

PAPER NAME

**JMHT 46111-Article Text-231171-5-10-2
0230818.pdf**

AUTHOR

s s

WORD COUNT

6880 Words

CHARACTER COUNT

37488 Characters

PAGE COUNT

10 Pages

FILE SIZE

1.2MB

SUBMISSION DATE

Aug 28, 2023 6:47 PM GMT+7

REPORT DATE

Aug 28, 2023 6:48 PM GMT+7

● 8% Overall Similarity

The combined total of all matches, including overlapping sources, for each database.

- 3% Internet database
- 5% Publications database
- Crossref database
- Crossref Posted Content database
- 6% Submitted Works database

● Excluded from Similarity Report

- Bibliographic material
- Quoted material
- Cited material
- Small Matches (Less than 10 words)
- Manually excluded sources

Effects of Characteristics and Perceptions of Collectors of Non-Timber Forest Products to be Members of the Partnership Program: A Case Study at Bukit Barisan Selatan National Park, Indonesia

Samsul Bakri¹, Christine Wulandari¹, Nanda Kurniasari^{1*}, Rahmat Safe'i¹, Dadan Ramdani², Anshory²

¹Graduate Program of Forestry, Faculty of Agriculture, Lampung University, Jl. Prof. Dr. Soemantri Brojonegoro No. 1, Bandar Lampung, Indonesia 35158

²Bukit Barisan Selatan National Park Main Office, Jl. Ir. H. Juanda No. 19 Terbayu, Kotaagung, Tanggamus, Indonesia 35384

Received March 6, 2023/Accepted July 24, 2023

Abstract

Conservation partnerships are institutional innovations for self-empowering so that people are no longer dependent on forest areas. Initially, it regulated the relationship between the rights of non-timber forest product collectors (NTFPs) and their obligation to maintain sustainability, such as in the Bukit Barisan Selatan National Park (BBSNP). The high interest in becoming members has not been matched by the optimal implementation of the program that has been implemented since 2018 in the BBSNP traditional zone. Characteristics and perceptions are considered to have an influence on people's behavior in utilizing NTFPs and being interested in becoming members of the partnership. The aim of this research is to analyze the influence of community characteristics and perceptions on the utilization of NTFPs and their desire to become members of the partnership. Data collection used interviews and literature studies, analyzed statistically inferentially in December 2022 by testing the partial least square structural equation modeling (PLS-SEM) hypothesis using the SmartPLS.4.0 software for students with a sample of 62 respondents, namely the partnership permit applicant community. The results of the hypothesis test showed that the characteristics and utilization of NTFPs variables influenced the community's interest in becoming members of the conservation partnership. Perceptions affect the utilization of NTFPs variables. The use of NTFPs acts as a mediator between perceptions and interest in becoming a member. Misperceptions about conservation partnerships affect the implementation of the program. When public perceptions are improved through outreach activities, coaching etc will shape the character of the community to develop livelihoods and productive activities outside the area and stimulate voluntary leaving of the area without social conflict with area managers.

Keyword: NTFPs, traditional zone, BBSNP, partnership

*Correspondence author, email: nandakurniasari015@gmail.com

Introduction

In general tropical forest areas, non-timber forest products (NTFPs) play an important role in supporting the livelihoods of rural residents (Dinh & Pham, 2023). Likewise in Indonesia, especially since the decentralization of governance after the fall of Suharto, where forest encroachment is rampant, the use of NTFPs by encroached communities is unsustainable (Wulandari et al., 2021a). As reported by Dinh and Pham (2020) and Budiman et al. (2020) this phenomenon of unsustainability is triggered by an increase in rural poverty in tropical countries. In connection with this phenomenon, since 2016 the Government of Indonesia has implemented a social forestry program policy which is regulated by regulation in the Regulation of the Minister of Environment and Forestry Number 83/2016 concerning social forestry permits. Then it was updated again in the Minister of Environment and Forestry Regulation Number 9/2021 concerning social forestry which gives permission to forest encroachers to utilize NTFPs for a 35-year concession (Wulandari et al., 2021a). Based on this regulation, social forestry has 5 schemes namely village

forest, community plantation forest, community forest, customary forest, and partnership.

Bukit Barisan Selatan National Park (BBSNP) is managed in a zoning system under the management of the Bukit Barisan Selatan National Park Center, Ministry of Environment and Forestry, Indonesia with an area of ± 355,511 ha. Zones in national parks are divided into core zones, jungle zones, utilization zones, rehabilitation zones, traditional zones, religious zones, and special zones (P.76/Menlhk-Setjen/2015). The form of social forestry in conservation areas is regulated in a conservation partnership scheme that has been implemented by the BBSNP authority since 2018. In essence, this partnership has been regulated and agreed that local communities have managed the area for generations over a period of time. 20 years old are entitled to obtain a conservation partnership permit to manage and collect-NTFPs such as gum resin for cats (*Shorea javanica*), durian (*Durio zibethinus*), jengkol (*Archidendron pauciflorum*), petai (*Parkia speciosa*), and duku (*Lansium domesticum*) legally with a term 5 years and can be extended based on evaluation results from the BBSNP authority. The

granting of this permit means that local communities are no longer categorized as forest encroachers, but as local partners (on sites) in forest management. The loggers are obligated to comply with all applicable laws and regulations which are routinely maintained through counseling and various other technical assistance by the BBSNP Authority. With these various trainings, the BBSNP authority has the main target of realizing self-empowering of squatters in the form of positive behavior in the process of collecting NTFPs (NTFP collecting behavior). As revealed by Wiratno (2018) and Prayitno (2020), a conservation partnership is an effort to balance the interests of conservation against the need to ensure the life and welfare of the people living in and around conservation areas.

In essence, the indicators used for the formation of positive behavior are contained in the technical instructions that have been provided in the Regulation of the Directorate General of Conservation of Natural Resources and Ecosystems Number 6/2018 in conjunction with Regulation of the Directorate General of Conservation of Natural Resources and Ecosystems Number 2/2019 concerning technical guidelines for conservation partnerships in areas nature reserves and nature conservation areas that have been adapted by the BBSNP authority include collecting intensity for NTFP, maintaining NTFP stands, protecting areas from other encroachers, and coordinating between encroachers. Basically, the conservation partnership can be used as a controller so that the use of NTFPs remains under control and sustainable, for example, only the types of NTFPs contained in the partnership permit can be used with limited locations in the utilization zone or in the traditional zone, not to penetrate into the core zone, let alone jungle zone. However, on the other hand the existence of these permits can make pressure on conservation areas even stronger when the economic benefits from the NTFP are greater which can stimulate a wave of people far outside the area to apply for permits to become members of the partnership. The community's inaccurate understanding of the conservation partnership, which thinks that they can get the right to collect NTFPs from forest areas without any obligation, has led to quite high interest in the partnership program, judging from the number of requests.

One of the initial stages before obtaining a conservation partnership permit is to conduct an inventory and identify potential candidate locations to be proposed for implementation of the partnership program. The BBSNP management authority needs tools to select new applicants who are applying for permits. Only squatters who show an attitude in line with the law will be given priority to be recruited as new members in the partnership program. Behavior between individuals is generally diverse which can be influenced either by socio-demographic characteristics or by perceptions of the object at hand, such as interest in something, including joining a partnership group. These two factors generally can directly influence interest, but also indirectly through a mediation process by other factors. According to Pangestika (2018), Firnanda et al. (2020), and Wulandari et al. (2021b) that a person's perception is a variable that is heavily influenced by individual characteristics. Accordingly according to Suhardjito and Wulandari (2019) and Sinthumule (2021), that

understanding community attitudes is a key issue for the conservation and management of the area.

Based on exhaustive literature studies, researchers have not yet been found who have published their work on the development of such prediction models, especially those aimed at using predictions of interest in becoming members of conservation partnerships, especially in BBSNP. According to Ticktin (2004), research on the ecological consequences of harvesting NTFPs has progressed rapidly over the past two decades, but the information is contained in different case studies. The lack of research support regarding the impact of harvesting forest products is one of the problems in national parks (Dunggio & Gunawan, 2009). So far, research on partnerships conducted in BBSNP has been associated with community empowerment (Ristianasari et al., 2013; Winarno et al., 2019), ecotourism (Agustina et al., 2018; Rahayu & Dewi, 2022). Research has been conducted regarding the implementation of the conservation partnership program in BBSNP with a focus on the Liwa Region II National Park Management Sector (Okthalamo et al., 2022), but no one has researched the sustainability of the conservation partnership which is correlated with the characteristics and community perceptions of community interest in becoming members of the program. Departing from the needs that have been described, it is important to conduct this research with the aim of: developing a predictive model of interest in becoming a conservation member based on sociodemographic factors and respondent perceptions directly or through mediating factors in the form of behavior in NTFP collection. The results of this study can be used as a tool for compiling a priority order for prospective conservation team members based on sociodemography, their perceptions of the partnership and their behavior in the process of NTFP utilization which is recognized by the BBSNP authority.

Methods

The research was conducted in the BBSNP on December 2022. The location was chosen because of BBSNP's status as *Tropical Rainforest Heritage of Sumatra* (TRHS), which in 2011 UNESCO included the BBSNP world natural heritage site as one of *the List in Danger* in the world (Figure 1).

Tools and materials Tools used Lenovo G40-30 laptop, software Smart PLS 4.0 for student, software microsoft office 2010 questionnaire and stationery. While the material used is the BBSNP area map, statistical data for the BBSNP area and activity reports on the inventory and identification of potential conservation partnership location candidates within the Bengkuntat Region II National Park Management Section, the Semaka Region I National Park Management Division in Ulok Mukti Village and Sumur Jaya Village.

Research approaches This research uses the main modeling approach structural equation modeling (SEM) which structurally uses an algorithm as shown in Figure 2. Research using the SEM statistical method is still dominated by authors from abroad (AlHakim & Hidayah, 2022). SEM is used to determine the effect of each variable (Wahyuni, 2022). The use of the SEM method can be done when comparing sample characters with two or more data sets

(Putra, 2022). The advantages of estimating using SEM compared to path analysis and regression analysis include, SEM is able to test structural models as well as measurement models along with measuring errors, SEM is able to test the suitability of a model, and is able to overcome missing data (Gusmiarti, 2020). Using the SEM statistical method is still dominated by writers from abroad (AlHakim & Hidayah, 2022). The two exogenous variables applied were sociodemographic characteristics [SOCDM] and respondents' perceptions of partnership [PERCP]. The indicators for [SOCDM] used include age [AGE], number of family members [FMBER], main job [MJOB], length of stay around the area [LENGTH], and period between collectors [PERIOD]. The indicators for [PERCP] include public opinion about the benefits of BBSNP [BNFIT], boundaries of the BBSNP area [BNDRY], community opinion about the function of BBSNP [FNGTION], prohibition of illegal activities in the area [ILLGL], and public opinion on the sustainability of BBSNP [STBLTY]. While the mediating

variable that is applied is behavior in the utilization of NTFPs [BEHAVE], namely collecting Intensity for NTFP [COLLECT], maintaining NTFP stands [MNTNCE], protecting area from other encroachers [PRCTNG], and coordinating between farmers [COORD]. Interest in becoming a partnership member [PARTSH] is positioned as an endogenous variable with 3 indicators of readiness to be member [READY], preparing to be member [PPARE], and learning by doing [LEARN].

Method of collecting data The data collection used as the 17 indicators was carried out through interviews with 62 respondents and extracted from reports on the results of inventory activities and identification of potential potential conservation partnership locations within the Bengkunt Area II National Park Management Section, Region I Semaka National Park Management Division in Ulok Mukti Village and Sumur Jaya Village. The researcher used the technique of Non Probability Sampling saturated sampling

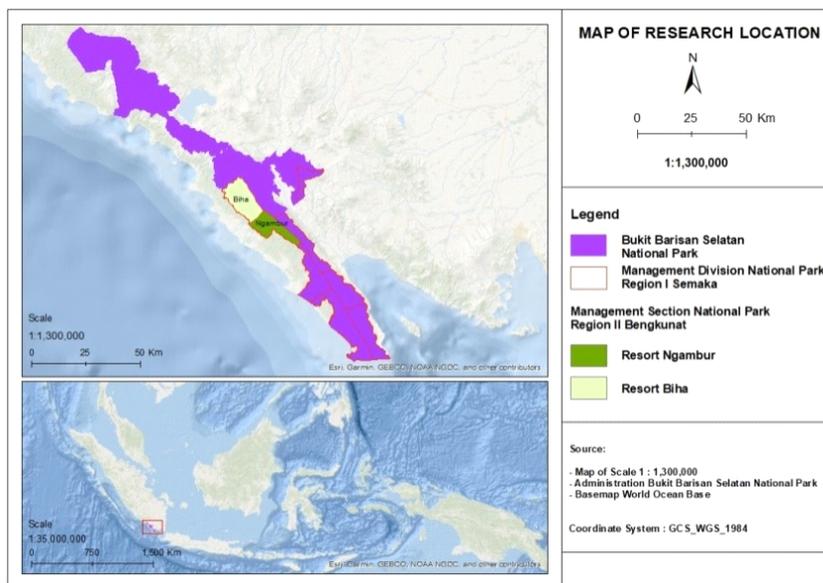


Figure 1 Map of research locations.

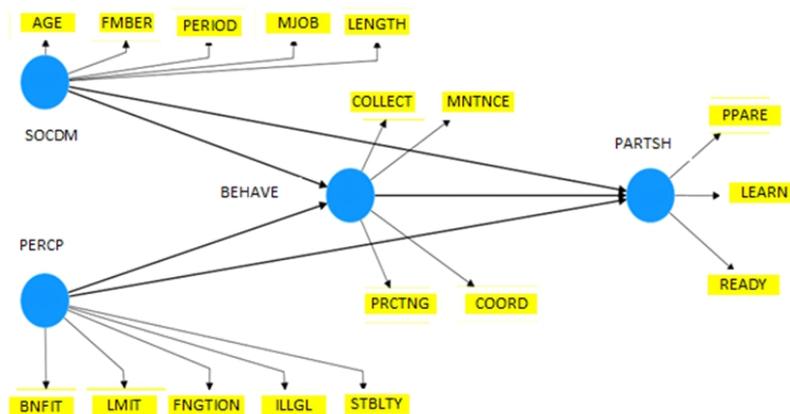


Figure 2 The proposed algorithm model.

to determine the sample of respondents in SPTN Region II Bengkulu, namely the local community who submitted the application. Saturated sampling (census) according to Garaika and Darmanah (2019), is a sampling technique in which all members of the population are sampled in research. Data collection uses literature studies from activity reports, regulations, research results and relevant journals. As according to Abdul (2023), literature study/literature study is a theoretical study related to culture, norms and values that develop in the particular situations studied.

Data analysis The research hypothesis can be formulated as in Table 1. At the hypothesis testing stage, the PLS SEM software version 4.0 for student was used. PLS-SEM applications are well known in other scientific research fields such as agriculture, environmental science, geography and medicine (Sarstedt & Cheah, 2019). According to Chin (2022), PLS-SEM can be used with a minimum sample size of 30–100. PLS-SEM is good to use when the sample size is small but it will be better if the sample used is larger (Hair et al., 2017). The measurement model test used Cronbach's alpha, rho A, rho C and average variance extracted (AVE). Meanwhile, the structural fit model test was performed after using Chi-square, SMSR, and NFI.

Results and Discussion

Evaluation of overall model suitability: Outer model The measurement model in this study is measured reflectively. This is because changes in variables are influenced by changes in indicators or measuring items.

Indicator reliability Based on the results of the analysis, not all values of Factor loading >0.7 (Figure 3) means that not all measurement models affect variables. To obtain an overall fit model, measurement models with values <0.70 were omitted. According to Gusmiarti (2020), it may be necessary to modify the model before estimating parameters. The overall outer loading value after correction is >0.7 , meaning that the outer loading model value is significant where there is a correlation between the indicator and the construct or it meets the validity level requirements (Figure 4). Based on the results of outer loading/factor loading in Table 2, the period of utilization of NTFPs has a loading factor (LF) value of $1,000 \geq 0.70$, which means that this measurement item is valid for measuring the characteristics of respondents. Likewise with the others. The higher the outer loading value produced, this shows that the indicators in a construct have many similarities (Marliana, 2020). Overall, each item that measures variables has a $LF \geq 0.70$ so that it can be said that all measurement items are valid.

Table 1 Research hypothesis

Code	Hypothesis
H ₁	Characteristics influence the community's interest in becoming members of the conservation partnership
H ₂	Characteristics affect the variable utilization of NTFPs
H ₃	The variable utilization of NTFPs influences the community's interest in becoming members of the conservation partnership
H ₄	Perception influences the community's interest in becoming members of the conservation partnership
H ₅	Perception influences the variable utilization of NTFPs
H ₆	As a whole can be good and appropriate in explaining the direct and indirect effects on characteristic variables and community perceptions of NTFP utilization variables and interest in becoming members of conservation partnerships

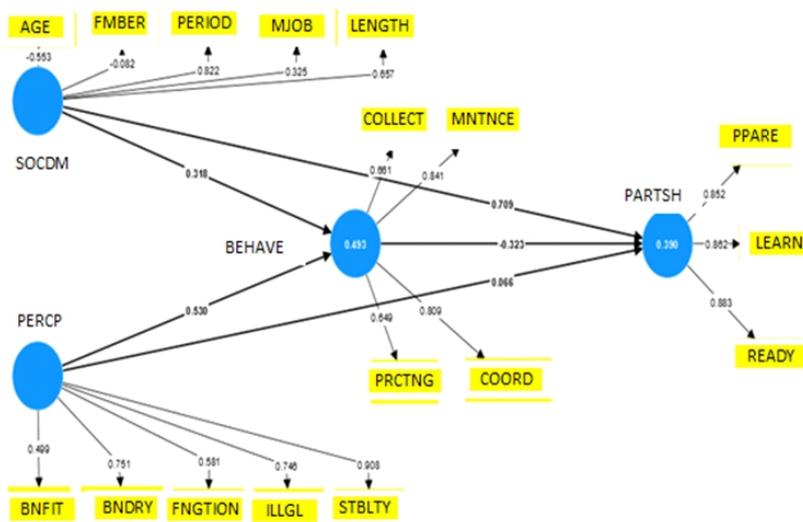


Figure 3 Algorithmic model of the influence of characteristics and people's perceptions of collection of NTFPs and the desire to obtain a partnership permit conservation.

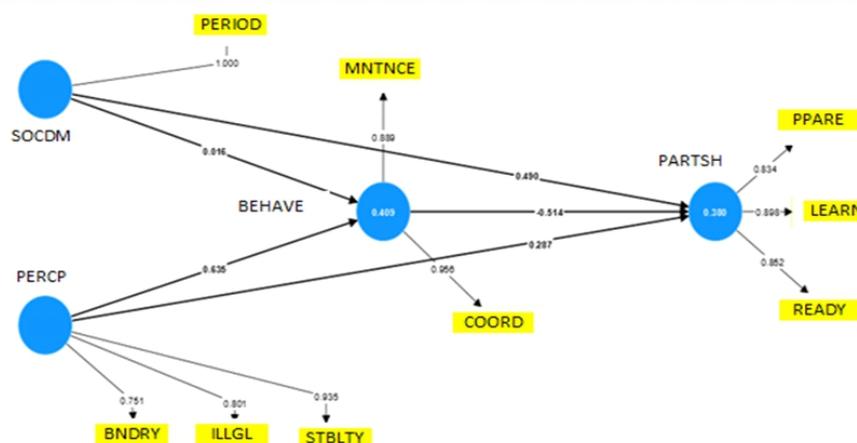


Figure 4 Algorithmic model of the influence of characteristics and people's perceptions of collection of NTFPs and the desire to obtain a partnership permit conservation after correction.

Table 2 Outer loadings/factor loading

Latent variables	Outer loadings
BNDRY ← PERCP	0.751
PARE ← PARTS	0.834
LEARN ← PARTS	0.898
MNTNCE ← BEHAVE	0.889
PERIOD ← SOCDM	1.000
BEHAVE ← COORD	0.956
ILLGL ← PERCP	0.801
STBLTY ← PERCP	0.935
READY ← PARTS	0.852

Composite reliability and convergent validity Validity and reliability tests are used to determine the relationship between questions and answers. If the results of the validity test are valid and the results of the reliability test are said to be reliable, then the questions and answers are always consistent and can be used for further analysis. Based on the results of the overall validity and reliability tests (Table 3), the desire to join a conservation partnership variable has a Rho_C value of $0.896 \geq 0.70$ which indicates that each item that measures desire is consistent/reliable as well as reliability (Rho_C) on perception and utilization variables NTFPs with a value of ≥ 0.70 . In line with Faizah et al. (2021) which states that if composite reliability > 0.7 then the level of reliability is accepted. Likewise according to Muhtarom et al. (2022), that if the value of the reliability test and the composite reliability test is above 0.7 can be said to be reliable. The measure of Convergent Validity is the average variance extracted (AVE) value with an AVE value ≥ 0.5 indicating good convergent validity (Faizah et al., 2021). The AVE value of the community's interest in becoming a member of the conservation partnership is 0.743 which means that the magnitude of the variation in the measurement items for the readiness to be member, preparing to be

member, and learning by doing indicators is contained in the conservation partnership variable of 74.3%. Likewise with the value of the variable NTFP utilization and perception with an AVE value ≥ 0.5 . The AVE threshold value is 0.50 or more, which means that at this level the average construct value is more than 50% of the item variance (Sarstedt et al., 2021). The limit for the AVE value is 0.5 so that if it is above this value, it is said to be valid (Muhtarom et al., 2022).

Discriminant validity (HTMT and Fornell - Larcker criterion) HTMT analysis was carried out to find out empirically the extent of the differences between latent variables in terms of how much they correlate with other latent variables and how clearly the indicators represent these latent variables (Sarstedt et al., 2021). In this study using HTMT values ≤ 0.90 with the results can be seen in Table 4. In terms of the community's interest in joining the conservation partnership and the characteristics of the value of HTMT $0.517 \leq 0.90$, it means that the variation shared by the variable is higher for the measurement item for each variable than divided into other variable items so that the discriminant validity value is fulfilled. In the community interest pair to become members of the conservation partnership with the NTFP utilization variable having a HTMT value of $0.081 \leq 0.90$. The overall HTMT value ≤ 0.90 means that there is no problem with discriminant validity. A high HTMT value indicates a problem with discriminant validity (Sarstedt et al., 2021). According to Henseler et al. (2015), how to assess validity by comparing a good threshold is 0.85 or 0.90.

In determining validity using Fornell-Larcker, the square root of the AVE of each latent variable must be greater than the correlation with other latent variables (Fornell & Larcker, 1981). The cross slash represents the root of AVE (Table 5). The variable AVE root must be greater than the construct root correlation. For example, at the root of the AVE, the characteristics of the respondents (1,000) are greater than the interest in becoming a member of a conservation partnership (0.471), the correlation is greater

than the activity of using NTFP (0.081), and community perceptions (0.268). This shows that the discriminant validity of the respondent's wishes is fulfilled.

Evaluation of overall model suitability: Inner model The inner model is a model used to predict causation from the relationship between latent variables (Muhtarom et al., 2022). Before interpreting the results of hypothesis testing, the model should have a good goodness of fit (Faizah et al., 2021). According to Hair et al. (2017), the model fit index has the possibility of assessing how good the hypothesized model structure is to detect model specification errors. The results of the overall model fit test can be seen in Table 6. The chi-square test is used to test the fit value of the model whose results are suitable (good fit). The results of the standardized root mean square residue (SRMR) test were 0.14. Values less than 0.10 or 0.08 are considered suitable (Hu & Bentler, 1998). According to Henseler et al. (2014), SRMS is a fit measure for PLS-SEM which can be used to avoid model specification errors. SMSR shows an absolute match where if the value is zero then it shows a perfect match (Tegar & Putra, 2022). One fit measure proposed in the SEM literature is the normed fit index (NFI) (Bentler & Bonett, 1980). The NFI test result is 0.575 which means that it is acceptable (marginal suitability). NFI returns values between 0 and 1, the closer to 1 the better the match.

Evaluation of the suitability of the structural model Before testing the structural model, it is necessary to carry out

a multicollinear examination between variables using the inner variance inflated factor (VIF) which can be seen in Table 7. The VIF value must be more than 0.2 and less than 5. If the VIF measurement results are less than 0.2 and more than 5, the construct must be considered for deletion or merging with other constructs (Marliana, 2020). Hypothesis testing is needed to find out whether the hypothesis is accepted or rejected. The general goal of PLS-SEM analysis is to find out the factors that have an influence on success and competitive advantage for target constructs such as behavioral intentions (Sarstedt et al., 2021). The general goal of PLS-SEM analysis is to find out the factors that have an influence on success and competitive advantage for target constructs such as behavioral intentions (Sarstedt et al., 2021). Hypothesis testing using partial least square (PLS) software was carried out by statistical tests on each path (Pratiwi et al., 2022).

A critical decision in the suitability of the structural model or hypothesis testing is to check the p -value at the significant level (α) of 0.05. If the test results in p -value < 0.05 ($\alpha = 5\%$) or t -count $> t$ -table, it means that the test is significant and vice versa if the p -value is > 0.05 ($\alpha = 5\%$) it means it is not significant. Based on the results of hypothesis testing (Table 8), it is known that the characteristics directly influence the intention to become members of a conservation partnership, but the characteristics do not directly affect the NTFP utilization variable. Perception does not directly affect interest in becoming a member of a conservation partnership but it does have a direct effect on the variable utilization of

Table 3 Composite reliability and average variance extracted

Latent variables	Cronbach's alpha	Rho_A	Rho_C	Average variance extracted (AVE)
	Critical value = 0.700			Critical value = 0.500
PARTSH	0.834	0.913	0.896	0.743
BEHAVE	0.834	0.955	0.920	0.852
PERCP	0.788	0.955	0.870	0.693

Table 4 Discriminant validity (HTMT)

Latent variables	Characteristics	Conservation partnership	NTFPs collection	Perception
SOCMD				
PARTSH	0.517			
BEHAVE	0.235	0.332		
PERCP	0.312	0.244	0.673	

Table 5 Fornell-Larcker criterion

Latent variables	Characteristics	Conservation partnership	NTFPs Collection	Perception
SOCMD	1.000			
PARTSH	0.471	0.862		
BEHAVE	0.186	-0.239	0.923	
PERCP	0.267	0.090	0.639	0.832

Table 6 Overall model fit

Parameter	Estimated models	Conclusion testing
Chi-square	147,798/147,798	Suitable
Standardized root mean square residue (SRMR)	0.140	Acceptable suitability
Normed fit index (NFI)	0.575	Marginal fit

NTFPs. The NTFP utilization variable directly influences interest in becoming a member of a conservation partnership.

The community's perception of the boundary markings on the BBSNP, the prohibition of carrying out illegal activities within the BBSNP and the need to preserve the BBSNP makes the community aware that if they wish to continue to use NTFPs in the area, the community must partner with the BBSNP manager through a conservation partnership scheme. In line with Sadikin (2021), that from a social perspective, the conservation partnership policy brings good news to the people who have lived and depended economically on the conservation area for generations because later the community will get access permits in the conservation area. In accordance with Aspuan and Nugraha (2022), that if the community has a positive perception of the existence of the forest, then the community will have positive implications for the existence of the forest, and vice versa.

Period NTFP utilization is a measure of the characteristic variables that influence the desire to obtain a partnership permit. Most of the respondents rarely used NTFPs within the area. Factors that influence the community to rarely use NTFPs apart from the fact that BBSNP officers routinely carry out surveillance through patrols, the community changes its behavior because they want to get legal access to the use of NTFPs and hope that by obtaining a partnership permit no one else will harvest in their location. When the community's dependence is fulfilled economically and social aspects of the conservation area while still paying attention to its sustainability, there will be awareness in the community to protect it (Purwatiningsih, 2022). The active

role of the community will grow if more and more benefits are obtained by the community because there is a very high dependence on the area (Suyono et al., 2017).

In Table 9 it is known that within the 95% confidence interval the effect of the characteristics on the desire to obtain a conservation partnership permit lies between 0.165 to 0.709 and for the influence of respondents' perceptions of the interest in becoming a member of a conservation partnership lies in the numbers -0.118 to 0.675. When people's perceptions are enhanced by various activities (socialization, training, mentoring, coaching, etc.) that will shape the character of the community, the effect on the desire to obtain a conservation partnership permit will increase by up to 67.5%. community in managing the area (Aspuan & Nugraha, 2022). Community sense of responsibility and belonging to forest areas can be realized if they are involved in forest management (Purwatiningsih, 2022). There is a need for community empowerment efforts to be carried out if you want to demand that the community play a role in preserving conservation areas (Qodriyatun, 2019).

Based on Table 10, it can be seen that the NTFP utilization variable plays a significant role as a variable that mediates an indirect effect on respondents' perceptions (0.001) but not on respondents' characteristics on interest in becoming members of a conservation partnership (0.891). According to Juniarto et al. (2021), the effect of intermediary variables as mediation between variables can be determined using the SEM method. Mediation tests are grouped into 3, namely: Non-mediation if the relationship between exogenous and endogenous variables is positive and mediating variables are negative, full mediation occurs if exogenous variables, negative endogenous and mediating variables are positive, partial mediation occurs if exogenous and endogenous variables are positive and mediating variables are also positive or if the *p*-values on the specific indirect effect >0.05 then the value is negative (Muhtarom et al., 2022).

Community perceptions are still wrong about the purpose of the conservation partnership program, which

Table 7 Inner VIF (Critical value max = 5)

Latent variables	Interested in conservation partnership	NTFP collection activities
SOCDM	1,077	1,077
PERCP	1,759	1,077
BEHAVE	1,692	1,077

Table 8 Testing hypothesis results of structural equation model

Hypothesis	Structural equation model	Original sample (O)	Sample means (M)	Standard deviation (STDEV)	<i>t</i> -statistics (O/STDEV)	<i>p</i> -value's	Decision
H ₁	SOCDM → PARTSH	0.490	0.472	0.138	3.553	0.000	Received
H ₂	SOCDM → BEHAVE	0.016	0.006	0.113	0.145	0.885	Rejected
H ₃	BEHAVE → PARTSH	-0.514	-0.526	0.152	3.383	0.001	Received
H ₄	PERCP → PARTSH	0.287	0.278	0.201	1.427	0.154	Rejected
H ₅	PERCP → BEHAVE	0.635	0.656	0.056	11.429	0.000	Received

Table 9 Confidence interval path coefficient (95%)

Hypothesis	Structural equation model	Original sample (O)	Sample mean (M)	2.5%	97.5%
H ₁	SOCDM → PARTSH	0.490	0.472	0.165	0.709
H ₂	SOCDM → BEHAVE	0.016	0.006	-0.225	0.221
H ₃	BEHAVE → PARTSH	-0.514	-0.526	-0.835	-0.242
H ₄	PERCP → PARTSH	0.287	0.278	-0.118	0.675
H ₅	PERCP → BEHAVE	0.635	0.656	0.539	0.760

Table 10 Testing hypothesis results of mediating variable role

Code	Structural equation model	Original sample (O)	Sample means (M)	Standard deviation (STDEV)	t-statistics (O/STDEV)	p-value's	Decision
H ₁	SOCDM → PARTSH	-0.008	-0.010	0.061	0.138	0.891	Rejected
H ₂	PERCP → PARTSH	-0.326	-0.344	0.102	3.188	0.001	Received

considers that being a member of a conservation partnership means obtaining legal access to the use of NTFPs without any rights and obligations that must be carried out. This program is highly in demand. Communities who have used NTFPs but are no longer active due to the wrong perception then apply in droves to become members of the conservation partnership. This is one of the reasons why conservation partnerships have not been able to run optimally. The role of assistant officers in the field is needed to be more extra and continuously provide assistance to people who are not yet interested in becoming members of the conservation partnership or who are already members of the conservation partnership. Because for now what is happening is that there are no economic or social differences between communities who are already members and who are not yet members, so this factor also causes people's perceptions of conservation partnerships to be still not correct apart from getting peace of mind and no need to be anxious in use NTFPs in conservation areas. In fact, according to Ojwang (2020) joint conservation management between the community and the government in the Makuleke I area of the Krugeler National Park is the latest example of resource management that involves working together.

Conclusion

The results of the hypothesis test in this study indicate that the characteristic relationship affects the community's interest in becoming members of the *accepted* conservation partnership, *accepting* the relationship with the NTFP utilization variable affects the community's interest in becoming a member of the conservation partnership, *accepting* the perception relationship influences the NTFP utilization variable, and the overall model can be *good and appropriate* in explaining direct and indirect effects on latent variables in research. The results of the hypothesis test show that the NTFP utilization variable is an intermediary variable for perceptions of interest in becoming a member of the conservation partnership program. Increasing socialization, mentoring and coaching activities in order to provide relevant information related to conservation partnerships from an ecological, economic and social perspective needs to be carried out to prospective members of the conservation partnership in an effort to achieve the goals of an effective and optimal conservation partnership program.

Acknowledgment

Thank you to the BBSNP Main Office for facilitating the collection of research data.

References

Abdul, Y. (2023, May 10). *Studi pustaka: Pengertian, tujuan, sumber dan metode*. Deepublishstore.com.

<https://deepublishstore.com/blog/studi-pustaka/>

- Agustina, M., Winarno, D. W., & Darmawan, A. (2018). Polarisasi persepsi para pihak dalam pengembangan hospitalitas ekowisata di unit pengelola wisata Kubuperahu Taman Nasional Bukit Barisan Selatan (TNBBS). *Jurnal Hutan Tropis*, 6(2), 154–160. <https://doi.org/10.20527/jht.v6i2.5403>
- Alhakim, R. R., & Hidayah, H. A. (2022). Pendekatan structural equation modelling untuk penelitian pendidikan. *Jurnal Ilmu Pendidikan*, 17(1), 1–7.
- Aspuan, A., & Nugraha, R. N. (2022). Persepsi masyarakat terhadap pengelolaan Taman Wisata Alam Telaga Warna Kabupaten Bogor Provinsi Jawa Barat. *Jurnal Inovasi Penelitian*, 3(6), 6593–6598.
- Bentler, P. M., & Bonett, D. G. (1980). Significance test and goodness of fit in the analysis of covariance structures. *Psychological Bulletin*, 88(3), 588–606. <https://doi.org/10.1037/0033-2909.88.3.588>
- Budiman, I., Fujiwara, T., Sato, N., & Pamungkas, D. (2020). Another law in Indonesia: Customary land tenure system coexisting with the state order in Mutis Forest. *Jurnal Manajemen Hutan Tropika*, 26(3), 244–253. <https://doi.org/10.7226/jtfm.26.3.244>
- Chin, W. W. (2022, November). Partial least squares for researcher: An overview and percentage of recent advances using the PLS approach. <https://pdfs.semanticscholar.org/8e84/bce5ea24612e985742402779c438d11b6439.pdf>
- Dinh, T. S., & Pham, T. V. (2020). Solutions to ensure sustainable livelihoods for biodiversity conservation in Bu Gia Map National Park. *Journal of Forestry Science and Technology*, 1, 53–61.
- Dinh, T. S. & Pham, T. V. (2023). Non timber forest products in Cat Tien: Local use and sustainable management. *Jurnal Manajemen Hutan Tropika*, 29(1), 79–87. <https://doi.org/10.7226/jtfm.29.1.79>
- Dunggio, I. & Gunawan, W. (2009). Telaah sejarah kebijakan pengelolaan taman nasional di Indonesia. *Jurnal Analisis Kebijakan Kehutanan*, 6(1), 43–56.
- Faizah, O. A., Suparti, & Hoyyi, A. (2021). Analisis technology acceptance model pada aplikasi platform shopee dengan pendekatan partial laeast square (Studi kasus pada mahasiswa Universitas Diponegoro). *Jurnal*

- Gaussian*, 10(3), 423–434. <https://doi.org/10.14710/j.gauss.v10i3.32802>
- Firnanda, E., Harianto, S. P., Winarno, G. D., Wulandari, C., Dewi, B. S., & Fitriana, Y. R. (2020). Persepsi masyarakat daerah penyangga terhadap fungsi ekologi Taman Nasional Bukit Barisan Selatan. *Jurnal Hutan Tropis*, 9(3), 1–10.
- Fornell, C. & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement errors. *Journal of Marketing Research*, 18(1), 39–50. <https://doi.org/10.2307/3151312>
- Garaika & Darmanah. (2019). *Metodologi penelitian*. Lampung Selatan: CV. Hira Tech.
- Gusmiarti, A. (2020). Penerapan metode structural equation modelling pada analisis tingkat kepuasan mahasiswa PMIPA UII tahun 2018 [thesis]. Yogyakarta: Universitas Islam Indonesia.
- Hair, J. F., Matthew, L. M., Matthews, R. L., & Sarstedt, M. (2017). PLS-SEM or CBS-SEM: Update guidelines on which method to use. *International Journal of Multivariate Data Analysis*, 1(2), 107–123. <https://doi.org/10.1504/IJMDA.2017.087624>
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2014). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115–135. <https://doi.org/10.1007/s11747-014-0403-8>
- Juniarto, T., Negara, P. P. S., & Wahyudi, B. (2021). Pengaruh kinerja pemasok terhadap kinerja rantai pasok menggunakan metode Structural equation modeling (SEM) pada PT Tiga Serangkai. *Integrasi: Jurnal Ilmiah Teknik Industri*, 6(1), 24–31. <https://doi.org/10.32502/js.v6i1.3792>
- Marliana, R. R. (2020). Partial least squares-structural equation modeling pada hubungan antara tingkat kepuasan mahasiswa dan kualitas google classroom berdasarkan metode WebQual 4.0. *Jurnal Matematika, Statistika dan Komputasi*, 16(2), 174–186. <https://doi.org/10.20956/jmsk.v16i2.7851>
- Muhtarom, W., Syairozi, M. I., & Rismayati, R. D. (2022). Analisis citra merek, harga, kualitas produk dan promosi terhadap keputusan pembelian dimediasi minat beli. *Derivatif: Jurnal Manajemen*, 16(1), 36–47.
- Ojwang, A. (2020). *Community-company partnership in forestry in South Africa: An examination of trends*. A report prepared as part of the South Africa Country study for the international collaborative research project steered by IIED: Instruments for sustainable private sector forestry. UK Department for International Development and the European Commission.
- Okthalamo, V., Iskandar, D. A., & Masturiatna, A. (2022). Implementasi program kemitraan konservasi di Taman Nasional Bukit Barisan Selatan. *Jurnal Penelitian Ekosistem Dipterokarpa*, 8(2), 111–124. <https://doi.org/10.20886/jped.2022.8.2.111-124>
- Pangestika, A. W. (2018). Persepsi petani padi terhadap pemanfaatan kartu tani di Desa Kesesi Kecamatan Kesesi Kabupaten Pekalongan [thesis]. Yogyakarta: Muhammadiyah Yogyakarta University.
- Pratiwi, M. F., Indah, P. N., & Yuliati, N. (2022). Analisis pengaruh faktor-faktor keputusan konsumen menggunakan partial least square (PLS) (Studi kasus: Quoka Coffe, Surabaya). *AGROINFO GALUH Jurnal Ilmiah Mahasiswa*, 9(3), 1042–1054. <https://doi.org/10.25157/jimag.v9i3.8106>
- Prayitno, D. E. (2020). Kemitraan konservasi sebagai upaya penyelesaian konflik tenurial dalam pengelolaan kawasan konservasi di Indonesia. *Jurnal Hukum Lingkungan Indonesia*, 6(2), 184–209. <https://doi.org/10.38011/jhli.v6i2.175>
- Purwatiningsih, S. D. (2022). Pemahaman masyarakat sekitar hutan pada informasi konservasi hutan dalam memanfaatkan dan melestarikan hutan Taman Nasional Gunung Halimun Salak. *Jurnal Sosial dan Humaniora*, 6(1), 110–120.
- Putra, Z. (2022). Meningkatkan kinerja organisasi pada sektor lembaga pendidikan tinggi: Analisis multi group dengan PLS-SEM. *Jurnal Bisnis dan Kajian Strategi Manajemen*, 6(1), 1–16. <https://doi.org/10.35308/jbkan.v6i1.4385>
- Qodriyatun, S. N. (2019). Peran dan partisipasi masyarakat dalam pengelolaan kawasan konservasi secara kolaboratif. *Kajian*, 24(1), 41–54.
- Rahayu, N. S., & Dewi, B. S. (2022). Pengembangan potensi wisata alam TNBBS (Studi kasus Resort Balik Bukit). *JOPFE Journal*, 2(1), 1–15.
- Ristianasari, Muljono, P., & Gani, D. S. (2013). Dampak program pemberdayaan model desa konservasi terhadap kemandirian masyarakat: Kasus di Taman nasional Bukit Barisan Selatan Lampung. *Jurnal Penelitian Sosial dan Ekonomi Kehutanan*, 10(3), 173–185. <https://doi.org/10.20886/jpsek.2013.10.3.173-185>
- Sadikin, A. (2021). Penegakan hukum terhadap tindak pidana kehutanan pasca berlakunya Perdirjen KSDAE tentang kemitraan konservasi. *Jurnal Bina Hukum Lingkungan*, 5(2), 215–236.
- Sarstedt, M., & Cheah, J. H. (2019). Partial least square structural equation modeling using SmartPLS: A Software review. *Journal of Marketing Analytics*, 7(3), 196–202. <https://doi.org/10.1057/s41270-019-00058-3>
- Sarstedt, M., Ringle, C. M., & Hair, J. F. (2021). Partial least square structural equation modeling. In C. Homburg, M.

- Klarmann, & A. E. Vomberg (Eds), *Handbook of market research*. Springer, Cham. https://doi.org/10.1007/978-3-319-05542-8_15-2
- Sinthumule, N. I. (2021). An analysis of communities' attitudes towards wetlands and implications for sustainability. *Global Ecology and Conservation*, 27, e01604. <https://doi.org/10.1016/j.gecco.2021.e01604>
- Suhardjito, D., & Wulandari, C. (2019). A reflection of social forestry in 2019: Towards inclusive and collaborative government approaches. *Journal of Forest and Society*, 3(1), 137–140. <https://doi.org/10.24259/fs.v3i1.6099>
- Suyono, R., Harahap, H., & Atthorick, A. T. (2017). Persepsi masyarakat Desa Lae Hole II dalam pengelolaan Taman Wisata Alam (TWA) Sicike-Cike. *Jurnal Jeumpa*, 4(1), 67–79.
- Tegar, W. B., & Putra, S. (2022). Problems, common beliefs and procedures on the use of partial least squares structural equation modeling in business research. *South Asian Journal of Social Studies and economics*, 14(1), 1–20. <https://doi.org/10.9734/sajsse/2022/v14i130367>
- Ticktin, T. (2004). The ecological implications of harvesting non-timber forest products. *Journal of Applied Ecology*, 41, 11–21. <https://doi.org/10.1111/j.1365-2664.2004.00859.x>
- Wahyuni, A. S. (2022). Evaluasi keberhasilan penerapan e-learning UIN Suska Riau menggunakan model delon dan mclean dengan pendekatan structural equation modeling (SEM) [thesis]. Pekanbaru: Sultan Syarif Kasim Riau State Islamic University.
- Winarno, G. D., Harianto, S. P., Safei, R., Charles, Y., & Sutarno. (2019). *Valuasi jasa lingkungan berbasis masyarakat di desa sekitar Taman Nasional Bukit Barisan Selatan Provinsi Lampung*. Bandar Lampung: Pusaka Media
- Wiratno. (2018). Sepuluh cara baru kelola kawasan konservasi di Indonesia: Membangun organisasi pembelajar. Jakarta. Direktorat Jenderal KSDAE. Kementerian Lingkungan Hidup dan Kehutanan.
- Wulandari, C., Bakri, S. Riniarti, M., & Supriadi. (2021a). Fostering the sustainability of community forestry program: Case study In Lampung-Sumatra. *Forestry Ideas*, 27(1), 210–232.
- Wulandari, C., Budiono, P., & Iswandar, D. (2021b). Importance of social characteristic of community to support restoration program in protection forest. *Indonesian Journal of Forestry Research*, 8(2), 173–186.

● 8% Overall Similarity

Top sources found in the following databases:

- 3% Internet database
- Crossref database
- 6% Submitted Works database
- 5% Publications database
- Crossref Posted Content database

TOP SOURCES

The sources with the highest number of matches within the submission. Overlapping sources will not be displayed.

1	Institut Pertanian Bogor on 2022-01-13	3%
	Submitted works	
2	Universitas Negeri Surabaya The State University of Surabaya on 2023-...	<1%
	Submitted works	
3	ijssrr.com	<1%
	Internet	
4	Postgraduate Institute of Management on 2023-01-30	<1%
	Submitted works	
5	Universitas Jenderal Soedirman on 2019-05-08	<1%
	Submitted works	
6	Destia Novasari, Christine Wulandari, Sugeng P. Harianto, Indra Gumay...	<1%
	Crossref	
7	Pontificia Universidad Catolica del Peru on 2023-03-27	<1%
	Submitted works	
8	ejournal.warmadewa.ac.id	<1%
	Internet	

- 9 **Hendra Gunawan, Irma Yeny, Endang Karlina, Sri Suharti et al. "Integrat...** <1%
Crossref
- 10 **Institut Pertanian Bogor on 2018-10-24** <1%
Submitted works
- 11 **Ya-Yueh Shih, Kwoting Fang. "Effects of network quality attributes on c...** <1%
Crossref
- 12 **eudl.eu** <1%
Internet
- 13 **jurnal.ugm.ac.id** <1%
Internet
- 14 **researchgate.net** <1%
Internet
- 15 **I A Ratmoko, D Budianta, R Ridho, E Wildayana, Z Idrus, N Nuryamsasni...** <1%
Crossref
- 16 **University of St Andrews on 2023-08-21** <1%
Submitted works
- 17 **journal.unj.ac.id** <1%
Internet
- 18 **repositorybaru.stieykpn.ac.id** <1%
Internet
- 19 **Duryat, Santori, Trio Santoso, Melya Riniarti, Rikha Aryanie Surya. "Bio...** <1%
Crossref
- 20 **Nur Anisa Eka Ariyani, Kismartini. "Implementation Of Conservation P...** <1%
Crossref

21	Universitas Andalas on 2019-01-18 Submitted works	<1%
22	jppipa.unram.ac.id Internet	<1%
23	scilit.net Internet	<1%

● Excluded from Similarity Report

- Bibliographic material
- Cited material
- Manually excluded sources
- Quoted material
- Small Matches (Less than 10 words)

EXCLUDED SOURCES

journal.ipb.ac.id

Internet

68%

doaj.org

Internet

8%