefit) | 0.043             | S (Participation)          | s (Participation)               | 0.000             |
|                          | A (Attitude)                  | 0.039             | Income per year            | PLE (Positive Living Environment) | 0.000             |
|                          | S (Participation)             | 0.031             |                          | S (Participation)               | 0.004             |
| Relationship (employment related to geosite) | S (Participation) | 0.029             |                          | S (Participation)               | 0.001             |

Note: Details of PPM, PPL, A, and S see Table 2

### 3.6 Post Hoc Test

This part will using Bonferroni test to identify detail of factor that influence perception, attitude, and participation in both of the case study. Bonferroni test used if there is a similarity between variance for same of the sample size for each treatment. Result of this test shows that community who has low
income will have perception of PPB, support with the management of geosite, and also want to participate in Rammang-rammang geosite management. Post hoc test also shows that community who has high education will have positive perception in form of Positive Perception Benefit (PPB), and who work by themselves or not work in geosite, want to participate in Rammang-rammang geosite management (see Table 8). Meanwhile, in the other case of Muroto Cape geosite, post hoc test shows that local community who are in productive age, high income and are highly educated have a high positive perception in form of Positive Living Environment (PLE) which will lead to community’s participation (see Table 8). This value of result acceptable because it is significance (by level of confidence <0.05).

Table 8 Post Hoc Test for Rammang-rammang and Muroto Case Study

| Dependent Variable | Group (a) | Group (b) | p-value |
|--------------------|-----------|-----------|---------|
| PPB (Positive Perception Benefit) | College | Middle | 0.004 |
| | Senior High School | 0.012 |
| | < 10 M | 0.045 |
| | 10 – 25 M | 0.040 |
| | 25 – 40 M | 0.041 |
| A (Attitude) | < 10 M | 0.039 |
| | 10 – 25 M | 0.011 |
| | 25 – 40 M | 0.013 |
| | None | Self | 0.049 |

| Dependent Variable | Group (a) | Group (b) | p-value |
|--------------------|-----------|-----------|---------|
| PLE (Positive Living Environment) | 20 – 35 Y | 35 – 50 Y | 0.060 |
| | >550M | 0.001 |
| | 50 – 65 Y | 0.001 |
| | < 100M | 0.000 |
| | 100 – 250M | 0.002 |
| | 250 – 400M | 0.009 |
| | 400 – 550M | 0.034 |
| | > 65 Y | 0.000 |
| S (Participation) | < 10 M | 0.001 |
| | 10 – 25 M | 0.000 |
| | 25 – 40 M | 0.000 |
| | >550M | 0.008 |
| | 250 – 400M | 0.000 |
| | 400 – 550M | 0.000 |

Note: * mean difference significance in value <0.05. For details of PPB, PLE, A and S, Group A and Group B see Table 5 and 6

4. Discussion

This research shows that public perception in the form of Positive Perception Benefit (PPB) is the variable that most influences for the level of community’s participation in geosite management. Analysis of Structural Equation Modeling (SEM) shows that PPM variable is the biggest factor value that influence community participation. This PPM variable is composed of several items such as P1 “increase development of the local economy”, P2 “Job opportunities increase”, P3 “increase income of local community” and P7 “increase environmental protection” (see Table 1). Based on the further research of MANOVA regarding independent variable that influence the perception of PPM, it is known that the level of education variables and community income are the causes. Local communities with low income and highly educated people will have PPM perceptions. This certainly makes sense because “the form of public interest in a resource management in developing countries is generally inseparable from economic problems” [14]. Based on the results of MANOVA post hoc test (Table 8), it can be seen that income level (especially the low income, <40 million per year) tends to influence the PPM variables, attitudes, and community participation. This is because, the economic needs of the community lead them to have perceptions of PPM, support and participate in the management of geosite Rammang-rammang. While high education brings people to think more about the environmental aspects of the items P7.

In addition, the results of SEM analysis also show that in the process of perception influencing community’s participation certainly does not occur directly. These perceptions need to go through attitude variables first to decide the community’s partiality before participating. This certainly confirms the disharmony between stakeholders in the management of the Rammang-rammang geosite. Lack of trust in the local community causes all forms of participation to be considered based on the perceptions and alignments of the community. Based on the level of participation model (see Table 2), it can be seen that the level of community’s participation is at the “functional and interactive” level. Where this level of participation has a characteristic that community has a voice or influence in group
decisions. This is confirmed by the results of the study that the percentage of community participation in Geosite Rammang-rammang is higher than that of Muroto Cape Geosite. While SEM analysis also adds that the participation of local people is influenced by the attitude variable of their support in the management of geosite. This attitude variable is the main reason why people have a voice or influence group decisions.

Muroto Cape Geosite

Based on the results of SEM analysis, community’s participation is directly influenced by dependent variable in the form of public perception. So that the community doesn’t need to confirm their perceptions through a supportive attitude to determine the level of their participation. Based on the level participation (Table 2) it can be seen that level of community participation in the management of Muroto Cape Geosite is at the “consulative level”. Consulative participation has the characteristic that the community knows a decision without being able to add sound in it. This can be seen in SEM analysis, that public perception is not through attitude variables in determining community support. The relationship of the direct influence of perception on community participation make community not have the right to add a voice to its partiality in the form of any support, but community only knew of those decisions. People who has positive perception in form of PPL will bring people to participate. This concludes that the community knows well that Muroto Cape Geosite has a positive environmental impact, where community and other stakeholders together in maintaining the landscape’s heritage in the form of geosite as a tourist destination. The level of community knowledge of the purpose geopark itself, it’s illustrate where the majority of people agree with P6 “increasing the value of community attraction” and P7 “increase environmental protection” which is the goal of the geopark itself.

Furthermore, the result of MANOVA show that local people who are in productive age, have high income and are highly educated have high positive perception in form of Positive Living Environment (PLE) which will lead to community participation. Those who are highly educated have good knowledge of the importance of the environment associated with their environment, and high level education also have implications for having high economic values. Therefore, highly educated people are more likely to have high income. So that in an effort to increase the participation of local people, totally need for government efforts in increasing the impact of PLE in order it can felt to the community in general and invites people who have high education to participate in the management of Muroto Cape Geosite.

5. Conclusions

Based on the results in geosite management at two study case, namely (Rammang-rammang geosite) which represent national-level geosite and (Muroto Cape Geosite) representing global geosite there are some conclusion that produced. From the analysis of variables, the internal relations of perceptions, attitudes, and community’s participation in Rammang-rammang Geosite case show that community’s participation is influenced by community’s perception and attitudes. Perception, attitude, and participation are influenced by external factor (education, income per year, and relation of employment with geosite). Whereas for Muroto Cape Geosite case, community participation is not directly influenced by community perceptions, but needs to be confirmed through consideration of attitude variable. The perception, attitude, and community participation are also influenced by external factors such as age, income per year, and education of local community.

Level community’s participation is not directly proportional to the success rate of the geopark itself (in this case, the success rate of the geopark is measured based on the parameters of the level status of geopark management). Higher status geopark (UNESCO Global Geopark/UGG) such as Geopark Muroto (through Muroto Cape study case) have lower participation rates (consulative participation) compared to lower status geopark (National Geopark) such as Geopark Maros-Pangkep (through a case study of Rammang-rammang Geosite) that has a high level of participation (functional and interactive participation).
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