

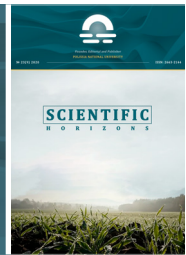
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Dimensions of perceived value in the Honduran wood industry

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Abstract. Forestry firms in Honduras exhibit significant weaknesses in value creation. This paper aimed to identify how economic, social, and shared value are perceived within Honduras's secondary broadleaf-wood industry, and to propose measures to strengthen value creation in the sector. To this end, the analysis of contingency tables, Pearson's chi-square test, Cramer's V coefficient, and the Mann-Whitney U test (with effect size estimates) were applied to survey data from 17 hardwood processing enterprises in four forest regions of Honduras. The 44 indicators were grouped into three categorical variables (B1, C1, C3) and three quantitative variables (EV, SV, ShV), and reliability and validity were assessed using Cronbach's alpha, HTMT, and Kendall's τ_b correlations. The effect size was very large ($V = 0.78$) for the EV–SV pair, where a significant association was found, $\chi^2(4) = 22.00$, $p = 0.0002$. For the SV–ShV pair, the association was also significant ($\chi^2(6) = 13.00$, $p = 0.041$) with an effect size of $V = 0.60$. This indicated a close relationship between economic, social, and shared value within the study sample. These constraints negatively affect the implementation of marketing practices, quality control, traceability, and market access. Also, the absence of seals of origin reduces competitiveness in both national and international markets. To address these limitations, the authors proposed strengthening the use of local raw materials to improve product quality, expanding marketing knowledge, training personnel, and enhancing quality-control systems. The results obtained can serve as a basis for developing national training programmes aimed at strengthening the entrepreneurial and technical capacity of the forestry sector and for incorporating their content into environmental licensing processes

Keywords: shared value; economic value; social value; environmental value; secondary forest industry; broadleaved wood

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INTRODUCTION

There are approximately 200 timber companies and more than 7,000 carpentry workshops in Honduras (Forest Conservation Institute, 2022), divided in four forest regions that work with 48 tree species, eleven of which account for 94% of the total processed volume. Mahogany (*Swietenia macrophylla* King) is particularly important, representing 47.8% of total exports (Forest Conservation Institute, 2023). Despite the sector's relevance, secondary forestry small and medium-sized enterprises (SMEs) in Honduras have not reached a level of development comparable to that of the primary industry mainly due to strong deforestation that has climatic, social, and economic consequences that must be alleviated (OIMT, 2025). Thus, in 2006, the International Tropical Timber Agreement was signed to combat deforestation and protect broadleaved forests that cover 4,160,619 hectares, equivalent to 72.37% of Honduras's total forest, including mixed forests (Forest Conservation Institute, 2022). A study by S.A. Saravia-Maldonado *et al.* (2024) of the Talguá River watershed in Honduras confirmed that human-induced pressure on forest resources directly leads to a decline in water quality and the degradation of ecosystem services that support local communities. But these measures are not enough, as they are unaware of the timber industry's perceived value. The perceived value in the industry can be fostered by applying educational policies focused on increasing empowerment, legitimacy, and social learning in the labour force.

As R. Reyes *et al.* (2001) noted, the Honduran secondary forestry industry suffers from limited training in administrative and marketing areas, which undermines business performance and contributes to stagnation in the acquisition of technical skills and in the development of export capacity. According to A. Rodríguez-Zunino & R. Kometter (2012), informality remains one of the sector's main challenges, as many SMEs are not registered on official commercial records. This situation results in small-scale production, inadequate machinery, deficiencies in quality control, the absence of specialised training and technical assistance, and reduced managerial capacity among entrepreneurs. Y. Sun *et al.* (2025) showed that the secondary forestry industry's lack of horizontal innovation (product diversification) combined with vertical upgrading (quality enhancement) negatively affects export performance. As a result, M. Shang *et al.* (2025) found that the secondary forestry industry in Honduras needs to enhance technical production and management capabilities, which positively affects wood product quality and competitiveness, in order to impulse sustainable human development (Mendieta, 2010).

Along with the problems of informality and inefficient resource management, T.W. Gillespie *et al.* (2000) reported that tropical timber forests in Central America have been reduced to less than 0.1% of their original

extension on the Pacific side, due to excessive logging and economic and administrative impediments that are limiting the development of the forestry sector in Guatemala, Nicaragua and Costa Rica, including the deficient business advisory services for the forest timber sector in Central America. Applied to the Honduran forest, the concept of value in the business environment can be understood from a triple perspective: a) economic value, when financial benefit is generated (Riva & García, 2018); b) social value, if there is a positive impact on society (Menghwar & Daood, 2021) and c) environmental value, when industrial activity improves the environment (Hernández-Perlines & Ibarra Cisneros, 2018). Thus, according to N. Díaz & C.A. Castaño (2013), shared value is formed by the interaction of the economic, social and environmental values, and defines products, markets and productivity in the value chain. As a result, H. Niccolas Morales *et al.* (2013) argued that shared value develops local clusters that benefit society, as it lays the groundwork for a wood-based bioeconomy (Hug *et al.*, 2024).

As E. Fernández (2012) noted, value creation is closely related to business ethics and, above all, to corporate social responsibility, which C. D'Souza *et al.* (2024) described as emphasising ethics as a central aspect that shapes the social impact of commercial activity, where cross-laminated timber, the most widely used mass timber product, has been increasingly used as an alternative to traditional building materials due to its lower environmental impact (Bremner *et al.*, 2026). G.J. Ceballos & D.M. Chaparro (2023) described ethical leadership as an engine that promotes circular economy practices within shared value, thus creating a sustainable business environment in which wood is adopted as an alternative to carbon-intensive materials in the construction industry, with the support of public administration (Saravia-Maldonado *et al.*, 2024; Lobensteiner & Losacker, 2026). L. Blümel *et al.* (2023) also emphasised that a successful transition of supply chains to a circular bioeconomy requires consideration not only of economic, social, and environmental factors, but also of infrastructure barriers, which are often overlooked by traditional models of strategic analysis.

P.C.M. Neessen *et al.* (2021) showed that the creation of social value leads companies to incorporate social externalities into their business model in order to maximise their profitability and have a social impact. Thus, according to B. Mei *et al.* (2024), in the forestry industry it is essential to enhance profitability and social impact in order to improve environmental conditions and corporate image, which in turn affects financial results. A. Crane *et al.* (2014) noted that this impact is maximised when all stakeholders (internal and external) of the organisation are satisfied, especially customers, mainly if forests are sustainably managed, as wood modifications are non-fossil and

non-toxic, so circular strategies are incorporated by increasing wood reuse (Van den Auwelant *et al.*, 2025; Hosseini *et al.*, 2025). In short, the social value generated by the forestry industry is combined with environmental value necessary to preserve the ecosystem, which in turn influences socio-economic aspects related to quality of life and the creation of wealth that is sustainable over time.

The goal of this research was to analyse the secondary forestry industry that uses broadleaved wood in Honduras to propose strategies to create value in the industry. Perceived value in private SMEs has evolved from a profit-focused perspective to the creation of

multidimensional models that integrate social and environmental dimensions.

MATERIALS AND METHODS

Data were collected through interviews with 17 secondary broadleaved-wood industries located across the four forest regions of Honduras (Table 1). All ethical requirements were followed during the survey (Good-year *et al.*, 2007). For confidentiality reasons linked to environmental impact (4 indicators), job security (3 indicators) and reputation (3 indicators) where no information could not be obtained, the original set of 54 indicators was reduced to 44.

Table 1. Forest regions and the number of secondary broadleaf wood industries in Honduras

Forest Region	Number of secondary industries	Geographical location	Population
Comayagua	1	La Libertad, Comayagua	28,906
North-West	7	San Pedro Sula, Choloma	1,040,063
Atlantis	8	La Ceiba, Esparta, San Francisco	250,310
Aguan Valley	1	Olancho	31,843
Total	17		1,351,122

Source: compiled by the authors based on the Forest Conservation Institute (2023), and the National Institute of Statistics of Honduras (n.d.)

These indicators were grouped according to their contribution to value creation and the measurement approach used, resulting in three categorical variables (B1, C1, C3), each with differentiated levels or conditions (Table 2), and three quantitative variables: Economic Value (EV), Social Value (SV), and Shared Value (ShV), all measured using discrete low-variability ordinal scales (Table 3). Environmental value showed no variability in the dataset and was therefore excluded from inferential analysis. Since all cases reported the same value, it was not possible to apply statistical tests or estimate associations with other dimensions. Therefore, the environmental dimension reflects only a homogeneous perception within the set of companies studied and does not allow for comparative or explanatory inferences. The environmental results described only a uniform pattern of response, with no inferential support. Given that the normality tests (Shapiro-Wilk) indicated

$p < 0.05$ in all variables and that EV, SV and ShV present ordinal scales with repeated values, non-parametric methods suitable for small samples and discrete data were chosen. Thus, the Mann-Whitney U test was used to compare independent groups, Kendall's τ -b for ties in correlations, χ^2 for contingency analysis, and Cramer's V to evaluate associations and effect sizes. The study, of an exploratory-descriptive nature and based on the complete universe of secondary broadleaf wood industries in Honduras ($N = 17$), does not pursue broad population inferences, but rather to characterise the sector and support the formulation of strategies. The selected methods are robust in contexts of low sampling power and were complemented with VS MPR to strengthen interpretation. Finally, it is explicitly recognised that the results are associative and exploratory, and that the sample size limits generalisation without compromising the relevance of the analyses applied.

Table 2. Operational definitions of the categorical variables B1, C1, and C3

Variable	Definition	Level	Description of the level
B1 – Business formalisation	Classifies SMEs according to their degree of administrative and legal formalisation.	B1 = 01	Low formalisation: SMEs not registered in official commercial records, lacking updated forest permits, or operating with informal accounting practices.
		B1 = 02	High formalisation: SMEs legally registered, with valid forest permits, structured accounting, and compliance with administrative regulations.
C1 – Technical and productive capacity	Differentiates SMEs based on their level of equipment, process standardisation, and technical skills.	C1 = 01	Basic capacity: limited machinery, predominantly manual processes, low standardisation, and minimal technical training.
		C1 = 02	Advanced capacity: semiautomated or automated machinery, standardised processes, quality control, and trained personnel.

Table 2. Continued

Variable	Definition	Level	Description of the level
C3 – Market orientation	Classifies SMEs according to their primary market focus and commercial diversification.	C3 = 01	Local market: SMEs selling mainly to local or regional markets with low commercial diversification.
		C3 = 02	External or diversified market: SMEs exporting or selling to large national buyers, distributors, or export-oriented channels.

Source: compiled by the authors

Table 3. Operational definitions of the quantitative variables EV, SV, and ShV

Variable	Definition	Scale type	Description of measurement
EV	Measures the extent to which SMEs generate or prioritise economic outcomes derived from their activities.	Discrete quantitative scale	Scores reflect the degree of economic performance, efficiency, and financial contribution associated with the firm's operations. Higher scores indicate stronger economic value creation.
SV	Assesses the importance assigned by SMEs to social outcomes, including community wellbeing, labour conditions, and social cohesion.	Discrete quantitative scale	Scores represent the level of commitment to socially oriented practices. Higher scores indicate greater prioritisation of social benefits and collective wellbeing.
ShV	Captures the degree to which SMEs integrate economic and social objectives simultaneously, aligning business performance with community benefits.	Discrete quantitative scale	Scores reflect the firm's capacity to generate mutual benefits for business and society. Higher scores indicate stronger alignment between economic gains and social impact.

Source: compiled by the authors

The EV, SV, ShV, and ENV dimensions were constructed from 44 indicators grouped by their contribution to economic, social, shared, and environmental value. Each indicator was scored on a discrete ordinal scale (min 1, max 3), and the final score for each dimension was the sum of its associated indicators. As a result, EV ranged from 8 to 12, SV from 27 to 32, and ShV from 8 to 11. The ENV dimension showed no variability, as all firms reported the same level of environmental compliance, which reflects the homogeneity of regulatory requirements in the Honduran forestry sector. For this reason, ENV was excluded from inferential analysis. The use of ordinal summed scales is consistent with exploratory research in small industrial populations and supports the application of non-parametric statistical methods.

To evaluate the association between the categorical variables, a contingency table analysis was performed, complemented by Pearson's chi-square test and Cramer's V as a measure of effect size. Before selecting the statistical tests, the normality assumption was evaluated using the Shapiro-Wilk test due to the small sample size. In all cases, the results showed p-values 0.05, indicating that normality of the data distribution could not be assumed. The presence of repeated values confirmed the discrete and non-normal nature of the dependent variables. Due to the lack of normality and the small sample size, the Mann-Whitney U test was used as a nonparametric test, as it is suitable for comparing differences in quantitative variables between two independent groups. Among the available categorical variables, C1 was selected as the grouping factor because it showed a more balanced distribution across its levels (01 and 02), thereby improving the stability

of the analysis compared to other variables with very unequal group sizes. For each dependent variable (EV, SV, ShV), the distributions between the two levels of C1 were compared.

Given the ordinal nature of the variables and the small sample size ($N = 17$), reliability and validity were assessed using methods appropriate for discrete data. Internal consistency was evaluated using Cronbach's α . Although the final dataset included 44 indicators, each construct (EV, SV, ShV) was measured using multiple items, which allowed the computation of Cronbach's α and HTMT ratios. Discriminant validity was assessed using the Heterotrait-Monotrait ratio (HTMT), computed from the correlation matrix. Associations between the three quantitative variables were evaluated using Kendall's τ -b, which is appropriate for ordinal data with ties. Group comparisons across levels of C1 (Technical and Productive Capacity) were conducted using the Mann-Whitney U test. Effect sizes were estimated using rank-biserial correlation and the Vovk-Sellke Maximum p-Ratio (VS-MPR). Because ShV showed zero variance in Group 1, the Mann-Whitney test could not be computed for this variable. All analyses were conducted using the statistical software JASP version 0.96.0, and Jamovi 2.7.24.0.

RESULTS AND DISCUSSION

Table 4 presented descriptive statistics by group for the SV, EV, and ShV variables, comparing levels of the C1 factor. A consistent pattern is observed across all three variables: Group 2 showed higher mean values and wider ranges than Group 1, indicating systematic differences between the two levels.

Table 4. Group descriptives

	Group	N	Mean	SD	SE	CV	Mean rank	Sum rank
SV	1	8	28.000	1.069	.378	.038	6.250	50
	2	9	29.667	1.323	.441	.045	11.444	103
EV	1	8	9.500	1.604	.567	.169	5.250	42
	2	9	11.667	.500	.167	.043	12.333	111
ShV	1	8	8.000	.000	.000	.000	6.000	48
	2	9	9.222	1.093	.364	.119	11.667	105

Note: SD – Standard Deviation, SE – Standard Error, CV – Coefficient of Variation

Source: compiled by the authors

Regarding SV, Group 1 obtained a mean of 28.00, while Group 2 had a higher mean of 29.667. Average ranks were also higher in Group 2 than in Group 1, suggesting that Group 2 participants consistently scored higher on SV. In terms of EV, Group 1 had a mean of 9.500, compared with a significantly higher mean in Group 2, which was 11.667. The mid-ranges clearly reflect this difference (5.250 in Group 1 vs 12.333 in Group 2), indicating that Group 2 consistently ranks highest in EV. Finally, in ShV, Group 1 obtained an

average of 8.000, while Group 2 reached an average of 9.222. The average range was also higher in Group 2 than in Group 1, indicating a clear trend towards higher shared values in the second group. In addition to the analysis of descriptive variables, a contingency table analysis (Table 5) was performed to evaluate the association between the categorised variables Environmental Value (ENV), EV, SV, and ShV. For each pair of variables, Pearson's chi-square test was applied, complemented by Cramer's V statistic as a measure of effect size.

Table 5 Contingency tables and results for each pair of dimensions

Pair of dimensions	Contingence table	Pearson's χ^2	df	p	Cramer's V
ENV × EV	07: (08 = 4, 11 = 8, 12 = 6)	0	0	1.000	-
ENV × SV	07: (27 = 4, 29 = 12, 32 = 2)	0	0	1.000	-
EV × SV	08: (27 = 4); 11: (29 = 8); 12: (29 = 4, 32 = 2)	22.00	4	.0002	.78
SV × ShV	27: (08 = 4); 29: (08 = 8, 09 = 2, 10 = 2); 32: (10 = 1, 11 = 1)	13.00	6	.041	.60

Note: the ENV variable did not present variability, so it was not possible to evaluate inferential associations

Source: compiled by the authors

The analysis of each variable pair showed no evidence of association between ENV and either EV or SV. For both pairs (ENV-EV and ENV-SV), the chi-square statistic was $\chi^2(0) = 0$ with $p = 1.000$, indicating identical distributions across categories and complete independence between the variables. Because the contingency tables had no degrees of freedom, Cramer's V could not be computed. These results indicate that ENV, EV, and SV operate as independent dimensions within the response pattern. The absence of variability in ENV and the parallel distributions observed suggest that respondents conceptualise ENV, EV and SV as separate constructs, with no perceptual overlap or mutual reinforcement. This structural independence has practical implications. It suggests that decisions or attitudes related to environmental sustainability, economic performance, and social cohesion are compartmentalised rather than integrated. Consequently, interventions or policies aiming to promote sustainable development

cannot assume that strengthening one dimension will automatically influence the others.

In the EV and SV pair, a significant association was observed, $\chi^2(4) = 22.00$, $p = .0002$. The effect size was very large ($V = .78$), indicating a strong relationship between the two variables. Finally, in the SV and ShV pair, the relationship was also significant, $\chi^2(6) = 13.00$, $p = .041$. The effect size was large ($V = .60$), suggesting a substantial association between the variables: when SV increases, so does ShV. This result is consistent with models that position SV as an antecedent of collective value. The environmental dimension, as it lacks variability, is outside the model. This may be due to a homogeneous perception of environmental performance or to limitations of the measuring instrument. Internal consistency, as measured by Cronbach's alpha, was $\alpha = .862$, indicating high reliability (Table 6). Distinction validity was confirmed by HTMT coefficients ranging from .591 to .798 – all values below the threshold of .85 (Table 7).

Table 6. Reliability and convergence validity

Construct	Cronbach's α	AVE	Interpretation
EV-SV-ShV (3item scale)	.862	1.00	High internal consistency

Source: compiled by authors

Table 7. Discriminant validity (HTMT ratios)

Pair	HTMT	Interpretation
EV – SV	.798	Acceptable (< .85)
EV – ShV	.591	Acceptable
SV – ShV	.704	Acceptable

Source: compiled by authors

The Shapiro-Wilk test confirmed that the EV distribution deviated from the normal distribution ($W = .868$, $p = .020$), and the Brown-Forsythe test revealed heterogeneity of variances across groups ($F(1, 15) = 43.24$, $p < .001$), confirming the appropriateness of using the Mann-Whitney U test (Table 8). For the ShV variable, this test could not be applied due to zero variance in Group 1 (all values are identical), which makes it impossible to rank the data. The Mann-Whitney test showed significant differences in EV between C1 levels

($U = 6.000$, $p = .002$). The effect size, estimated by biserial correlation of ranges, was very large ($r = .833$), indicating that the C1 = 02 group had significantly higher scores than the C1 = 01 group. The VS-MPR index showed that the evidence in favour of the alternative hypothesis is more than 25 times greater than that in favour of the null hypothesis. The results suggest that the C1 factor ("Technical and productive capacity") has a substantive impact on how people prioritise economic value obtained in the forestry industry in Honduras.

Table 8. Mann-Whitney U test

	U	p	VS-MPR	Rank-biserial correlation	SE rank-biserial correlation
SV	14.000	.015	5.977	.611	.281
EV	6.000	.002	25.189	.833	.281

Note: VS-MPR – Vovk-Sellke Maximum p-Ratio

Source: compiled by authors

Regarding SV, the Mann-Whitney U test indicated significant differences in SV scores between the two levels of factor C1 ($U = 14.000$, $p = .015$). The effect size, estimated by biserial correlation of ranges, was large ($r = .611$), suggesting that the C1 = 02 group had consistently higher SV scores than the C1 = 01 group. The VS-MPR index showed that the evidence in favour of the alternative hypothesis is approximately 6 times greater than that in favour of the null hypothesis. The results suggest that the C1 factor ("Technical and productive capacity") has a substantive impact on how people prioritise EV and SV, implying that groups defined by this factor do not respond similarly to initiatives aimed at collective well-being. In practical terms, this means

that any intervention, programme, or policy that seeks strengthening socially and economically oriented attitudes or behaviours should differentiate its strategies according to the level of C1, since both groups start from different sensitivities. The associations between value dimensions were calculated using Kendall's τ_b correlations (Table 9) that revealed strong and statistically significant associations between EV and SV and between EV and ShV. The association between SV and ShV was moderate but significant ($\tau_b = .583$, $p = .011$) (Table 8). These results indicate that the three dimensions form a coherent value system in which increases in one dimension tend to be accompanied by increases in the others.

Table 9. Kendall's τ_b correlation matrix

		EV	SV	ShV
EV	τ_b	–		
	p-value	–		
SV	τ_b	.791	–	
	p-value	<.001	–	
ShV	τ_b	.776	.583	–
	p-value	<.001	.011	–

Source: compiled by authors

In short, any public or private-public policy applied to the forestry industry in Honduras must focus on strengthening socially and economically oriented environmental attitudes towards forests, and it should differentiate its strategies by the level of technical and productive capacity achieved. It is therefore necessary to launch environmental awareness campaigns by Honduran public administrations at their different levels (local, regional, and national) to preserve a natural wealth, much of which is currently at risk of ecological damage. K. Rusanen *et al.* (2024) observed that sustainable value creation in the forest sector has been studied from multiple approaches, but with a clear predominance of the economic dimension, while environmental and social values remain underdeveloped; they further noted that the literature addresses the issue mainly at the conceptual level, highlighting circularity, but with little empirical evidence, and that the most widely used theoretical frameworks fail to fully capture the needs of a sustainable transition. This imbalance mirrors the pattern observed in the present study: among the three value dimensions examined, EV and SV emerged as statistically robust and strongly associated, whereas ENV showed no variability and could not be examined inferentially, reinforcing the broader concern that environmental value remains comparatively underexplored in empirical forest-value research.

To enrich the analysis, I. Grundel *et al.* (2022) argued that the Landscape Resource Analysis enables the identification of tangible and intangible values in forest areas through collaborative processes that facilitate dialogue among actors with potentially conflicting interests. As a result, social learning is promoted, and local perspectives, normally absent from traditional forest planning, are made visible. M. Arena *et al.* (2024) described how innovation ecosystems generate ShV through a model that integrates inputs, internal processes, and outputs: inputs include actors, structure, relationships, and governance, which shape the ecosystem's diversity and potential; internal processes encompass strategies and formal and informal mechanisms with varying levels of openness. The same authors revealed key relationships between these elements and highlight how heterogeneity and governance influence the speed, intensity, and resilience of the value created. This four-sphere structure broadly parallels the tripartite EV–SV–ShV model used in the present study, although M. Arena's *et al.* (2024) explicit "innovative" output dimension has no direct counterpart in the indicators applied here – a gap that future instruments could address. Linked to values, C. D'Souza *et al.* (2024) described Corporate Social Responsibility as an ethical commitment grounded in values and a business strategy that can drive innovation and sustainable value, especially regarding environmental issues. Alongside the fight against environmental deterioration, M. Usman *et al.* (2026) showed that technological and productive

capacities affect the economic performance of companies through green innovation, while J.I. Dorrego-Viera *et al.* (2026) linked similar capacities to the forest-based bioeconomy.

The results provided descriptive and associative evidence regarding the relationships among these value dimensions and the differences observed between groups. Given the small sample size and the ordinal nature of the data, these results should be interpreted as indicative of systematic differences in the observed indicators rather than as evidence of causal effects. These positive associations among EV, SV, and ShV lend indirect empirical support to the conceptual integration proposed by D. D'Amato & J. Korhonen (2021), who argued that the union of these values is necessary to move towards an economy based on renewable processes that respect biodiversity, meaning that the green economy, circular economy, and the bioeconomy come together – though, as K. Laktuka *et al.* (2024) added, only if knowledge-based strategies increase the value added in forests' products and services offered to the market. This pattern reflects co-variation among the measured indicators but does not imply directional or causal relationships. As noted above, the absence of variability in ENV precludes any inferential conclusions about this dimension.

Overall, the findings indicate that technical and productive capacity (C1) is associated with differences in the economic and social value indicators reported by firms. However, due to the exploratory nature of the study, the small sample size, and the use of non-parametric methods, the results should be understood as descriptive patterns within the studied population rather than generalisable or causal conclusions. The associations identified among EV, SV, and ShV highlighted the interrelated behaviour of these dimensions in the dataset, but further research with larger samples would be required to examine these relationships in greater depth.

CONCLUSIONS

The central implication of this study is that technical and productive capacity, rather than compliance with environmental requirements alone, appears to be the factor most closely associated with how Honduran secondary forestry firms create economic and social value. This suggests that current sector policy, which is largely oriented towards environmental licensing, audits, and monitoring, may be overlooking the lever that most directly shapes value creation on the ground. Given the exploratory nature of the study and its small sample size, these findings should be read as an indication of where policy attention could be usefully redirected, rather than as definitive proof of what drives value creation across the sector. The secondary broadleaf forestry industry in Honduras currently prioritises environmental compliance but pays comparatively little

attention to the business indicators that drive economic value and to the corporate social responsibility practices that build social value as a bridge towards shared value. Addressing this gap does not require abandoning environmental requirements, but complementing them with support for local raw material use, product quality, marketing knowledge, personnel training, and quality control – the areas most closely linked to the value dimensions found to be strongest in this sample.

Based on these findings, the following recommendations are proposed. National training programmes should be developed to strengthen the entrepreneurial and technical capacities of forest industries, integrating this content into environmental licensing processes. Complementary to this, the regulatory framework for traceability should be updated and strengthened, promoting digital tracking systems and seals of origin that guarantee the legality and sustainability of forest products, complemented by fiscal, financial, and technological incentives for microenterprises and cooperatives that use regional raw materials and improve their production processes. Inter-institutional coordination between the Forest Conservation Institute and municipalities should also be optimised through integrated digital platforms for audits, procedures, and monitoring, alongside a national forestry marketing strategy that strengthens digital marketing, product design, and market access to position Honduran products nationally and internationally. Finally, public-private

partnerships for innovation should be promoted through applied research, international certifications, and technological improvements in broadleaved wood transformation, together with a national system of sustainability and shared value indicators to measure the sector's economic, social, and environmental performance and support evidence-based decision-making.

Together, these recommendations seek to strengthen the competitiveness of the Honduran forestry industry, promote the sustainable use of natural resources, and generate tangible benefits for local communities, thereby contributing to a more balanced and resilient development model that benefits society. As future research, the study will be expanded to other countries, allowing to observe whether the same problems occur in other forestry-based environments, especially in Central America. Also, future research should expand the sample, refine the measurement of environmental performance, and incorporate longitudinal or comparative designs to broaden the analytical scope.

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CONFLICT OF INTEREST

None.

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Аспекти сприйманої цінності в деревообробній галузі Гондурасу

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Анотація. Лісогосподарські підприємства в Гондурасі демонструють значні недоліки у сфері створення вартості. Мета даної роботи полягала у визначенні того, як економічна, соціальна та спільна цінність сприймаються у галузі переробки листяної деревини Гондурасу, а також у розробці пропозицій щодо заходів для посилення створення вартості в цьому секторі. З цією метою до даних опитування 17 підприємств з переробки твердої деревини у чотирьох лісових регіонах Гондурасу було застосовано аналіз таблиць співвідношень, критерій хі-квадрат Пірсона, коефіцієнт V Крамера та U-критерій Манна-Уїтні (з оцінками розміру ефекту). 44 показники було згруповано у три категоріальні змінні (B1, C1, C3) та три кількісні змінні (EV, SV, ShV), а надійність і валідність оцінювали за допомогою коефіцієнта альфа Кронбаха, HTMT та кореляцій tb Кендалла. Розмір ефекту виявився дуже великим ($V = 0,78$) для пари EV–SV, де було зафіксовано значущий зв'язок, $\chi^2(4) = 22,00$, $p = 0,0002$. У парі SV–ShV зв'язок також був значущим ($\chi^2(6) = 13,00$, $p = 0,041$) з розміром ефекту ($V = 0,60$). Це вказало на тісний взаємозв'язок між економічною, соціальною та спільною цінністю в межах досліджуваної вибірки. Підприємства лісової галузі Гондурасу стикаються зі структурними слабкостями, пов'язаними з вирубкою лісів, неформальністю, технічним застаріванням та обмеженим рівнем освіти. Ці обмеження негативно впливають на впровадження маркетингових практик, контроль якості, простежуваність та доступ до ринку. Крім того, відсутність знаків походження знижує конкурентоспроможність як на національних, так і на міжнародних ринках. Для усунення цих обмежень автори запропонували активізувати використання місцевої сировини з метою підвищення якості продукції, розширити знання в галузі маркетингу, провести навчання персоналу та вдосконалити системи контролю якості. Отримані результати можуть слугувати основою для розробки національних навчальних програм, спрямованих на зміцнення підприємницького та технічного потенціалу лісового сектору, а також для включення їхнього змісту до процесів екологічного ліцензування.

Ключові слова: спільна цінність; економічна цінність; соціальна цінність; екологічна цінність; вторинна лісова промисловість; листяна деревина