Gender Role In The Conservation And Management Of Forests Over Limestone In Samar Island Natural Park, Philippines

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Abstract. Recognizing and understanding the importance of the different roles and responsibilities of men and women, ensure greater success and provide critical insights as we promote sustainable development and effective conservation policies while properly safeguarding natural resources. Hence, the study was carried out to determine the role of men and women, of various age brackets, in the conservation of forests over limestone (*kaigangan)* in SINP, which will lead to more effective and inclusive implementation of conservation management. A 10% sample of the total population in Paranas and Taft was categorized based on gender and age bracket (>18 years old). The survey material was divided into two sections: (1) socio-demographic profile and (2) participation in conservation activities in SINP. Spearman correlation and ANOVA was employed in the analyses of the study. A total of 273 respondents, with 140 males and 133 females were interviewed. The findings revealed that many of the respondents' responses were found to be significantly correlated ($p<0.05$ and $p<0.01$) with their age group. Gender is significantly correlated ($p<0.05$) with the respondents' involvement in conservation activities. Men (29%) outnumbered women (14%) in engaging in any conservation activities at various ages. However, some respondents were unable to participate because they were unaware and did not have time to attend any conservation-related activities. Women and men are both important stakeholders in the conservation of *kaigangan* forest in SINP. The lesser is the degree of participation, in forest conservation activities, the lesser is the likelihood of success in the conservation efforts.

Keywords: gender roles, conservation and management, forests over limestone, kaigangan, Samar Island Natural Park

1 Introduction

Forests over limestone in Samar Island Natural Park (SINP) provides a variety of products, including wood and non-wood products, as well as intangible forest services

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such as reducing the severity of natural disasters and providing aesthetic value in nearby villages [1]. Despite the benefits demonstrated above, this forest is declining because it is vulnerable to anthropogenic activities such as quarrying, land-use change, deforestation, hunting, illegal logging [2, 3, 4], and habitat degradation due to processes such as domesticated animal grazing and wood collection for fuel [5, 6]. Thus, sound policies and programs should be implemented to prevent the destruction of this forest over limestone by incorporating and understanding the roles of men, women, as well as their participation and interactions with the environment and the community [7].

Gender roles, according to Manfre & Rubin [8], are socially defined tasks, responsibilities, and behaviors that are appropriate for men and women as they have different levels of knowledge and access to forest and resource use for various purposes [9, 10]. Their knowledge, preferences, and priorities are the result of socialization processes that assign certain responsibilities to men and women based on their gender [8] Moreover, women's perceptions, priorities, and concerns must be understood by development programs because they differ from men's and can influence outcomes [11]. Understanding this ensures greater success and provides critical insights on how they value resources as we promote sustainable development and effective conservation policies while properly safeguarding natural resources [12, 13]. Furthermore, involving both men and women in conservation management entails empowering marginalized groups by allowing them to express and act on their preferences and needs in forest conservation management [14, 15]. This is because both men and women are studied and consulted, allowing for more accurate and clearer research results [16].

To date, there is little information and a lack of focus on gender roles and their conservation implications [17, 18], particularly for forests over limestone of Samar Island Natural Park (SINP). Al-Azzawi [19] stated that a significant number of studies had indicated that including gender studies in monitoring and evaluating conservation projects was extremely valuable. Most empirical studies on gender focus on agriculture [20, 21, 7], water and sanitation [22], post-harvest activities and trade [23, 24, 25], and coastal or mangrove conservation [26, 27]. Recognizing the different roles and responsibilities of men and women, as well as the importance of their equal roles, is critical in identifying relevant problems, solutions, management, and decision making in the sustainable management of natural resources [28, 13]. Hence, the study was carried out to determine the role of men and women, of various age brackets, in the conservation of forests over limestone (kaigangan) in SINP, which will lead to more effective and inclusive implementation of conservation management. The study specifically aims to (1) assess the respondents' knowledge and awareness of the importance, activities, and impact related to kaigangan forests, (2) determine the respondents' involvement and roles in any conservation activities, and (3) determine the respondents' perception of who should be responsible and take the lead for the protection and conservation of the kaigangan forests.

2 Methodology

2.1 Study sites

The research was carried out in selected barangays in Paranas, Samar (Brgy. San Isidro and Tenani) and Taft, Easter Samar (Brgy. San Rafael), Samar Island, Philippines (Figure 1). These barangays were part of the Samar Island Natural Park (SINP), a protected area by Presidential Proclamation No. 442 of 2003 in accordance with Republic Act No. 7586 (NIPAS Act of 1992). These areas were selected because Paranas has the eco-trail and Taft has the birding sites in SINP.

The municipality of Paranas, Samar is made up of 44 barangays, including San Isidro and Tenani. It is located on the island of Samar at approximately 11° 46' North and 125° 1' East. The elevation at these coordinates is estimated to be 6.9 meters or 22.7 feet above mean sea level (https://www.openstreetmap.org). The land area of Paranas is 556.12 square kilometers, making up for 9.20% of Samar's total area. Its population as determined by the 2020 Census was 32,374 [29], representing 4.08% of the total population of Samar province according to PhilAtlas.

On the other hand, Taft, Eastern Samar is made up of 24 barangays, one of which is San Rafael. Taft's municipal center is located on the island of Samar at approximately 11° 54' north, 125° 25' east. Elevation is estimated to be 8.7 meters or 28.5 feet above mean sea level at these coordinates (https://www.openstreetmap.org). Taft covers 231.27 square kilometers of land, making up for 5.01% of Eastern Samar's total area. Its population as determined by the 2020 Census was 18,786 [29], representing 3.94% of the total population of Eastern Samar province according to PhilAtlas.

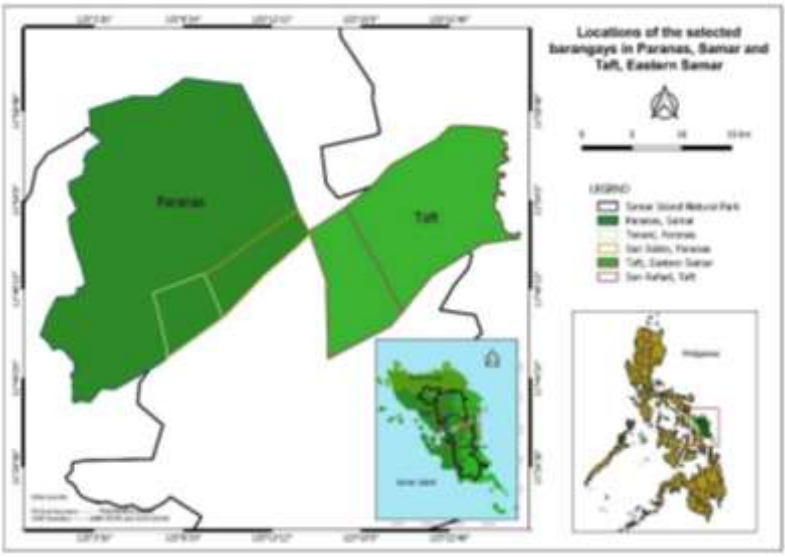

Fig. 1. Location of the study area in Paranas, Samar and Taft, Eastern Samar, Philippines.

2.2 Determining the sampling size

Table 1. Population size (10%) of the total population in SINP.

AGE BRACKET/ GROUPS	MEN	WOMEN
18-30 years old	63	61
31 – 50 years old	48	44
> 51 years old	29	28
TOTAL	**140**	**133**

The population data of each selected barangays of Paranas, Samar and Taft, Eastern Samar were the target respondents of this study. The collected data were categorized based on gender and age. The study differentiated between men and women and was further subdivided into three (3) age groups. These were the young adults (18-30 years old), adults (31-50 years old), and senior citizens (51 years old and up). The sampling size was computed by taking the 10% [30] of the total population in each category (Table 1).

2.3 Data gathering and interview

The survey was conducted in selected barangays in the municipalities of Paranas and Taft in July 2022. A survey questionnaire was developed to determine the gender roles and participation of the residents in the kaigangan forest within SINP. Additionally, the instrument has components assessing the residents' perspective towards the different factors needed to consider in the planning and implementation of conservation management of Samar's forests over limestone. The material was divided into two sections: (1) socio-demographic profile and (2) participation in conservation activities. The socio-demographic profile is composed of questions designed to elicit basic information from the interviewee. On the other hand, the second section will assess the respondents' knowledge, awareness, involvement and roles, and perception related to kaigangan forests.

In this study, the scale developed by Sözen [31] was used and modified based on the scale towards different questions in the participation of the respondents in conservation activities. The scale was designed as a 5-point Likert type, as shown in Table 2 below.

Table 2. Scoring range of Likert scale of the survey Sözen [31].

	Value	Range
Strongly Agree	5	4.21 – 5.00
Agree	4	3.41 – 4.20
Undecided	3	2.61 – 3.40
Disagree	2	1.81 – 2.60
Strongly Disagree	1	1.00 – 1.80

2.4 Data analysis

Respondents' responses were transferred into Excel sheets. Questions were reverse coded in Excel before they were transferred into SPSS for data analyzing procedures. The socio-demographic profile of the respondents was tabulated and summarized using frequency distributions and percentages [32]. Spearman correlation coefficient analysis was done between gender and age groups and their participation in conservation activities. Also, to see the differences between the groups, one-way ANOVA test was also performed.

3 Results and Discussion

Table 3. Socio-demographic profile of the respondents.

Socio-demographic profile	PERCENTAGE (%)					
	MEN			WOMEN		
	18-30 years old	31-50 years old	>51 years old	18-30 years old	31-50 years old	>51 years old
Age	45	34	21	46	33	21
Regional Ethno-linguistic Group						
Waray	98	98	100	98	97	100
Tagalog	2	2	0	2	0	0
Others	0	0	0	0	3	0
Total	**100**	**100**	**100**	**100**	**100**	**100**
Religion						
Roman Catholic	92	92	93	90	91	93
Born again	3	8	0	2	2	7
Cristian	0	0	0	2	0	0
Iglesia ni Cristo	2	0	0	2	0	0
7th day Adventist	2	0	7	5	0	0
Sabadista	2	0	0	0	0	0
Pentecostal	0	0	0	0	5	0
Muslim	0	0	0	0	2	0
Total	**100**	**100**	**100**	**100**	**100**	**100**
Civil status						
Single	79	17	3	48	11	0
Married	5	50	76	16	48	64
Separated	2	2	0	0	5	0
Widower	0	2	14	3	2	29
Live-in	14	29	7	33	32	7
Others	0	0	0	0	2	0
Total	**100**	**100**	**100**	**100**	**100**	**100**
Role in the family						
Father	22	83	93	0	0	0
Mother	0	0	0	41	91	93
Son/Daughter	76	17	3	52	9	0

Grandfather/mother	0	0	3	0	0	7
Grandson/daughter	0	0	0	3	0	0
Niece/Nephew	0	0	0	2	0	0
In-law	0	0	0	2	0	0
Cousin	2	0	0	0	0	0
Total	**100**	**100**	**100**	**100**	**100**	**100**
Educational attainment						
Elementary	14	54	55	8	30	71
Highschool	62	27	31	49	41	7
College	24	19	14	41	30	18
Postgraduate	0	0	0	2	0	4
Total	**100**	**100**	**100**	**100**	**100**	**100**
Land Tenure status						
Owned	62	50	72	39	43	68
Owned by relatives	19	23	7	44	30	7
Rented	10	4	0	7	0	0
Government	6	21	14	8	25	21
Living with relatives	0	2	0	2	0	4
Owned by other people	3	0	7	0	2	0
Total	**100**	**100**	**100**	**100**	**100**	**100**
Owner of farmland in *kaigangan* forest						
Yes	38	25	52	23	36	50
No	62	75	48	77	64	50
Total	**100**	**100**	**100**	**100**	**100**	**100**
Household income						
<1000	25	17	28	25	11	11
1000-5000	44	46	59	39	48	64
5000-10000	17	25	3	20	30	11
10000-15000	5	10	7	7	7	7
15000-20000	2	0	3	3	0	4
>20000	6	2	0	7	5	4
Total	**100**	**100**	**100**	**100**	**100**	**100**
Main source of income						
Farming	62	48	52	56	43	43
Businesses	3	6	0	10	7	18
Employee	16	10	24	15	18	14
Laborer	6	10	17	7	14	11
Mechanic	2	2	0	2	2	0
Driver	5	8	3	8	5	0
Pensioner	0	0	0	0	0	7
Tour guide/boatman	3	2	3	0	0	0
Vendor/seller	2	2	0	0	2	7
Carpenter	0	4	0	0	2	0
Housemaid	2	0	0	2	2	0
Welder	0	0	0	2	0	0
Fishing	0	6	0	0	0	0
Other	0	0	0	0	5	0
Total	**100**	**100**	**100**	**100**	**100**	**100**

3.1 Participation in conservation activities

A total of 273 respondents, with 140 males and 133 females were interviewed in selected barangays in the municipality of Paranas (San Isidro and Tenani) and Taft (San Rafael) (Table 1). The demographics of the respondents (Table 3) show that both men (79%) and women (48%), aged 18-30 years old were single and in high school educational attainment. Whereas 76% men and 64% women of the respondents were married (>51 years old). Many of the respondents, both men and women of various ages, have a household income of Php1, 000.00 to 5,000.00, and earned their living through farming.

Table 4 shows the mean scoring range of Sözen's [31] scale for assessing respondents' knowledge, awareness, involvement and roles, and perception related to kaigangan forests. The findings revealed that men and women of various ages had nearly identical knowledge about kaigangan forests, with only a few exceptions based on the range [31] of the computed mean value of the variables.

Results shows that between 18-50 years old (Table 4), men know "very well", and women know "well" that kaigangan forest exists in their area (Q2). This could be because men are well aware that they rely on the forest for survival. In terms of the benefits provided by kaigangan forests, it was observed that timber (Q9.9), ornamentals (Q9.11) and firewood (Q9.12) were "very important" to women, but only "important" to men. Perhaps because ornamentals add aesthetic value and firewood can be used as fuel when women cook for their families. Moreover, both men and women aged 18-50 years old "rarely" saw slash and burn (Q10.1) and cutting of trees (Q10.3), whereas men and women over 51 years old (both men and women) "never" saw these activities in kaigangan forests. Farming (Q10.4), on the other hand, was seen "occasionally to frequently" by respondents aged 18-50 years old, while those over 51 years old had "never" seen this activity. Most likely because some senior citizens would rather stay at home than go outside. Furthermore, women (31-50 years old) were "rarely" involved in conservation activities as an awareness campaign/ communicator (Q14.6) and monitoring staff (Q14.7). Both men and women (31-50 years old) were "rarely" involved as field guides (Q14.9), field workers and laborers (Q14.10). Women (>31 years old) are "rarely" involved as seed and seedling distributors (Q14.13) and maintenance personnel (Q14.14). This is because the majority of respondents in SINP educational attainment was in high school and elementary level, making it difficult for them to participate in conservation activities where some of the roles required a graduate degree. However, both men and women "agree" that they do not have time (Q15.2) to participate in any conservation activities. Men "agree" that they were unaware of the activities (Q15.1), while women "agree" that they were afraid of harmful animals (Q15.6) and supernatural beings (Q15.7), which is why they did not participate in conservation activities.

Though the majority of men and women were "never" involved in any conservation activities, they were knowledgeable and aware of the kaigangan forest in their area, as shown in Table 4. According to Owens [33], increased knowledge and awareness do

not result in pro-environmental behavior. Similarly, many of those who were not involved in conservation activities are between the ages of 18 and 30 (Table 4). Gandiwa et al. [34] discovered on their study that no youth were members of the Communal Area Management Programme for Indigenous Resources (CAMPFIRE) committees in their four study communities in Zimbabwe because youths were reported to be preoccupied with educational activities, cross-border trading, and sporting activities. Aside from that, a higher proportion of the youths in their study were employed and/or preferred employment that paid a monthly salary, primarily outside of their rural communities [34]. This is also one of the reasons why SINP respondents prefer to work rather than participate in conservation activities. As a result, conservation activities and programs should include livelihood opportunities that are appealing to SINP respondents.

Table 4. The mean scoring range of the 18–30, 31-50 and >51-year-old respondents' participation in conservation activities.

Questions	18-30 years old		31-50 years old		>51 years old	
	MEN	WOMEN	MEN	WOMEN	MEN	WOMEN
1. Are you familiar with forests over limestone of kaigangan forest?	Well	Well	Well	Well	Very well	Very well
2. Are you aware that there is kaigangan forest in your area?	Very well	Well	Very well	Well	Very well	Very well
3. Do you know that kaigangan is protected by law?	Well	Well	Very well	Well	Well	Well
4. Do you know that there is an agency that oversees the management and conservation of kaigangan forests?	Well	Well	Very well	Well	Well	Very well
5. Current condition of kaigangan forests?	Good	Good	Good	Fair	Fair	Fair
6. Past condition of kaigangan forests?	Good	Good	Good	Good	Good	Good
7. Future condition of kaigangan forests in the next 10 years?	Fair	Fair	Good	Fair	Good	Fair
8. Do you know the benefits from kaigangan forests?	Well	Well	Well	Well	Well	Well
9. How do you rate the importance of the ff. benefits provided by kaigangan forests?						
9.1 Clean water	Very important	Very important	Very important	Very important	Very important	Very important
9.2 Fresh air	Very important	Very important	Very important	Very important	Very important	Very important
9.3 Soil stability	Very important	Very important	Very important	Very important	Very important	Very important
9.4 Wildlife habitat	Very important	Very important	Very important	Very important	Very important	Very important
9.5 Climate change amelioration	Very important	Very important	Very important	Very important	Very important	Very important
9.6 Place for meditation	Very important	Very important	Very important	Important	Important	Very important
9.7 Ecotourism	Very important	Very important	Very important	Very important	Very important	Very important
9.8 Food & Medicine	Very important	Very important	Very important	Very important	Very important	Very important
9.9 Timber	Important	Very important	Very important	Very important	Very important	Very important
9.10 Raw Materials	Very important	Very important	Very important	Very important	Important	Very important
9.11 Ornamentals	Important	Very important	Very important	Very important	Very important	Very important

9.12 Firewood	Important	Very important	Important	Important	Very important	Very important
9.13 Income	Very important	Very important	Very important	Very important	Very important	Very important
10. How often have you seen the ff. activities in kaigangan forests?						
10.1 Slash & Burn	Rarely	Rarely	Rarely	Rarely	Never	Never
10.2 Mining	Never	Never	Never	Never	Never	Never
10.3 Cutting of trees	Rarely	Rarely	Rarely	Rarely	Never	Never
10.4 Farming	Frequently	Frequently	Occasionally	Occasionally	Rarely	Rarely
10.5 Harvesting of plant parts	Occasionally	Frequently	Rarely	Rarely	Rarely	Rarely
10.6 Hunting of wildlife	Rarely	Never	Rarely	Never	Never	Never
11. Do you agree that the ff. can happen in kaigangan forests if not sustainably managed?						
11.1 Climate change	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Agree	Strongly agree
11.2 Landslides	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree
11.3 Flooding	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree
11.4 River pollution	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree
12. The ff. activities will help in the protection and conservation of kaigangan forests?						
12.1 Participating in conservation programs	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Agree
12.2 Strengthening & organizing POs	Agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Agree
12.3 Strict implementation of laws	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree
12.4 Enactment of localized biodiversity conservation strategy	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree
12.5 Active involvement of concerned agencies	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree
12.6 Forest information dissemination	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree
12.7 Native plant collection and distribution	Agree	Strongly agree	Agree	Agree	Strongly agree	Agree
12.8 Sowing of seeds in the backyard	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Agree
12.9 Planting of seedlings	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Agree

12.10 Care & maintenance of plants	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Agree	Agree
12.11 Sustainable harvesting of resources	Strongly agree	Strongly agree	Strongly agree	Agree	Strongly agree	Agree
14. Your role in activities related to the conservation of kaigangan forests?						
14.1 Lead Planner	Never	Never	Never	Never	Never	Never
14.2 Policy Maker	Never	Never	Never	Never	Never	Never
14.3 Collaborator Staff	Never	Never	Never	Never	Never	Never
14.4 Support staff	Never	Never	Never	Never	Never	Never
14.5 Resource person	Never	Never	Never	Never	Never	Never
14.6 Awareness campaign/ communicator	Never	Never	Never	Rarely	Never	Never
14.7 Monitoring staff	Never	Never	Never	Rarely	Never	Rarely
14.8 Plant identification experts	Never	Never	Never	Never	Never	Never
14.9 Field guide	Never	Never	Rarely	Rarely	Never	Never
14.10 Field workers & laborers	Never	Rarely	Rarely	Rarely	Rarely	Occasionally
14.11 Sample collector	Never	Never	Rarely	Never	Never	Never
14.12 Propagule & seed collector	Never	Never	Never	Never	Never	Never
14.13 Seed & seedling distributor	Never	Never	Never	Rarely	Never	Rarely
14.14 Maintenance personnel	Never	Rarely	Rarely	Rarely	Rarely	Rarely
15. Why are YOU not involved in activities related to the protection and conservation of kaigangan forests?						
15.1 Unaware	Agree	Undecided	Agree	Undecided	Undecided	Agree
15. No time	Agree	Agree	Agree	Agree	Undecided	Agree
15.3 Not interested	Agree	Undecided	Undecided	Undecided	Undecided	Undecided
15.4 Not priority	Undecided	Undecided	Undecided	Undecided	Undecided	Undecided
15.5 Living far from the forest	Undecided	Undecided	Undecided	Undecided	Undecided	Undecided
15.6 Afraid of harmful animals	Undecided	Agree	Undecided	Undecided	Undecided	Undecided
15.7 Afraid of supernatural beings	Undecided	Agree	Undecided	Undecided	Undecided	Undecided
15.8 Bad experience in the forest	Undecided	Undecided	Undecided	Undecided	Undecided	Undecided
16. Who should be responsible in the care and management of kaigangan forests?						
16.1 DENR	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree
16.2 Provincial government	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree
16.3 Municipal government	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree
16.4 Barangay	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree
16.5 People's organization	Strongly agree	Agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree

16.6 NGO	Agree	Agree	Strongly agree	Agree	Strongly agree	Agree
16.7 Education & other sectors	Agree	Agree	Strongly agree	Agree	Agree	Agree
16.8 Public, private business & industries	Agree	Agree	Agree	Agree	Agree	Agree
16.9 Community	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree
17. Should the ff. individuals or citizens be responsible as well as for the protection and conservation of kaigangan forests?						
17.1 Children	Agree	Agree	Strongly agree	Agree	Agree	Undecided
17.2 Teenagers	Agree	Agree	Strongly agree	Strongly agree	Agree	Agree
17.3 Adults	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree
17.4 Men	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree
17.5 Women	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree
17.6 Senior citizens	Agree	Agree	Agree	Agree	Agree	Agree
18. Who do you think should take the lead in protecting and conserving the kaigangan forests?						
18.1 LGU Barangay	Strongly agree	Strongly agree	Strongly agree	Agree	Agree	Agree
18.2 LGU Municipal	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Agree	Strongly agree
18.3 LGU province	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Agree	Strongly agree
18.4 Academe	Strongly agree	Agree	Strongly agree	Agree	Agree	Agree
18.5 People's organization	Strongly agree	Agree	Strongly agree	Strongly Agree	Agree	Agree
18.6 NGO	Agree	Agree	Strongly agree	Agree	Agree	Agree
18.7 Youth organization	Strongly agree	Strongly agree	Strongly agree	Agree	Agree	Agree
18.8 PAMB, DENR	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree
18.9 Special office under the President of the Philippines	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Agree	Strongly agree
19. Why do you think your choice in #18 should take the lead in protecting and conserving the kaigangan forests?						
19.1 It has leadership capability	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree

19.2 It has the authority	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree
19.3 It has the financial capacity	Strongly agree	Agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree
19.4 It has the technical capability	Strongly agree	Agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree
19.5 It is independent	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Agree	Strongly agree
19.6 It is less bureaucratic	Strongly agree	Agree	Strongly agree	Agree	Strongly agree	Strongly agree	Strongly agree
19.7 It has minimal irregularities	Strongly agree	Agree	Agree	Agree	Agree	Agree	Agree

Respondents' knowledge and awareness of the importance, activities, and impact related to kaigangan forests.

Based on the analysis (Table 5), there is a significant correlation ($p<0.01$ and $p<0.05$) between age groups in terms of respondents' responses to Q2 (Are you aware that there is kaigangan forest in your area?), Q3 (Do you know that kaigangan forests are protected by law?), Q4 (Do you know that there is an agency that oversees the management and conservation of kaigangan forests?) and Q9.8 (Food and medicine). This means that the responses of the respondents at various age groups are related to their age level. Moreover, gender is negatively correlated ($p<0.01$) with Q7 (condition of the kaigangan forests in the next 10 years) (Table 5). This is due to the different perspectives of men, which is "Good" to "Fair" condition of women in the kaigangan forests in the next 10 years (Table 4). Based on ANOVA analysis (Table 6), gender was significant ($p<0.05$) in respondents' responses in Q1, Q2, Q7 (condition of the kaigangan forests in the next 10 years), and some of the benefits provided by kaigangan such as Q9.8 (Food and medicine), Q9.9 (Timber) and Q9.12 (Firewood). In addition, aged 18-30 years old (Table 6) was significant only in >51 years old in terms of Q1 and Q2. Based on Table 4, the majority of 18-30 year old respondents know "well," while those over 51 years old know "very well" about kaigangan forests. This is most likely due to the fact that respondents over the age of 51 were already in the area before the young adults.

Table 7 shows a significant correlation ($p<0.05$ and $p<0.01$) between age groups in terms of the activities seen in kaigangan forests such as Q10.1 (Slash and Burn), Q10.2 (Mining), Q10.3 (Cutting of trees), Q10.4 (Farming), Q10.5 (Harvesting of plant parts), Q10.6 (Hunting of wildlife), and activities that will help in the protection and conservation such as Q12.9 (Planting of seedlings), Q12.10 (Care and maintenance of the plants) and Q12.11 (Sustainable harvesting of resources). ANOVA analysis (Table 8) reveals a significant relationship ($p>0.05$) between >51 years old and 18-50 years old in terms of slash and burn and mining. It was also observed that >51 years old "never" seen slash and burn in kaigangan, while 18-50 years old "rarely" seen this activity (Table 4). Likewise, age groups were significant in farming activities (Q10.4). This is because farming was "frequently" seen by both men and women (18-30 years old), "occasionally" seen by 31-50 years old and "rarely" seen by >51 years old respondents (Table 4). This might because senior citizens (>51 years old) respondents might probably rarely go outside to see what the activities is conducted in their area. Additionally, >51 years old were significant in 18-50 years old in terms of planting of seedlings (Q12.9). Planting of seedlings/propagules was viewed as a task for both genders in the study of Ladia et al. [26] in the Case of Calatagan Mangrove Forest Conservation Park in Batangas. However, in this study, it was discovered that gender has no effect, but age group does. This is because respondents between the ages of 18 to 50 "strongly agree", whereas people over 51 only "agree" on the importance of planting of seedlings to help in the protection and conservation of kaigangan forests. Based on the ANOVA analysis (Table 8), gender and age group were significant ($p<0.05$) in the activities seen in kaigangan such as hunting of wildlife (Q10.6). Men

“rarely” saw wildlife hunting, while women “never” saw it in the kaigangan forest. Men and women over the age of 51, on the other hand, have “never” witnessed wildlife hunting in the kaigangan forest (Table 4).

Moreover, non-significant findings in the majority of the questions in Tables 5, 6, 7, and 8 indicated that men and women of different ages have similar knowledge and awareness about the importance, activities observed, and their impact on kaigangan forests. The respondents' knowledge of the benefits provided by kaigangan forests is unrelated to their gender or age. As a result, the small differences in the perception of men and women at various ages on their responses to various questions in the survey had no effect on the overall findings of the **Table 5.** study.

Correlations between gender and age group in the respondents' knowledge and importance about kaigangan forests.

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9.1	Q9.2	Q9.3	Q9.4	Q9.5	Q9.6	Q9.7	Q9.8	Q9.9	Q9.10	Q9.11	Q9.12	Q9.13
Gender	0.033	-0.085	0.007	0.019	-0.037	0.069	**-.179****	-0.049	0.101	0.118	0.038	0.067	0.051	0.005	0.044	0.093	0.091	0.029	0.065	0.107	0.052
Age group	0.106	**.126***	**.148***	**.230****	-0.025	-0.088	0.104	0.104	-0.094	-0.097	-0.070	-0.096	-0.073	-0.076	-0.087	**-.220****	-0.049	0.078	0.062	0.007	-0.098

**, ** correlation is significant at p-value of <0.05 and <0.01 level.*

Table 6. Influence of gender and age group in the respondents' knowledge and importance about kaigangan forests.

Gender	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9.1	Q9.2	Q9.3	Q9.4	Q9.5	Q9.6	Q9.7	Q9.8	Q9.9	Q9.10	Q9.11	Q9.12	Q9.13
Men	**4.14**^{a}	**4.36**^{a}	4.01^{a}	3.95^{a}	3.45^{a}	3.74^{a}	**3.36**^{a}	3.88^{a}	4.60^{a}	4.56^{a}	4.54^{a}	4.47^{a}	4.48^{a}	4.24^{a}	4.41^{a}	**4.39**^{b}	**4.46**^{b}	4.26^{a}	4.23^{a}	**4.11**^{b}	4.34^{a}
Women	**3.81**^{b}	**4.09**^{b}	4.08^{a}	4.00^{a}	3.41^{a}	3.83^{a}	**2.89**^{b}	3.80^{a}	4.71^{a}	4.68^{a}	4.58^{a}	4.56^{a}	4.50^{a}	4.23^{a}	4.47^{a}	**4.56**^{a}	**4.26**^{a}	4.29^{a}	4.36^{a}	**4.35**^{a}	4.43^{a}
Age group																					
18-30 years old	**3.80**^{a}	**4.08**^{a}	**3.85**^{a}	**3.68**^{a}	3.46^{a}	3.92^{a}	3.02^{a}	3.73^{a}	4.69^{a}	4.65^{a}	4.56^{a}	4.56^{a}	4.50^{a}	4.27^{a}	4.47^{a}	**4.61**^{b}	4.32^{a}	4.27^{a}	4.32^{a}	4.22^{a}	4.44^{a}
31-50 years old	4.01^{ab}	4.26^{ab}	**4.29**^{b}	**4.23**^{b}	3.41^{a}	3.67^{a}	3.18^{a}	3.86^{a}	4.64^{a}	4.65^{a}	4.58^{a}	4.47^{a}	4.53^{a}	4.21^{a}	4.43^{a}	**4.37**^{a}	4.41^{a}	4.32^{a}	4.25^{a}	4.16^{a}	4.32^{a}

>51 years old	**4.32^{b}**	**4.49^{b}**	4.07^{ab}	**4.21^{b}**	3.39^{a}	3.68^{a}	3.32^{a}	4.05^{a}	4.58^{a}	4.53^{a}	4.53^{a}	4.49^{a}	4.39^{a}	4.19^{a}	4.39^{a}	**4.33^{a}**	4.33^{a}	4.23^{a}	4.30^{a}	4.35^{a}	4.37^{a}

** Means with the same superscripts in the same column are not significantly different at p<0.05 using DMRT.*

Table 7. Correlation between gender and age group in the respondent's awareness of the activities seen and conducted related to the conservation of kaigangan forests.

	Q10.1	Q10.2	Q10.3	Q10.4	Q10.5	Q10.6	Q11.1	Q11.2	Q11.3	Q11.4	Q12.1	Q12.2	Q12.3	Q12.4	Q12.5	Q12.6	Q12.7	Q12.8	Q12.9	Q12.10	Q12.11
Gender	-0.025	-0.109	-0.070	0.035	-0.009	-.133*	0.033	0.095	0.091	0.063	-0.044	0.014	-0.036	0.016	0.003	0.004	0.026	-0.019	-0.003	0.041	0.088
Age group	-.269**	-.191**	-.199**	.311**	-.254**	-.146*	0.057	0.033	0.049	0.004	-0.090	0.013	0.097	0.111	0.068	0.099	0.072	0.115	-.219**	-.167**	-.139*

**, ** correlation is significant at p-value of<0.05 and <0.01 level.*

Table 8. Influence of gender and age group in the respondent's awareness of the activities seen and conducted related to the conservation of kaigangan forests.

Gender	Q10.1	Q10.2	Q10.3	Q10.4	Q10.5	Q10.6	Q11.1	Q11.2	Q11.3	Q11.4	Q12.1	Q12.2	Q12.3	Q12.4	Q12.5	Q12.6	Q12.7	Q12.8	Q12.9	Q12.10	Q12.11
Men	2.10^{a}	4.36^{a}	2.08^{a}	3.01^{a}	2.59^{a}	1.97^{a}	4.33^{a}	4.40^{a}	4.39^{a}	4.36^{a}	4.38^{a}	4.23^{a}	4.43^{a}	4.39^{a}	4.33^{a}	4.38^{a}	4.11^{a}	4.41^{a}	4.48^{a}	4.40^{a}	4.24^{a}
Women	1.99^{a}	4.09^{b}	1.91^{a}	3.11^{a}	2.56^{a}	1.68^{b}	4.42^{a}	4.53^{a}	4.52^{a}	4.45^{a}	4.29^{a}	4.27^{a}	4.38^{a}	4.40^{a}	4.35^{a}	4.40^{a}	4.18^{a}	4.38^{a}	4.47^{a}	4.47^{a}	4.36^{a}
Age group																					
18-30 years old	2.30^{b}	1.62^{b}	2.23^{b}	3.52^{c}	2.89^{c}	1.95^{b}	4.38^{a}	4.44^{a}	4.45^{a}	4.39^{a}	4.34^{ab}	4.19^{a}	4.45^{a}	4.47^{a}	4.33^{a}	4.40^{a}	4.15^{a}	4.42^{ab}	4.57^{b}	4.50^{b}	4.40^{a}

31-50 years old	2.10^{b}	1.53^{b}	1.92^{ab}	2.96^{b}	2.47^{b}	1.83^{ab}	4.42^{a}	4.49^{a}	4.46^{a}	4.43^{a}	4.42^{b}	4.37^{a}	4.35^{a}	4.35^{a}	4.40^{a}	4.46^{a}	4.14^{a}	4.47^{b}	4.48^{b}	4.52^{b}	4.24^{a}
>51 years old	1.42^{a}	1.12^{a}	1.61^{a}	2.23^{a}	2.07^{a}	1.58^{a}	4.28^{a}	4.47^{a}	4.44^{a}	4.40^{a}	4.19^{a}	4.19^{a}	4.35^{a}	4.32^{a}	4.25^{a}	4.26^{a}	4.14^{a}	4.21^{a}	4.25^{a}	4.16^{a}	4.16^{a}

** Means with the same superscripts in the same column are not significantly different at $p<0.05$ using DMRT.*

3.1.2 Respondents' involvement and roles in any conservation activities.

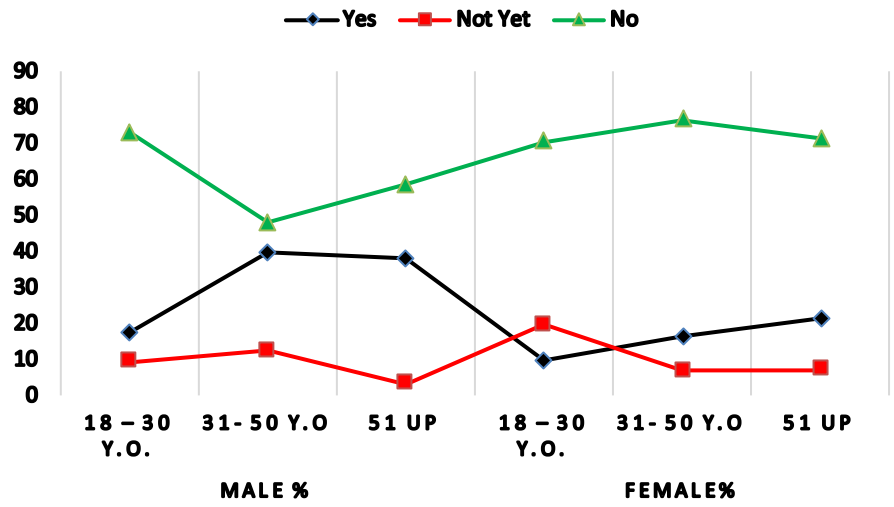

Fig. 2. Respondents' involvement in any conservation activities

As shown in Table 9, it was observed that gender was significant at the $p<0.05$ level in respondents' involvement in any conservation activity (Q13) and that they are unaware of the conservation activities (Q15.1) (Table 9 and 10). This is significant because the vast majority of respondents, both men (71%) and women (85%) were not engaged in and never participated in any conservation-related activities (Figure 2). People's involvement in the conservation of kaigangan forests in SINP is critical. In general, the success or failure of conservation is heavily dependent on the participation of local people in any conservation activities [35, 26]. As a result, residents of SINP must engage them in these activities. As shown in Fig. 2, men (29%) outnumbered women (14%) in participating in any conservation activities at various ages. Forestry has traditionally been a male-dominated field [36, 37, 38], which is one of the reasons why gender is rarely incorporated into conservation research, making it more difficult for women to participate in forest management and decision making. There are also documented cases where women are uninterested in forest resource management [39]. This could imply that women's roles in the sector are invisible and informal, resulting in poor working conditions and lower remuneration [40]. Studies show that the lesser their involvement in conservation activities and the more restrictive the society is to women, the lesser they perform their role as preservers of the environment, the faster forest denudation may occur [27] and conservation activities are less likely to succeed [41, 42]. According to Sodhi [43], the inclusion of women may encourage other women to participate in conservation efforts. Women, on the other hand, can strengthen their capacity to effectively advocate for their rights and negotiate with other institutions by working through women's groups [8]. It has been demonstrated that increasing women's

participation in decision-making committees in community forest institutions improves forest governance and resource sustainability [14, 15]. Thus, the outcomes are better [44].

Meanwhile, gender and age groups are not significant in terms of the roles of the respondents in any activities related to conservation (Table 9 and 10). Probably because it is related to their profile, which is not included in the analysis. Based on the mean scoring range (Table 4), majority of the respondents have no roles in any conservation activities and only a few were "rarely" involved such as awareness campaign/communicator, monitoring staff, field guides, field workers and laborers, sample collector, seed and seedling distributor and maintenance personnel.

In terms of why respondents were not involved in any conservation activities, a negative correlation was found between gender in terms of Q15.1 (Unaware) and age group in terms of Q15.2 (No time). The same results were also obtained using ANOVA in this analysis. Men (18-50 years old) "agreed" that they were "unaware", while women (18-50 years old) were "undecided" of the SINP conservation efforts. Both men and women between (18-50 years old) "agreed" that a lack of time or no time is the reason they do not participate in such activities, as illustrated in Table 4. Time constraints limit respondents' ability to participate in a variety of conservation-related activities. According to Ruiz-Pérez et al. [45], one of the factors limiting the ability of Cameroonian women traders is a lack of time. Based on the respondents' demographics, many in this study are mothers (Table 3). Women manage a tight schedule if they have small children, businesses, unpaid community work, or their house is not close to the forest area and attending meetings and conservation related activities may be difficult to fit in [8, 11]. In Bolivia, women's participation in meetings was found to be constrained more by a general lack of time than by the time of day meetings were held [46]. This study discovered that participation in conservation by both genders is linked to livelihood, as the results show that SINP respondents would rather work to feed their families than participate in conservation activities. In addition, most respondents were "undecided" as to why they do not participate in activities related to the protection and conservation of kaigangan forests, as shown in Table 4. Similarly, a few respondents stated that they were unable to participate due to their age, or that they had not been informed or invited to participate in conservation activities and had other priorities to work on, such as feeding their families.

Respondents' perception of who should be responsible and take the lead for the protection and conservation of the kaigangan forests.

As illustrated in Tables 11 and 13, a negative correlation was observed between age groups in terms of who should be the following individuals or citizens such as Adults (Q17.3), Men (Q17.4), and who should take the lead such as LGU Barangay (Q18.1), LGU Municipal (Q18.2), LGU Province (Q18.3), People's organization (Q18.5) and Youth organization (Q18.7) for the protection and conservation of kaigangan forest. This suggests that the perceptions of different age groups differ from one another. Based on the survey, every one of all ages agreed that children, teenagers, adults, men and women, and senior citizens should be responsible for the protection and

conservation of the kaigangan forests. It was also discovered in Table 4 that some respondents', mostly women over the age of 51, were "undecided", that children should participate in such activities. Some respondents also stated that everyone, including the President, Vice President, senators of the Republic of the Philippines, the PNP, and the AFP, should take the lead in protecting and conserving the kaigangan forests. Nonetheless, gender has no relationship or influence on who should be responsible and take the lead for protecting and conserving the kaigangan forests (Tables 11, 12, 13, and 14). This could be due to the fact that these perceptions are based on age group rather than gender.

Table 9. Correlation between gender and age group in the respondent's involvement and roles as well as not participating in any conservation activities in kaigangan forests.

	Q13	**Q14.1**	**Q14.2**	**Q14.3**	**Q14.4**	**Q14.5**	**Q14.6**	**Q14.7**	**Q14.8**	**Q14.9**	**Q14.10**	**Q14.11**	**Q14.12**	**Q14.13**	**Q14.14**	**Q15.1**	**Q15.2**	**Q15.3**	**Q15.4**	**Q15.5**	**Q15.6**	**Q15.7**	**Q15.8**
Gender	**.143***	0.042	0.058	0.107	0.156	0.085	0.082	0.128	0.048	-0.111	0.054	-0.007	0.047	0.050	0.092	**-.157***	0.026	0.075	0.041	0.028	**.165***	0.138	0.048
Age group	-0.111	0.067	0.011	0.060	0.020	0.095	0.020	0.031	0.084	0.055	0.062	-0.026	0.035	0.094	0.026	0.106	**-.191****	0.056	0.069	0.049	0.097	0.083	**.173***

**, ** correlation is significant at p-value of <0.05 and <0.01 level*

Table 10. Influence of gender and age group in the respondent's involvement and roles as well as not participating in any conservation activities in kaigangan forests.

Gender	**Q13**	**Q14.1**	**Q14.2**	**Q14.3**	**Q14.4**	**Q14.5**	**Q14.6**	**Q14.7**	**Q14.8**	**Q14.9**	**Q14.10**	**Q14.11**	**Q14.12**	**Q14.13**	**Q14.14**	**Q15.1**	**Q15.2**	**Q15.3**	**Q15.4**	**Q15.5**	**Q15.6**	**Q15.7**	**Q15.8**
Men	**2.32^{b}**	1.54^{a}	1.35^{a}	1.20^{a}	1.39^{a}	1.31^{a}	1.54^{a}	1.46^{a}	1.33^{a}	1.81^{a}	1.93^{a}	1.56^{a}	1.41^{a}	1.57^{a}	1.89^{a}	**3.52^{a}**	3.77^{a}	3.26^{a}	3.28^{a}	3.15^{a}	3.21^{a}	3.14^{a}	2.93^{a}
Women	**2.58^{a}**	1.62^{a}	1.49^{a}	1.38^{a}	1.70^{a}	1.54^{a}	1.70^{a}	1.78^{a}	1.43^{a}	1.54^{a}	2.05^{a}	1.49^{a}	1.46^{a}	1.73^{a}	2.08^{a}	**3.24^{b}**	3.72^{a}	3.13^{a}	3.33^{a}	3.23^{a}	3.49^{a}	3.38^{a}	3.06^{a}
Age group																							
18-30 year	2.58^{a}	1.51^{a}	1.37^{a}	1.34^{a}	1.54^{a}	1.29^{a}	1.34^{a}	1.31^{a}	1.26^{a}	1.60^{a}	1.63^{a}	1.40^{a}	1.26^{a}	1.40^{a}	1.83^{a}	3.45^{a}	**3.84^{b}**	3.26^{a}	3.33^{a}	3.20^{a}	3.45^{a}	3.31^{a}	2.83^{a}

s old																						
31-50 years old	2.33[a]	1.69[a]	1.44[a]	1.28[a]	1.44[a]	1.56[a]	1.81[a]	1.75[a]	1.56[a]	1.86[a]	2.19[a]	1.78[a]	1.69[a]	1.86[a]	2.11[a]	3.29[a]	**3.80[b]**	3.11[a]	3.34[a]	3.20[a]	3.25[a]	3.23[a]	3.16[a]
>51 years old	2.35[a]	1.69[a]	1.40[a]	1.15[a]	1.60[a]	1.35[a]	1.70[a]	1.80[a]	1.25[a]	1.60[a]	2.20[a]	1.30[a]	1.25[a]	1.65[a]	1.95[a]	3.33[a]	**3.39[a]**	3.14[a]	3.17[a]	3.17[a]	3.33[a]	3.19[a]	3.17[a]

** Means with the same superscripts in the same column are not significantly different at p<0.05 using DMRT*

Table 11. Correlation between gender and age group in the respondent's perception of who should be the individuals or citizens be responsible and take the lead in the protection and conservation of kaigangan forests.

	Q16.1	Q16.2	Q16.3	Q16.4	Q16.5	Q16.6	Q16.7	Q16.8	Q16.9	Q17.1	Q17.2	Q17.3	Q17.4	Q17.5	Q17.6
Gender	0.089	-0.034	-0.037	-0.058	-0.076	-0.073	-0.047	-0.036	0.003	-0.058	0.028	-0.006	0.056	-0.046	-0.062
Age group	-0.103	-0.014	-0.027	-0.068	-0.025	-0.008	0.017	0.016	-0.062	-0.040	-0.045	**-.132***	**-.154***	-0.046	0.008

**, ** correlation is significant at p-value of<0.05 and <0.01 level.*

Table 12. Influence of gender and age group in the respondent's perception of who should be the individuals or citizens be responsible and take the lead in the protection and conservation of kaigangan forests.

Gender	Q16.1	Q16.2	Q16.3	Q16.4	Q16.5	Q16.6	Q16.7	Q16.8	Q16.9	Q17.1	Q17.2	Q17.3	Q17.4	Q17.5	Q17.6
Men	4.63[a]	4.41[a]	4.46[a]	4.43[a]	4.39[a]	4.26[a]	4.15[a]	3.96[a]	4.39[a]	4.01[a]	4.16[a]	4.49[a]	4.49[a]	4.44[a]	3.89[a]
Women	4.72[a]	4.35[a]	4.40[a]	4.29[a]	4.22[a]	4.11[a]	4.10[a]	3.93[a]	4.41[a]	3.86[a]	4.17[a]	4.50[a]	4.58[a]	4.37[a]	3.71[a]
Age group															
18-30 years old	4.68[a]	4.43[a]	4.49[a]	4.43[a]	4.36[a]	4.28[a]	4.17[a]	4.11[a]	4.37[a]	**4.16[b]**	**4.34[b]**	4.49[a]	4.53[ab]	4.45[a]	3.89[a]
31-50 years old	4.58[a]	4.39[a]	4.40[a]	4.32[a]	4.30[a]	4.21[a]	4.16[a]	3.88[a]	4.42[a]	**3.67[a]**	**4.00[a]**	4.40[a]	**4.40[a]**	4.35[a]	3.82[a]
>51 years old	4.71[a]	4.35[a]	4.40[a]	4.33[a]	4.27[a]	4.10[a]	4.07[a]	3.86[a]	4.41[a]	3.90[ab]	4.10[ab]	4.54[a]	**4.60[b]**	4.40[a]	3.73[a]

** Means with the same superscripts in the same column are not significantly different at p<0.05 using DMRT.*

Table 13. Correlation between gender and age group in the respondent's perception of who should be the individuals or citizens be responsible and take the lead in the protection and conservation of kaigangan forests (cont.).

	Q18.1	Q18.2	Q18.3	Q18.4	Q18.5	Q18.6	Q18.7	Q18.8	Q18.9	Q19.1	Q19.2	Q19.3	Q19.4	Q19.5	Q19.6	Q19.7
Gender	- 0.080	-0.016	-0.037	- 0.090	- 0.097	- 0.106	- 0.066	0.036	- 0.026	- 0.004	0.010	- 0.007	- 0.032	- 0.025	- 0.051	- 0.071
Age group	**-.119***	**- .178****	**- .159****	- 0.106	**-.146***	- 0.059	**-.140***	- 0.078	- 0.113	- 0.070	- 0.053	0.024	0.019	- 0.064	- 0.013	- 0.053

**, ** correlation is significant at p-value of <0.05 and <0.01 level.*

Table 14. Influence of gender and age group in the respondent's perception of who should be the individuals or citizens be responsible and take the lead in the protection and conservation of kaigangan forests (cont.).

Gender	Q18.1	Q18.2	Q18.3	Q18.4	Q18.5	Q18.6	Q18.7	Q18.8	Q18.9	Q19.1	Q19.2	Q19.3	Q19.4	Q19.5	Q19.6	Q19.7
Men	4.39^{a}	4.39^{a}	4.37^{a}	4.20^{a}	4.30^{a}	4.23^{a}	4.24^{a}	4.54^{a}	4.36^{a}	4.44^{a}	4.43^{a}	4.29^{a}	4.33^{a}	4.26^{a}	4.26^{a}	4.14^{a}
Women	4.18^{b}	4.38^{a}	4.34^{a}	4.11^{a}	4.16^{a}	4.08^{a}	4.17^{a}	4.56^{a}	4.30^{a}	4.44^{a}	4.46^{a}	4.25^{a}	4.29^{a}	4.24^{a}	4.15^{a}	4.03^{a}
Age group																
18-30 years old	4.30^{a}	**4.47^{b}**	**4.41^{b}**	4.22^{a}	**4.30^{b}**	4.14^{a}	**4.29^{b}**	4.55^{a}	4.37^{a}	4.45^{a}	4.44^{a}	4.20^{a}	4.25^{a}	4.28^{a}	4.20^{a}	4.15^{a}
31-50 years old	4.36^{a}	4.41^{ab}	**4.40^{b}**	4.13^{a}	**4.31^{b}**	4.24^{a}	4.23^{ab}	4.61^{a}	4.35^{a}	4.47^{a}	4.49^{a}	4.34^{a}	4.38^{a}	4.26^{a}	4.18^{a}	3.99^{a}
>51 years old	4.14^{a}	**4.16^{a}**	**4.16^{a}**	4.05^{a}	**3.94^{a}**	4.07^{a}	**4.00^{a}**	4.46^{a}	4.23^{a}	4.39^{a}	4.37^{a}	4.32^{a}	4.32^{a}	4.18^{a}	4.25^{a}	4.12^{a}

** Means with the same superscripts in the same column are not significantly different at p<0.05 using DMRT*

4 Conclusion

A total of 273 respondents, with 140 males and 133 females were interviewed in selected barangays in the municipality of Paranas (San Isidro and Tenani) and Taft (San Rafael). Many of the respondents, both men and women of various ages, have a household income of Php1, 000.00 to 5,000.00, and earned their living through farming. Moreover, a scoring range based on the computed mean value found few differences between the gender and age groups. Some of the differences were also discovered in the analysis, as there is a significant correlation ($p<0.05$ and 0.01) between age group in terms of the knowledge about kaigangan, awareness about the activities in kaigangan, involvement and roles in any conservation activities, and respondents' perception of who should be responsible and take the lead in the protection and conservation of kaigangan forest.

Furthermore, it was also revealed that respondents living in SINP were familiar with and aware of the importance and benefits of kaigangan forests. Gender was found to be significant at the $p<0.05$ level in respondents' involvement in any conservation activity. This is because the vast majority of respondents, both men (71%) and women (85%) were not engaged in and never participated in any conservation-related activities. There were only 29% men and 11% women involved in any conservation activities. Some respondents were unable to participate because they were unaware of the activities and did not have time to attend because they prefer to work to feed their families. In addition, a few respondents also stated that they were unable to participate due to old age, or that they had not been informed or invited to participate in conservation activities. There is a need to identify diverse activities in which all local residents, regardless of gender or age, can freely participate. Women and men are both important stakeholders in the conservation of the kaigangan forest in SINP. The less they participate and engage in conservation activities, the less likely conservation efforts are to succeed. As a result, this study recommends that the government should find a way to increase public participation, particularly women's engagement and opportunities for conservation activities, or provide a source of income related to the protection and conservation of the kaigangan forests, so that SINP residents will actively participate and cooperate.

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