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Sustainable Physical Resources and SME Marketing Performance: The Mediating Roles of Value Co-Creation and Pareto Sales Network in the Silk Industry

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Abstract— *This study aims to develop a marketing performance model for natural silk weaving Micro, Small, and Medium Enterprises (MSMEs) in South Sulawesi by examining the effects of product orientation, sustainable physical resources, and entrepreneurial orientation on marketing performance, with value co-creation and Pareto sales network as mediating variables. The study employed a quantitative, associative, and cross-sectional survey design. The research was conducted among natural silk weaving MSMEs in Wajo and Bone Regencies, South Sulawesi. From a population of 244 business operators, 142 respondents were selected using proportional random sampling. Data were analyzed using Partial Least Squares–Structural Equation Modeling (PLS-SEM) with SmartPLS. The results show that product orientation, sustainable physical resources, and entrepreneurial orientation have positive and significant effects on marketing performance. Sustainable physical resources also significantly influence value co-creation and Pareto sales network, while product orientation significantly affects value co-creation and entrepreneurial orientation significantly affects Pareto sales network. There is a gap between the MSMEs' internal capabilities and their actual marketing performance. Although MSMEs possess strong product orientation, physical resources, and entrepreneurial orientation, these attributes have not yet fully translated into optimal marketing performance. Therefore, strategic interventions should focus on strengthening value co-creation and reinforcing the Pareto sales network by enhancing personal communication with key customers and optimizing the use of partner networks for market expansion.*

Keywords— Sustainable Physical Resources, Product Orientation, Entrepreneurial Orientation, Value Co-creation, Pareto Sales Network.

I. INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) are independent business entities that play a vital role in labor absorption and contribute significantly to a nation's economic and industrial growth [2], [3]; they are also crucial for maintaining competitiveness and economic sustainability in the modern era [4]. As a developing nation, Indonesia relies on MSMEs as the dominant economic force, with the sector comprising 56.54 million units, representing 99.99% of all national economic actors. These MSMEs contributed 58.05% to the GDP (at current prices) in 2023, a figure that rose to 59.08% in 2024.

The marketing performance of natural silk weaving MSMEs in South Sulawesi remains volatile, despite the products possessing high cultural value, recognition as a distinctive local heritage [5], and status as a strategic global commodity [6]. Empirically, most MSME operators still rely on traditional marketing patterns focused on local markets and direct sales, facing limitations regarding access to broader markets, promotional capabilities, and product quality consistency. This situation results in sluggish sales growth and weak competitiveness, particularly when faced with modern textile products and imported silk fabrics offered at more competitive prices. This phenomenon highlights a gap between the potential value of the products and the actual marketing performance achieved by these MSMEs.

Marketing performance, as a measure of achievement, is also viewed as a concept for gauging the market success attained by a product. This metric serves as an indicator of a business's progress. Furthermore, marketing performance is frequently used to assess the impact of implemented strategies on outcomes such as sales volume, sales growth rates, and market share [7]–[10].

Numerous researchers and marketing experts have employed various approaches to understand marketing performance. A wide range of factors and their influence on marketing performance have been investigated and measured; these include entrepreneurial orientation [11]–[19], which has been shown to have a positive effect on marketing performance. Another variable is product innovation orientation; studies [20]–[24] have concluded that there is a positive influence of product orientation on marketing performance. Recent empirical research has identified additional variables affecting marketing performance, namely value co-creation [25]–[29] and the Pareto sales network [30]. Marketing performance is a topic situated within marketing theory, specifically within the realm of strategic marketing [31].

Substantively, strategic marketing [32] is defined as a market-driven strategy development process that accounts for environmental changes and the need to offer superior customer value. The value co-creation approach examines marketing performance based on the joint ability of the customer and the company to create product value. In contrast, the Pareto sales network approach views marketing performance from the perspective of strategic customer groups, focusing on network breadth and loyalty to the company.

Both the Pareto sales network and value co-creation approaches are appropriate when viewed through the lens of superior customer value. However, the authors take the view that they occupy different positions: value co-creation is process-oriented, whereas the Pareto sales network is outcome-oriented. From a systems approach perspective, integrating several previous research models raises questions regarding inputs; as explained by [33], the fundamental elements or components of a system are input, process, output, and feedback. Resources are required as inputs, while outputs can be extended to encompass impact.

Based on this, the researcher proposes a new input-oriented variable concerning the management of tangible and intangible resources, grounded in the Resource-Based View theory, which acknowledges the importance of resources to a firm's competitive position [34]–[36]. The new variable proposed in this study is "sustainable physical resources," with indicators comprising resource functionality, resource recombinations, and resource creation and decay.

This research is significant for advancing the study of marketing for agribusiness products, specifically natural silk weaving, and understanding the marketing performance of MSMEs. Such understanding is vital for improving community welfare, given the substantial contribution of MSMEs to the economy and their capacity to absorb labor. The central issue addressed in this study is: "How do product orientation, entrepreneurial orientation, sustainable physical resources, value co-creation, and Pareto sales networks enhance the marketing performance of natural silk weaving MSMEs in South Sulawesi?" This study aims to formulate a marketing performance model based on the relationships with these independent variables.

The problem-solving approach in this study involves formulating a marketing performance model for natural silk weaving MSMEs that integrates internal business orientations (product and entrepreneurial orientations), the sustainability of physical resources, value co-creation mechanisms, and the strengthening of strategic sales networks (Pareto sales networks). This approach aims to bridge the gap between the potential value of natural silk products and the actual marketing performance achieved by MSMEs in South Sulawesi.

II. MATERIAL AND METHODS

This study employs a quantitative research approach, proceeding from theory to the presentation of data in numerical form for statistical analysis. In terms of its explanatory level, this is an associative study aimed at determining the influence or relationship between two or more variables. Regarding data collection, it is a survey study conducted on populations, whether large or small, where the data analyzed are derived from samples drawn from those populations to identify relative occurrences, distributions, and inter-variable relationships. Based on the data type, the study utilizes a cross-sectional approach, involving data collection carried out during a specific period. This study was conducted among natural silk weaving MSMEs in South Sulawesi, focusing on the downstream industry hubs of Wajo and Bone Regencies.

The study population consists of all business operators involved in the Bugis silk weaving MSME sector in South Sulawesi, specifically in Wajo and Bone Regencies, totaling 244 individuals. The sample size was determined using the Isaac and Michael sampling table; for a population of 244 individuals and a 95% confidence level, the required sample size is 142. Sampling was conducted using a probability sampling method, ensuring that every element of the population had an equal chance of being

selected. The specific technique employed was proportional random sampling, chosen because the population distribution across the regions was not homogeneous, thereby necessitating a selection process that was proportional to the regional populations. Details regarding the population and sample sizes are presented in the following table:

TABLE 1
POPULATION AND CORE RESEARCH SAMPLE SIZES

No.	Regency	Population (persons)	Proportion (%)	Sample (persons)
1	Wajo	170	69.67	99
2	Bone	45	18.44	26
	Total	**215**	**88.11**	**125**

Source: Calculation results, 2025

The table above shows a total sample size of 142 across two regencies in South Sulawesi. This figure also takes into account the use of Structural Equation Modeling (SEM) via the AMOS software application, as estimating structural models requires a minimum sample size of 100.

III. RESULT AND DISCUSSION

3.1 Result

Hypothesis testing in this study employs the Partial Least Squares (PLS) method. PLS is an alternative analysis method within the framework of variance-based Structural Equation Modeling (SEM). The advantages of this method are that it does not require strict assumptions and allows for estimation using relatively small sample sizes. The software tool used is SmartPLS Version 2, as described below:

3.1.1 Evaluation of the Measurement (Outer) Model

3.1.1.1 Validity Test

An indicator is considered valid if it has a loading factor greater than 0.5 on its intended construct. The SmartPLS output for loading factors yields the following results:

TABLE 2
VALIDITY TEST FOR OBSERVED VARIABLES

Observed Variable	Loading Factor Value	Standard	Remark
X1.1	0.518765	0.5	Valid
X1.2	0.519678	0.5	Valid
X1.3	0.517998	0.5	Valid
X2.1	0.514498	0.5	Valid
X2.2	0.843327	0.5	Valid
X2.3	0.753332	0.5	Valid
X3.1	0.832212	0.5	Valid
X3.2	0.642211	0.5	Valid
X3.3	0.753329	0.5	Valid
X4.1	0.679991	0.5	Valid
X4.2	0.523345	0.5	Valid
X4.3	0.658822	0.5	Valid
X5.1	0.632112	0.5	Valid
X5.2	0.624556	0.5	Valid
X5.3	0.631178	0.5	Valid
Y1.1	0.719088	0.5	Valid
Y1.2	0.752899	0.5	Valid
Y1.3	0.751232	0.5	Valid

Table 2 presents the results of the convergent validity test for the indicators used to measure each research variable. Based on the test results, all indicators yielded loading factor values above 0.50; thus, they meet the criteria established for this study and can be retained for subsequent analysis. These results indicate that each statement maintains a sufficient relationship with the variable it measures.

The obtained loading factor values reveal variations in the strength of the indicators in explaining their respective variables. Indicators X2.2 (resource combination), with a value of 0.843, and X3.1 (risk-taking), with a value of 0.832, exhibit relatively higher loading factor values. This suggests that these two indicators share a stronger relationship with the constructs of Sustainable Physical Resources and Entrepreneurial Orientation compared to some of the other indicators.

Conversely, several indicators show relatively low loading factor values, such as X1.1 (product uniqueness) at 0.519, X1.2 (product novelty) at 0.520, and X1.3 (product originality) at 0.518. Although these values remain above the 0.50 threshold, their proximity to that limit indicates that the contribution of these three indicators to explaining the Product Orientation construct is relatively lower than that of the other indicators. This situation warrants evaluation should the same instrument be used in future research, particularly regarding the clarity of the statements and their alignment with the specific conditions of the natural silk weaving businesses serving as the study's subjects.

Consequently, based on the applied loading factor criteria, all indicators remain suitable for use in further analysis. These results demonstrate that the indicators are indeed linked to the constructs being measured, despite varying levels of contribution. Subsequently, analysis can proceed to the structural model to examine the relationships between variables and test the research hypotheses. In addition to the aforementioned tests, the validity of reflective indicators (observed variables) can also be assessed by examining the correlation between item scores and their corresponding construct scores. Measurement using reflective indicators implies that a change in one indicator within a construct occurs if another indicator within the same construct changes (or is removed from the model). Reflective indicators are suitable for measuring perceptions; therefore, this study employs reflective indicators. The assessment of reflective indicators also requires an analysis of cross-loadings, as follows:

TABLE 3
CROSS-LOADING FACTOR MATRIX FOR EACH OBSERVED VARIABLE

Observed Variable	Product Orientation	Sustainable Physical Resources	Entrepreneurial Orientation	Value Co-Creation	Pareto Sales Network	Marketing Performance
X1.1	0.518765	0.197767	0.192322	0.442567	0.111973	0.178356
X1.2	0.519678	0.2777	0.143211	0.211	0.1199	0.195694
X1.3	0.517998	0.216666	0.155621	0.286759	0.312767	0.156735
X2.1	0.123441	0.514498	0.131211	0.143327	0.111973	0.381167
X2.2	0.216781	0.843327	0.381121	0.153332	0.1199	0.191528
X2.3	0.234452	0.753332	0.191821	0.132212	0.345856	0.192876
X3.1	0.127893	0.119876	0.832212	0.254489	0.223345	0.295629
X3.2	0.1199	0.197767	0.642211	0.278356	0.258822	0.191173
X3.3	0.245856	0.2777	0.753329	0.295694	0.241199	0.1922
X4.1	0.211973	0.216666	0.278323	0.523345	0.296322	0.146663
X4.2	0.219923	0.296529	0.195645	0.658822	0.322535	0.15111
X4.3	0.312232	0.111973	0.156732	0.641199	0.197767	0.130099
X5.1	0.211933	0.254489	0.381178	0.111231	0.846663	0.173221
X5.2	0.1192	0.278356	0.191532	0.119211	0.75111	0.191221
X5.3	0.345211	0.295694	0.192887	0.345267	0.830099	0.154322
Y1.1	0.312454	0.281121	0.241144	0.223121	0.349981	0.581223
Y1.2	0.211765	0.311532	0.296323	0.258189	0.292341	0.591567
Y1.3	0.219977	0.191221	0.322553	0.241122	0.322367	0.791234

Table 3 presents the results of the discriminant validity test using the cross-loading approach. This test was conducted to determine whether each indicator exhibited a higher loading value on its intended construct compared to its loading values on other constructs. Thus, it is possible to assess the extent to which the indicators align more appropriately with their respective constructs.

Based on the results in the table, the loading values for each indicator were higher on their respective constructs than on other constructs. For instance, indicators X1.1, X1.2, and X1.3 showed loading values of 0.519, 0.520, and 0.518, respectively, for the Product Orientation construct; these values exceeded the loadings of the same indicators on other constructs. A similar pattern was observed for indicators associated with other constructs. For example, indicator X5.1 exhibited a loading value of 0.847 on the Pareto Sales Network construct, which was higher than its loading values on other constructs.

These results indicate that each indicator tends to be more strongly associated with its intended construct than with other constructs. This demonstrates adequate separation among the constructs: Product Orientation, Sustainable Physical Resources, Entrepreneurial Orientation, Value Co-Creation, Pareto Sales Network, and Marketing Performance, within the research model. Based on these cross-loading results, the indicators used satisfy the criteria for discriminant validity under the cross-loading approach. These findings complement the prior convergent validity test and confirm that the research instrument provides a sound basis for proceeding to the testing of the structural model and the relationships between variables.

3.1.1.2 Reliability Test

The reliability test is conducted by examining the composite reliability value of the indicator block measuring the construct. Composite reliability results are considered satisfactory if the value exceeds 0.7. The composite reliability values from the output are presented below:

TABLE 4
RELIABILITY TEST USING COMPOSITE RELIABILITY VALUES

Variable	Composite Reliability	Standard	Note
Product Orientation	0.882519	0.7	Reliable
Sustainable Physical Resources	0.782667	0.7	Reliable
Entrepreneurial Orientation	0.895564	0.7	Reliable
Value Co-Creation	0.865659	0.7	Reliable
Pareto Sales Network	0.872321	0.7	Reliable
Marketing Performance	0.792367	0.7	Reliable

The table above shows that the composite reliability values for all constructs exceed 0.7, indicating that all constructs in the estimated model meet the criteria for reliability. The lowest composite reliability value is 0.782667, observed for the "Sustainable Physical Resources" latent variable. Reliability assessment can be further substantiated using Cronbach's Alpha, with SmartPLS Version 2 yielding the following results:

TABLE 5
RELIABILITY TEST USING CRONBACH'S ALPHA VALUES

Variable	Cronbach's Alpha	Standard	Note
Product Orientation	0.869	0.6	Reliable
Sustainable Physical Resources	0.626	0.6	Reliable
Entrepreneurial Orientation	0.833	0.6	Reliable
Value Co-Creation	0.943	0.6	Reliable
Pareto Sales Network	0.876439	0.6	Reliable
Marketing Performance	0.763211	0.6	Reliable

The recommended value is above 0.6, and the table above shows that the Cronbach's Alpha values for all constructs exceed 0.6. The lowest value is 0.626000, observed for the "Sustainable Physical Resources" latent variable. Based on the aforementioned loading factor values, the results can be illustrated as follows:

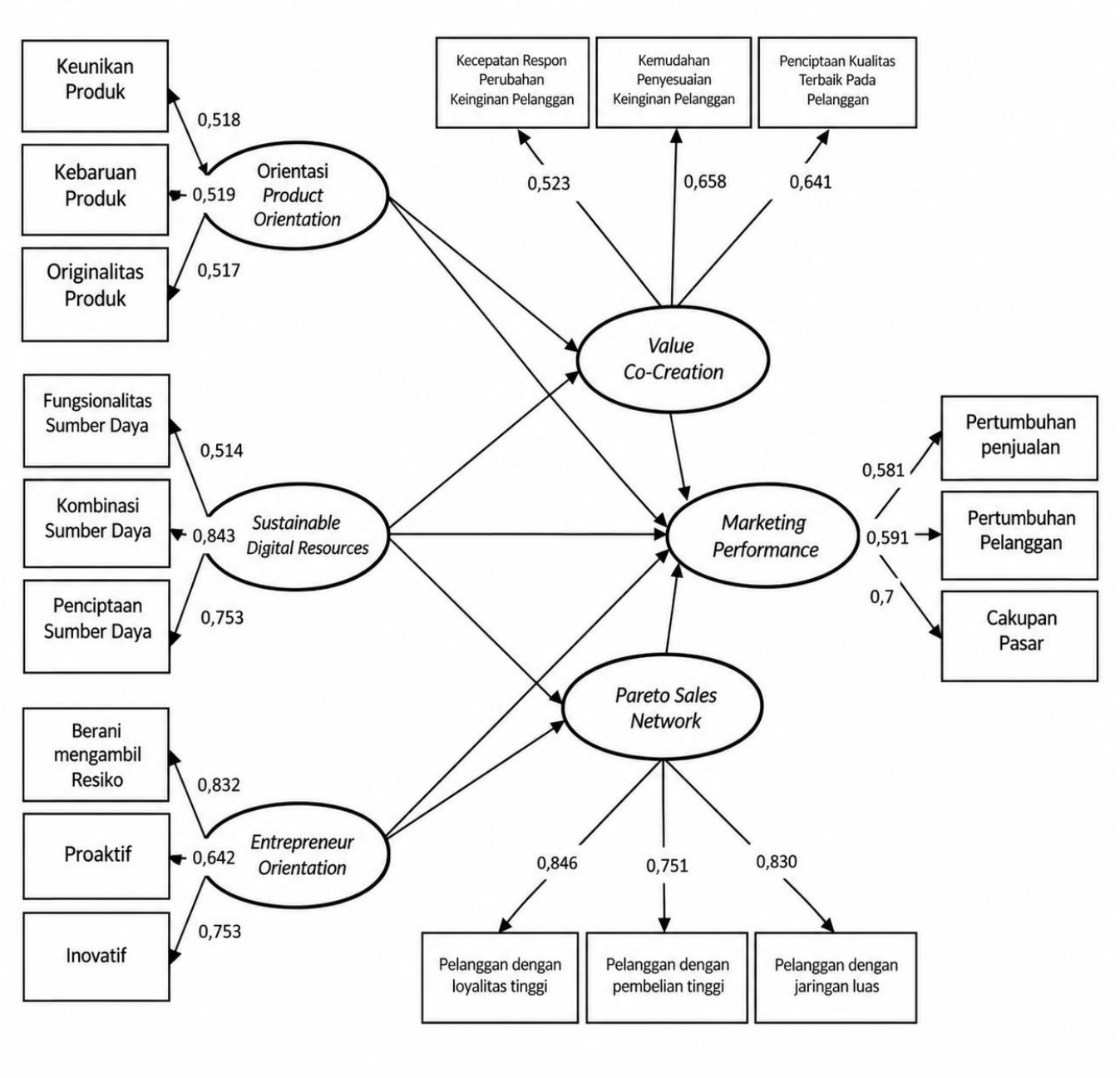


FIGURE 1: Loading Factor Values

3.1.2 Structural Model Testing (Inner Model)

Once the estimated model meets the Outer Model criteria, the structural model (Inner Model) is tested. The following are the R-Square values for the constructs:

TABLE 6
R-SQUARE VALUES

Latent Variable	R Square
Marketing Performance	0.899719

Based on the table, an R^2 value of 0.899719 was obtained. This value indicates that the variables of Product Orientation, Sustainable Physical Resources, Entrepreneurial Orientation, Value Co-Creation, and Pareto Sales Network collectively explain approximately 89.97% of the variation in the marketing performance of natural silk weaving MSMEs in Wajo and Bone Regencies. Meanwhile, the remaining 10.03% of the variation in marketing performance is attributable to factors not included in this research model. The R^2 value of 0.899719 also exceeds the 0.67 threshold used as the criterion for "substantial" predictive capability in model assessment.

Thus, the structural model in this study demonstrates high explanatory power regarding marketing performance. However, it must be noted that the marketing performance of MSMEs is not solely determined by the variables used in this study, as other factors outside the model may also influence it.

3.1.3 Hypothesis Testing

Hypothesis significance can be assessed by comparing the t-statistic with the t-table value. A hypothesis is supported or accepted if the t-statistic exceeds the t-table value; alternatively, the p-value can be compared against the chosen α level. The t-table value for a one-tailed hypothesis at a 95% confidence level ($\alpha = 0.05$) is 1.960. A hypothesis is supported in this study if the t-statistic > 1.960 or the p-value < $\alpha = 0.05$. The PLS analysis in this study was conducted using SmartPLS version 2.0 software on a computer. The hypothesis testing results are as follows:

TABLE 7
PATH COEFFICIENT VALUES AND T-TEST RESULTS

Path	Path Coefficient	T-Statistic	t-value	Note
Product Orientation → Value Co-Creation	0.321657	5.121328	> 1.96	Significant
Product Orientation → Marketing Performance	0.302123	9.191266	> 1.96	Significant
Sustainable Physical Resources → Value Co-Creation	0.213346	7.19219	> 1.96	Significant
Sustainable Physical Resources → Pareto Sales Network	0.417778	4.112915	> 1.96	Significant
Sustainable Physical Resources → Marketing Performance	0.341987	8.184942	> 1.96	Significant
Entrepreneurial Orientation → Pareto Sales Network	0.213211	5.326564	> 1.96	Significant
Entrepreneurial Orientation → Marketing Performance	0.313367	6.217854	> 1.96	Significant
Value Co-Creation → Marketing Performance	0.481223	6.557129	> 1.96	Significant
Pareto Sales Network → Marketing Performance	0.393256	7.241751	> 1.96	Significant

Table 7 presents the results of testing the relationships between variables in the study's structural model. The testing involved examining path coefficients to determine the direction and magnitude of the relationships, as well as T-statistics to assess their significance. Based on the criterion of T-statistics > 1.96 at a 95% confidence level, the relationships between variables tested in the model yielded significant results.

The test results indicate that Value Co-Creation has a path coefficient of 0.481 with respect to Marketing Performance. This is the highest coefficient among the direct relationships between the variables and Marketing Performance. These results suggest that an improved process of value co-creation between business operators and customers tends to be accompanied by enhanced marketing performance. Furthermore, the Pareto Sales Network shows a coefficient of 0.393 with Marketing Performance, indicating that the customer relationships or sales networks maintained by business operators are linked to the marketing performance achieved.

Sustainable Physical Resources has a coefficient of 0.342 with Marketing Performance. Additionally, this variable exhibits relationships with the Pareto Sales Network (0.418) and Value Co-Creation (0.213). These results demonstrate that the condition and utilization of physical resources held by business operators are associated with their ability to execute marketing activities, build sales networks, and create value jointly with customers.

Meanwhile, Product Orientation shows a coefficient of 0.322 with Value Co-Creation and 0.302 with Marketing Performance. These results indicate that the attention business operators pay to products such as quality, motifs, design, and product alignment with customer needs is linked to the value co-creation process and marketing performance. Finally, Entrepreneurial Orientation has a coefficient of 0.213 with the Pareto Sales Network and 0.313 with Marketing Performance. This highlights the relationship between the entrepreneurial attitude of business operators and their ability to build sales networks and achieve marketing performance. The test results confirm that the relationships proposed in the research model are statistically supported based on the applied criteria.

These findings indicate that the marketing performance of natural silk weaving MSMEs in Wajo and Bone Regencies is linked to several aspects: product orientation, utilization of physical resources, entrepreneurial orientation, co-creation of value with customers, and sales networks. Based on these results, the structural model can be illustrated as follows:

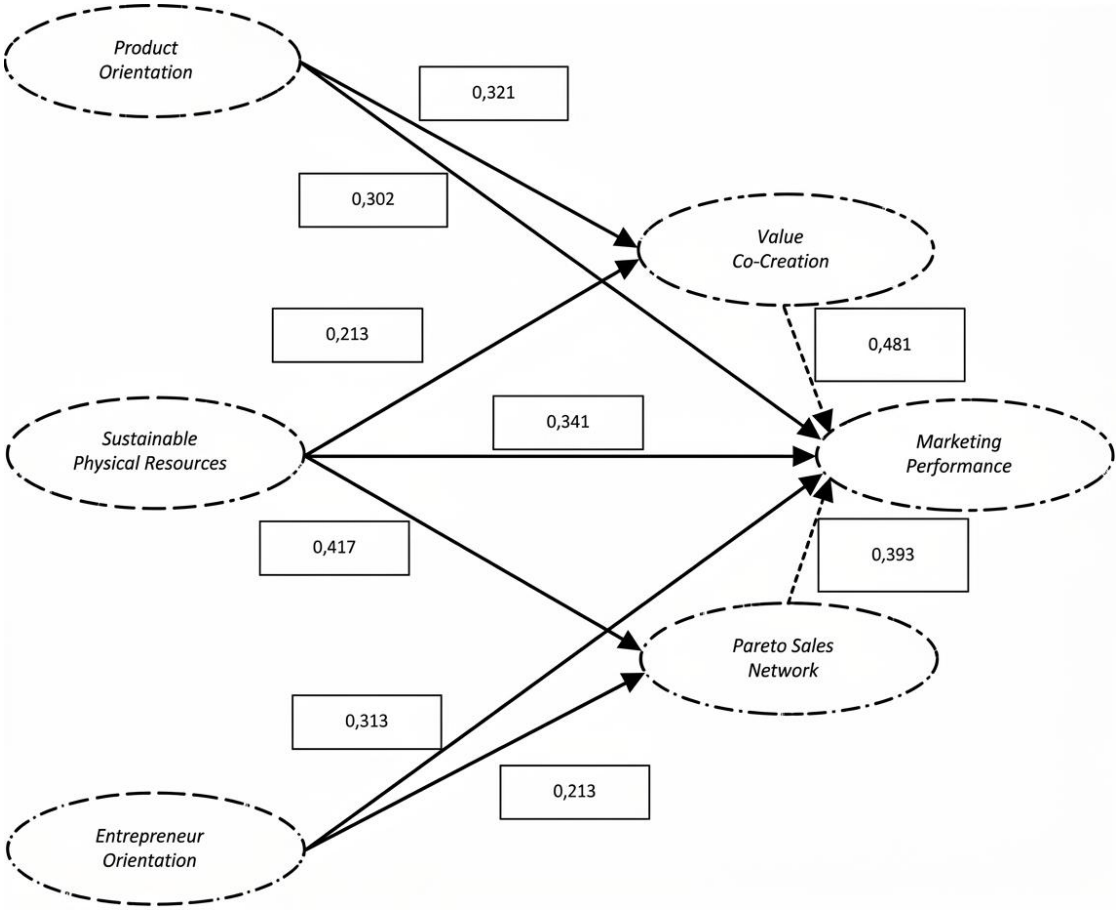


FIGURE 2: Structural Model of the Influence of Product Orientation, Sustainable Physical Resources, Entrepreneurial Orientation, Value Co-Creation, and Pareto Sales Network on the Marketing Performance of Natural Silk Weaving MSMEs.

3.1.4 Mediation Effect Testing

Next, to determine the mediating influence of value co-creation and the Pareto sales network on the marketing performance of natural silk weaving MSMEs, a mediation effect test was conducted. The first step in the mediation testing procedure requires that the direct effect of the independent variable on the dependent variable be significant. Second, the indirect effect must be significant; specifically, the paths from the independent variable to the mediating variable and from the mediating variable to the dependent variable must both be significant to satisfy this condition. This indirect effect is calculated by multiplying the effect of the independent variable on the mediating variable by the effect of the mediating variable on the dependent variable (Hair et al., 2013, cited in Sholihin, 2014:82).

A significant indirect effect indicates that the mediating variable is capable of absorbing or reducing the direct effect observed in the initial test. Third, the VAF is calculated using the following formula (Hair et al., 2013, cited in Sholihin, 2014:82):

$$VAF = \frac{\text{Indirect effect}}{\text{Direct effect} + \text{Indirect effect}} \quad (1)$$

If the VAF value exceeds 80%, it indicates that value co-creation and the Pareto sales network act as full mediators. A VAF value ranging from 20% to 80% indicates partial mediation, whereas a VAF value of less than 20% leads to the conclusion that there is virtually no mediation effect. Based on the calculations, the resulting VAF values are as follows:

TABLE 8
INFLUENCE OF MEDIATING VARIABLES AND VAF VALUES

Path	Direct Effect	Indirect Effect	VAF Value
Product Orientation → Value Co-Creation → Marketing Performance	0.321657	0.302123	0.515
Sustainable Physical Resources → Value Co-Creation → Marketing Performance	0.213346	0.341987	0.222
Sustainable Physical Resources → Pareto Sales Network → Marketing Performance	0.417778	0.341987	0.222
Entrepreneurial Orientation → Pareto Sales Network → Marketing Performance	0.213211	0.313367	0.469

The table presents the results of the mediation effect analysis using the Variance Accounted For (VAF) approach. VAF is used to determine the proportion of a variable's indirect effect on a target variable via a mediating variable relative to its total effect. In this study, VAF values between 0.20 and 0.80 indicate partial mediation; values above 0.80 indicate full mediation; and values below 0.20 indicate the absence of significant mediation.

Based on the test results, four indirect relationships were analyzed. The relationship between Product Orientation and Marketing Performance mediated by Value Co-Creation yielded a VAF value of 0.515 (51.5%). This value falls into the partial mediation category. This implies that a portion of the relationship between Product Orientation and Marketing Performance is explained by Value Co-Creation, while the remainder operates through a direct relationship. For natural silk weaving MSMEs, these results indicate that a focus on the product is also linked to how business owners interact and co-create value with customers.

The relationship between Sustainable Physical Resources and Marketing Performance mediated by Value Co-Creation yielded a VAF value of 0.222 (22.2%). This value indicates partial mediation, albeit with a relatively smaller proportion. Thus, Value Co-Creation constitutes part of the relationship between Sustainable Physical Resources and Marketing Performance, but it is not the sole pathway explaining this connection.

The relationship between Sustainable Physical Resources and Marketing Performance mediated by the Pareto Sales Network also yielded a VAF value of 0.222 (22.2%). These results indicate that the Pareto Sales Network plays a partial mediating role in this relationship. This means that the utilization of physical resources by business owners is linked to the sales network which, in turn, relates to Marketing Performance, even though the proportion of the indirect effect is relatively limited.

The relationship between Entrepreneurial Orientation and Marketing Performance mediated by the Pareto Sales Network yielded a VAF value of 0.469 (46.9%). This value falls into the partial mediation category. These results indicate that the relationship between Entrepreneurial Orientation and Marketing Performance is partially mediated by the Pareto Sales Network. In other words, the entrepreneurial mindset of business owners is linked to the ability to build or leverage sales networks, which in turn influences marketing performance.

All four tested pathways exhibit a pattern of partial mediation. This means that Value Co-Creation and the Pareto Sales Network serve as variables that help explain the relationship between certain independent variables and Marketing Performance, yet the relationship does not occur solely through these mediating variables; direct paths from the independent variables to Marketing Performance also exist. This suggests that the marketing performance of natural silk weaving MSMEs in Wajo and Bone Regencies is linked to a combination of internal business factors and external relationships.

However, the magnitude of each pathway's role varies. Value Co-Creation plays a more significant role in the relationship between Product Orientation and Marketing Performance, whereas the Pareto Sales Network plays a role in the relationships

involving Entrepreneurial Orientation and Sustainable Physical Resources. These findings highlight multiple pathways relevant to understanding MSME marketing performance, without implying that any single pathway is the sole determinant of business performance.

3.2 Discussion

3.2.1 Direct Effect

3.2.1.1 The Effect of Product Orientation on Value Co-Creation

The research results indicate that product orientation has a positive and significant effect on value co-creation. These findings suggest that the stronger the product orientation of natural silk weaving MSMEs, the greater their ability to engage customers in the value co-creation process. When MSMEs offer products characterized by unique traditional motifs, authentic natural silk materials, and distinctive, hard-to-replicate finishing techniques, it fosters a richer dialogue with customers. Customers do not merely purchase products; they also engage in discussions regarding their desired designs, colors, and motifs. A strong product orientation serves as a foundation that drives collaborative interaction between producers and consumers, aligning with prior research indicating that product innovation fosters value co-creation through customer engagement. In the context of natural silk weaving, product uniqueness acts as a distinct draw, creating opportunities for customers to provide input and participate in product development.

By integrating these distinctive finishing techniques and cultural narratives into the design process, these enterprises transform customers from passive purchasers into active collaborators who contribute to product innovation (Girsang, 2025; Yuliati et al., 2024). This participatory framework deepens the bond between artisans and patrons, as the uniqueness of hand-woven textiles invites customers to influence design iterations and refine specialized production outcomes (Wibawa et al., 2026). This collaborative approach leverages the inherent rarity of authentic silk artifacts to foster a sense of exclusivity, thereby strengthening customer participation in the iterative creation of bespoke textile products (Abrokwah-Larbi, 2023; Rahayuningsih et al., 2025).

3.2.1.2 The Effect of Product Orientation on Marketing Performance

The results of this study confirm that product orientation has a positive and significant influence on the marketing performance of natural silk weaving MSMEs. This means that efforts to preserve unique traditional motifs, develop product variations, and maintain the authenticity of local natural silk yarn contribute tangibly to increased sales volume, customer growth, and the expansion of market reach. These findings are consistent with previous research on Troso ikat weaving small industries, which demonstrated that product innovation has a positive and significant impact on competitive advantage, subsequently influencing marketing performance. Research on Songkok To'Bone MSMEs also demonstrated similar results, showing that product orientation positively and significantly affects marketing performance.

In the context of natural silk, consumers increasingly value the authenticity and cultural significance inherent in the products; consequently, MSMEs that consistently maintain their products' distinctive characteristics find it easier to attract and retain customers.

Within this framework, product orientation functions as a strategic foundation for value co-creation, as the inherent uniqueness of artisanal silk motifs and finishing techniques invites customers to transition from passive purchasers to active collaborators in the design process (Yuliati et al., 2024). By involving customers in selecting traditional motifs and refining finishing techniques, MSMEs foster a sense of acknowledgment that deepens customer loyalty and drives collaborative product development (Rahayuningsih et al., 2025). This interactive engagement transforms the production process into a shared narrative where the authenticity of raw materials serves as a catalyst for sustained value co-creation (Wibawa et al., 2026).

Furthermore, this collaborative synergy allows MSMEs to integrate specialized consumer insights directly into their artisanal workflows, ensuring that cultural heritage is preserved while meeting contemporary aesthetic expectations (Suherlan & Marjuki, 2025).

3.2.1.3 The Effect of Sustainable Physical Resources on Value Co-Creation

The research results prove that sustainable physical resources have a positive and significant effect on value co-creation. These findings show that MSMEs' ability to manage physical resources, such as handloom maintenance, stable availability of raw materials, and the combination of appropriate technology with traditional skills, are important prerequisites for creating collaboration with customers. When MSMEs have adequate and well-managed physical resources, they are better able to

respond to special customer requests, such as custom design orders, color adjustments, or changes in product specifications according to trends. This is in line with research by Rianti et al. (2023) who found that sustainable physical resources had a direct effect on value co-creation in Bugis silk weaving SMEs in Bone Regency.

This finding is also supported by the Resource-Based View (RBV) perspective which emphasizes that a company's internal capabilities, including physical resources, are the foundation for creating competitive advantage through collaboration with customers. Within this framework, product orientation among natural silk weaving MSMEs centers on the strategic integration of unique traditional motifs and authentic weaving techniques as core assets for innovation. By prioritizing these culturally embedded design elements, artisans transform the production process into a platform for customer engagement, where collaborative design and shared experiences drive higher levels of product success (Yuliati et al., 2024).

3.2.1.4 The Effect of Sustainable Physical Resources on the Pareto Sales Network

The analysis results indicate a positive and significant influence of sustainable physical resources on the Pareto sales network. This means that MSMEs possessing robust physical resources, ranging from the maintenance of production equipment and the availability of raw materials to the development of natural dyes, are better equipped to build and maintain relationships with key customers who generate the largest share of revenue. Reliable physical resources enable MSMEs to fulfill large-volume orders, maintain consistent quality, and prioritize stock allocation for major customers; all of these are crucial elements in establishing a Pareto sales network. Research by Rianti et al. (2023) confirms these findings, demonstrating that sustainable physical resources have a direct impact on the Pareto sales network within the Bugis silk weaving industry. Ferdinand and Killa (2018) also affirm that companies with a strong resource foundation find it easier to access and leverage strategic distribution networks to enhance sales performance.

3.2.1.5 The Effect of Sustainable Physical Resources on Marketing Performance

The results of this study demonstrate that sustainable physical resources have a positive and significant impact on the marketing performance of natural silk weaving MSMEs. These findings indicate that effective physical resource management, such as the regular maintenance of non-mechanized looms (ATBM), stable access to raw materials, the combination of appropriate technology with traditional skills, and the development of natural dyes, directly contributes to increased sales volume, customer growth, and expanded market reach. This aligns with research in the food and beverage MSME sector, which shows that internal operational capabilities, grounded in human resources, processes, and eco-friendly physical evidence, are more effective at enhancing marketing performance than other strategic elements.

The Resource-Based View (RBV) perspective affirms that sustainably managed physical resources serve as strategic assets that create competitive advantage and drive superior marketing performance. In the context of silk weaving, the ability to maintain consistent production quality is a key factor in gaining customer trust and boosting sales.

3.2.1.6 The Effect of Entrepreneurial Orientation on the Pareto Sales Network

Research results indicate that entrepreneurial orientation has a positive and significant effect on the Pareto sales network. This suggests that MSME operators possessing an entrepreneurial spirit, characterized by risk-taking, proactiveness, and innovation, are better equipped to build and manage relationships with key customers. Entrepreneurship drives business owners to actively approach potential institutional clients, monitor fashion trends, leverage digital platforms, and establish partnerships with key sales agents. These findings are supported by Ferdinand and Killa (2018), who state that companies with a strong entrepreneurial orientation possess greater capability to access Pareto sales networks, thereby generating "networked power" to boost sales performance. Entrepreneurial firms that demonstrate pre-emptive initiative, proactively explore market opportunities, and take calculated risks are more attractive to potential distribution partners. Research on Songkok To'Bone MSMEs also confirms that entrepreneurial orientation contributes significantly to strengthening marketing networks.

3.2.1.7 The Effect of Entrepreneurial Orientation on Marketing Performance

The results of this study confirm that entrepreneurial orientation has a positive and significant influence on marketing performance. These findings indicate that MSME operators who possess the courage to take financial risks, a proactive attitude in monitoring trends and engaging consumers, and the innovative capacity to create new motifs and designs will achieve superior marketing performance. This aligns with research on Songkok To'Bone MSMEs, which demonstrated that entrepreneurial orientation positively and significantly affects marketing performance. Previous studies also indicate that entrepreneurial orientation positively impacts marketing performance through various mechanisms, including product

innovation, networking capabilities, and competitive advantage. Business operators who are proactive in utilizing the latest digital platforms and approaching potential institutional clients find it easier to expand market reach and increase sales.

3.2.1.8 The Effect of Value Co-Creation on Marketing Performance

Among all the variables tested, value co-creation exerts the greatest influence on marketing performance, with a path coefficient of 0.481. This highly significant finding demonstrates that an MSME's ability to involve customers in the value co-creation process is the most dominant factor driving marketing performance. When MSMEs provide accessible communication channels, respond quickly to criticism and suggestions, customize designs to meet customer requests, and prioritize customer-desired quality standards, sales volume, customer growth, and market coverage increase significantly.

These findings align with research by Indriastuti (2019), which showed that value co-creation contributes significantly to the marketing performance of fashion apparel SMEs in Central Java. Research by Rianti et al. (2023) also confirms that value co-creation directly influences the marketing performance of Bugis silk weaving small-scale industries. Furthermore, Sarmento et al. (2024) found that the impact of organizational capabilities on performance is mediated by co-creation, underscoring the importance of customer collaboration in achieving superior performance.

3.2.1.9 The Effect of the Pareto Sales Network on Marketing Performance

Research results indicate that the Pareto sales network has a positive and significant impact on marketing performance, with a path coefficient of 0.393; the second-largest effect after value co-creation. These findings confirm that the ability of MSMEs to identify, serve, and retain the customer segment contributing the most to revenue (the 20% of customers responsible for 80% of revenue) is a crucial determinant of marketing success. Practices such as prioritizing stock for major buyers, offering special pricing systems, and leveraging widespread reseller networks have proven effective in boosting sales volume, customer growth, and market reach. Ferdinand and Killa (2018) state that the Pareto sales network constitutes a strategic asset that provides companies with "networked power" to enhance sales performance.

MSMEs that possess or collaborate with strategic distribution partners will achieve superior sales performance provided the Pareto network asset is managed effectively. Research on Songkok To'Bone MSMEs further confirms that the Pareto sales network exerts a positive and significant influence on marketing performance.

3.2.2 Indirect Effect

3.2.2.1 The Effect of Product Orientation on Marketing Performance Through Value Co-Creation

The analysis results indicate that value co-creation mediates the effect of product orientation on marketing performance, with a VAF value of 0.515 (or 51.5%). This figure falls into the partial mediation category, meaning that approximately half of the impact of product orientation on marketing performance occurs through the mechanism of value co-creation with customers. These findings suggest that, despite possessing superior and innovative products, MSMEs need to actively involve customers in the value co-creation process to maximize the impact on marketing performance. In other words, unique, high-quality products alone are insufficient; MSMEs must also open channels for dialogue with customers, respond to their feedback, and tailor products to market preferences.

This aligns with the findings of Sarmento et al. (2024), who stated that the influence of organizational capabilities on performance is mediated by co-creation; while this effect is stronger in large enterprises than in SMEs, it remains significant for both types of firms. In the context of silk weaving, customers involved in design discussions and product development processes develop a stronger emotional connection, which ultimately fosters loyalty and repeat purchases.

3.2.2.2 The Effect of Sustainable Physical Resources on Marketing Performance Through Value Co-Creation

The analysis results indicate that value co-creation mediates the influence of sustainable physical resources on marketing performance, with a VAF value of 0.222 or 22.2%. This figure represents partial mediation, although the indirect contribution is relatively small compared to the direct effect. This implies that effective management of physical resources fosters value co-creation—for instance, through the ability to respond to custom design requests or product adjustments—yet the primary impact on marketing performance occurs directly. Such direct effects include increased production capacity, operational efficiency, quality consistency, and supply reliability, all of which have a direct impact on sales. Research by Rianti et al. (2023) confirms that value co-creation mediates the influence of sustainable physical resources on marketing performance within Bugis silk weaving small and medium-sized enterprises (SMEs).

These findings are also supported by the Resource-Based View (RBV) perspective, which emphasizes that sustainably managed physical resources create direct competitive advantages through cost efficiency, product quality, and operational reliability.

3.2.2.3 The Effect of Sustainable Physical Resources on Marketing Performance Through Pareto Sales Network

The analysis results indicate that the Pareto sales network mediates the influence of sustainable physical resources on marketing performance, with a VAF value of 0.222 or 22.2%. Similar to the mediation via value co-creation, this figure indicates partial mediation where the indirect contribution is relatively small compared to the direct effect. This means that effective management of physical resources facilitates the formation of a Pareto sales network—for example, through the ability to fulfill large-volume orders and maintain consistent quality for key customers—while the primary impact on marketing performance remains direct. Research by Rianti et al. (2023) confirms that the Pareto sales network mediates the influence of sustainable physical resources on marketing performance within Bugis silk weaving SMEs. Ferdinand and Killa (2018) also emphasize that companies possessing a strong resource foundation find it easier to access and leverage strategic distribution networks to enhance sales performance.

3.2.2.4 The Effect of Entrepreneurial Orientation on Marketing Performance Through the Pareto Sales Network

The analysis results indicate that the Pareto sales network mediates the influence of entrepreneurial orientation on marketing performance, with a VAF value of 0.469 (or 46.9%). This figure falls into the partial mediation category, meaning that nearly half (46.9%) of the influence of entrepreneurial orientation on marketing performance occurs through the MSMEs' ability to build and manage strategic sales networks (Pareto sales networks), while the remainder (53.1%) represents a direct influence.

These findings align with research by Ferdinand and Killa (2018), which states that companies with a strong entrepreneurial orientation possess a greater capability to access Pareto sales networks; this, in turn, generates "networked power" that boosts sales performance. Research on Songkok To'Bone MSMEs also confirms that entrepreneurial orientation contributes significantly to strengthening marketing networks, thereby impacting performance. Consequently, natural silk weaving MSME operators cannot rely solely on possessing an entrepreneurial spirit; they must also consciously and systematically channel that entrepreneurial energy into building and maintaining relationships with the strategic customers who generate the highest revenue.

The study results indicate that all independent variables—namely product orientation, sustainable physical resources, entrepreneurial orientation, value co-creation, and the Pareto sales network—significantly influence the marketing performance of natural silk weaving MSMEs in South Sulawesi. The most significant finding is that value co-creation exerts the strongest direct influence on marketing performance (coefficient of 0.481), followed by the Pareto sales network (coefficient of 0.393). This suggests that the most effective strategies for enhancing marketing performance involve strengthening customer collaboration and building strategic sales networks.

These findings also reveal a gap between the MSMEs' internal capabilities (rated highly in the descriptive analysis) and their actual marketing performance (which remains moderate). Although MSMEs possess strong product orientation, physical resources, and entrepreneurial orientation, these attributes have not yet fully translated into optimal marketing performance. Therefore, strategic interventions should focus on strengthening value co-creation (by providing accessible digital communication channels and ensuring rapid responses to customer feedback) and reinforcing the Pareto sales network (by enhancing personal communication with key customers and optimizing the use of partner networks for market expansion).

IV. CONCLUSION

Based on the results and discussion, the following conclusions are drawn:

1) Product Orientation has a positive and significant effect on Value Co-Creation and Marketing Performance. This implies that the better MSME operators attend to motif uniqueness, the originality of natural silk raw materials, design innovation, and product quality, the greater their ability to engage customers in the value co-creation process, which ultimately drives improved marketing performance.
2) Sustainable Physical Resources have a positive and significant effect on Value Co-Creation, the Pareto Sales Network, and Marketing Performance. This indicates that the management of physical resources, such as the maintenance and renewal of traditional looms (ATBM), stable raw material availability, the combination of appropriate technology with traditional skills, healthy workspaces, and the development of natural dyes and new production tools, is closely

linked to the MSMEs' ability to build customer relationships, expand strategic sales networks, and enhance marketing performance.

3) Entrepreneurial Orientation has a positive and significant effect on the Pareto Sales Network and Marketing Performance. In other words, the proactive and innovative attitudes of business operators, along with their willingness to take risks, are closely associated with the ability to build strategic sales networks and improve marketing performance.

4) Value Co-Creation partially mediates the relationship between Product Orientation and Marketing Performance (with a VAF value of 51.5%) and the relationship between Sustainable Physical Resources and Marketing Performance (with a VAF value of 22.2%).

5) The Pareto Sales Network partially mediates the relationship between Sustainable Physical Resources and Marketing Performance (with a VAF value of 22.2%) and the relationship between Entrepreneurial Orientation and Marketing Performance (with a VAF value of 46.9%).

In general, Bugis natural silk weaving MSMEs in Wajo and Bone Regencies demonstrate strong potential regarding product orientation, sustainable physical resources, and entrepreneurial orientation. However, their marketing performance remains at a moderate level relative to their internal capabilities. These findings indicate that enhancing marketing performance depends not only on product quality and internal business capabilities but also on how MSME operators build customer relationships through value co-creation and leverage customer and business partner networks via the Pareto Sales Network. Both aspects are crucial for the gradual development of natural silk weaving product marketing, aligned with the specific characteristics of MSMEs in Wajo and Bone.

The study's findings reinforce the Resource-Based View (RBV) perspective, which emphasizes that physical resources, managed sustainably through functionality, combination, and resource creation, form a vital foundation for achieving sustainable competitive advantage. Thus, the sustainable physical resources approach proves capable of making a significant theoretical contribution to explaining the marketing performance of natural silk weaving MSMEs in South Sulawesi.

This research has successfully identified the factors influencing the marketing performance of natural silk weaving MSMEs in South Sulawesi. However, the journey toward developing a competitive silk weaving industry remains long. Close collaboration among business operators, the government, academia, and the community is essential to realize the immense potential of this strategic commodity. It is hoped that this research contributes, however modestly, to the advancement of knowledge and the well-being of natural silk weavers in the Bugis region.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

REFERENCES

[1] Aprilia, N., Subroto, W. T., & Sakti, N. C. (2025). The role of Small and Medium Enterprises (SMEs) in supporting the people's economy in Indonesia. *International Journal of Research and Scientific Innovation (IJRSI), XI*(XII), 368-376. https://doi.org/10.51244/IJRSI.2024.11120036

[2] Nor, A. I. (2024). Small and medium-sized enterprises: A tool for socioeconomic development. *International Journal of Advanced and Applied Sciences*, *11*(12), 116-128. https://doi.org/10.21833/ijaas.2024.12.014

[3] Wang, S., Gao, M., & Zhang, H. (2024). Small and medium enterprise (SME) competitiveness and employment creation: The mediating role of SME growth. *Humanities and Social Sciences Communications*, *1*, Article 8. https://doi.org/10.1057/s41599-024-03903-8

[4] Ketut, M. I., Nyoman, U. I. D., & Wayan, S. N. (2024). The importance of Micro, Small, and Medium Enterprises competitiveness through digital transformation. *JASF: Journal of Accounting and Strategic Finance*, *7*(1), 18-38. https://doi.org/10.33005/jasf.v7i1.467

[5] Hassan, R., Acerbi, F., Terzi, S., & Rosa, P. (2025). Transitioning the silk industry towards circularity: A thematic analysis of sustainable value chain practices. *Sustainable Production and Consumption*, *46*, Article 103009. https://doi.org/10.1016/j.spc.2025.03.009

[6] Lu, F., An, M., & Liang, Q. (2025). The sustainability of China's silk trade: Analysis of growth effect and the influencing factors. *Frontiers in Sustainable Food Systems*, *9*. https://doi.org/10.3389/fsufs.2025.1521229

[7] Cao, X., Li, P., Huang, X., & Fan, L. J. P. O. (2022). The dual mechanism of social networks on the relationship between internationalization and firm performance: Empirical evidence from China. *PLoS One*, *17*(2), e0263674. https://doi.org/10.1371/journal.pone.0263674

[8] Cao, X., Li, P., Huang, X., & Fan, L. J. P. O. (2022). The dual mechanism of social networks on the relationship between internationalization and firm performance: Empirical evidence from China. *PLoS One*, *17*(2), e0263674. https://doi.org/10.1371/journal.pone.0263674

[9] Farida, N., & Nuryakin. (2021). Network capability, relational capability and Indonesian manufacturing SME performance: An empirical analysis of the mediating role of product innovation. *Engineering Management in Production and Services*, *13*(1). https://doi.org/10.2478/emj-2021-0003

[10] Gotteland, D., Shock, J., & Sarin, S. (2020). Strategic orientations, marketing proactivity and firm market performance. *Industrial Marketing Management*, *91*, 610-620. https://doi.org/10.1016/j.indmarman.2020.03.012

[11] Adiguzel, Z., & Sonmez Cakir, F. (2025). Empowering sustainability: Green entrepreneurial orientation, innovative strategies, culture and operational performance. *Management Decision*. https://doi.org/10.1108/MD-07-2024-1700

[12] Nuryakin. (2024). Entrepreneurial orientation and SME export performance: Unveiling the mediating roles of innovation capability and international networking accessibility in the brass industry. *Journal of Entrepreneurship, Management and Innovation*, *20*(1), 30-46. https://doi.org/10.7341/20242012

[13] Wadood, F., Alshaikh, M. E., Akbar, F., & Mahmud, M. J. (2022). Adoption of open innovation and entrepreneurial orientation practices in Malaysian furniture industry. *Entrepreneurial Business and Economics Review*, *10*(2), 21-40. https://doi.org/10.15678/EBER.2022.100202

[14] Tkacz, M., Agirre-Aramburu, I., & Lizartza-Martin, A. (2023). Is team entrepreneurial orientation important in generating creative business ideas? The moderating role of team-perceived heterogeneity and the individual creative mindset. *Journal of Entrepreneurship, Management, and Innovation*, *19*(1), 79-111. https://doi.org/10.7341/20231913

[15] Nuryakin. (2021). Mediating effect of relational capabilities in the relationship between entrepreneurial orientation and SMEs performance. *Journal of Entrepreneurship, Management and Innovation*, *17*(1), 129-146. https://doi.org/10.7341/20211714

[16] Akbar, F., Khan, R. A., Wadood, F., & Bon, A. T. B. (2020). Entrepreneurial orientation dimension affects firm performance: A perspective from the Malaysian furniture industry. *Entrepreneurial Business and Economics Review*, *8*(4), 157-181. https://doi.org/10.15678/EBER.2020.080409

[17] Liu, C. H. (2021). Creating competitive advantage through network ties, entrepreneurial orientation and intellectual capital. *Management Decision*, *59*(9), 2238-2263. https://doi.org/10.1108/MD-02-2020-0191

[18] Niu, Y., Deng, F., & Hao, A. W. (2020). Effect of entrepreneurial orientation, collectivistic orientation and swift Guanxi with suppliers on market performance: A study of e-commerce enterprises. *Industrial Marketing Management*, *88*, 35-46. https://doi.org/10.1016/j.indmarman.2020.04.020

[19] Narh, L., Odoom, R., Mahmoud, M. A., & Tweneboah-Koduah, E. Y. (2023). The symbiotic effect of market orientation and brand orientation on performance of service firms in Ghana. *Journal of Brand Management*. https://doi.org/10.1057/s41262-022-00295-5

[20] Chang, C.-W., & Huang, H.-C. (2022). How global mindset drives innovation and exporting performance: The roles of relational and bricolage capabilities. *Journal of Business & Industrial Marketing*. https://doi.org/10.1108/JBIM-06-2021-0320

[21] Florek-Paszkowska, A., Ujwary-Gil, A., & Godlewska-Dzioboń, B. (2021). Business innovation and critical success factors in the era of digital transformation and turbulent times. *Journal of Entrepreneurship, Management, and Innovation*, *17*(4), 7-28. https://doi.org/10.7341/20211741

[22] Kaszowska-Mojsa, J. (2020). Innovation strategies of manufacturing companies during expansions and slowdowns. *Entrepreneurial Business and Economics Review*, *8*(4), 47-66. https://doi.org/10.15678/EBER.2020.080403

[23] Yousaf, Z., Panait, M., Tanveer, U., Cretu, A., Hrebenciuc, A., & Zahid, S. M. J. S. (2022). Value creation through frugal innovation, innovation capability and knowledge sharing in a circular economy. *Sustainability*, *14*(14), 8504. https://doi.org/10.3390/su14148504

[24] Grabowski, W., & Stawasz, E. (2023). Business consulting, knowledge absorptive capacity, and innovativeness: A triangular model for micro and small enterprises in Poland. *Journal of Entrepreneurship, Management, and Innovation*, *19*(1), 7-40. https://doi.org/10.7341/20231911

[25] Latinovic, Z., & Chatterjee, S. C. (2024). Value co-creation: Balancing B2B platform value and potential reverse-value effects. *Journal of Business Research*, *173*, 114518. https://doi.org/10.1016/j.jbusres.2024.114518

[26] Hendrayati, H., Gaffar, V., Wibowo, L. A., & Handayani, R. (2025). Customer relationship management and value creation as key mediators of female-owned MSMEs' market performance. *Journal of Innovation and Entrepreneurship*, *14*(1), Article 20. https://doi.org/10.1186/s13731-025-00520-w

[27] Avila-Garzon, C., & Bacca-Acosta, J. (2024). Thirty years of research and methodologies in value co-creation and co-design. *Sustainability*, *16*(6), 2360. https://doi.org/10.3390/su16062360

[28] Saha, V., Mani, V., & Goyal, P. (2020). Emerging trends in the literature of value co-creation: A bibliometric analysis. *Benchmarking: An International Journal*, *27*(3), 981-1002. https://doi.org/10.1108/BIJ-07-2019-0342

[29] Nájera-Sánchez, J. J., Ortiz-de-Urbina-Criado, M., & Mora-Valentín, E. M. (2020). Mapping value co-creation literature in the technology and innovation management field: A bibliographic coupling analysis. *Frontiers in Psychology*, *11*, 588648. https://doi.org/10.3389/fpsyg.2020.588648

[30] Rianti, M., Muliana, M., Ali, M., Mahmud, E., Agustang, A., Nurfadilla, N., & Padandi, T. (2025). Strategi peningkatan Pareto sales network pada UKM sub sektor agribisnis dengan pendekatan model pentahelix berbantuan process hierarchy analysis. *Journal of Indonesian Scholars for Social Research*, *5*(1 Special Issues), 64-75. https://doi.org/10.59065/jissr.v5i1 Special Issues.204

[31] Kurniawan, R., Budiastuti, D., Hamsal, M., & Kosasih, W. (2021). Networking capability and firm performance: The mediating role of market orientation and business process agility. *Journal of Business & Industrial Marketing*, *36*(9), 1646-1664. https://doi.org/10.1108/JBIM-01-2020-0023

[32] Crick, J. M., Karami, M., & Crick, D. (2021). The impact of the interaction between an entrepreneurial marketing orientation and coopetition on business performance. *International Journal of Entrepreneurial Behavior & Research*, *27*(6), 1423-1447. https://doi.org/10.1108/IJEBR-12-2020-0871

[33] Rianti, M., Muliana, Azis, E., Agustang, & Asnur, W. W. (2023). Sustainable physical resources to value co-creation, Pareto sales network, and marketing performance. *Journal of Indonesian Scholars for Social Research*, *3*(1), 44-55. https://doi.org/10.59065/jissr.v3i1.47

[34] Meramveliotakis, G., & Manioudis, M. (2021). Sustainable development, COVID-19 and small business in Greece: Small is not beautiful. *Administrative Sciences*, *11*(3), 90. https://doi.org/10.3390/admsci11030090

[35] Botti, A., & Monda, A. (2020). Sustainable value co-creation and digital health: The case of Trentino eHealth ecosystem. *Sustainability*, *12*(13), 5263. https://doi.org/10.3390/su12135263

[36] Mahrinasari, M. S., Bangsawan, S., & Sabri, M. F. (2024). Local wisdom and government's role in strengthening the sustainable competitive advantage of creative industries. *Heliyon*. https://doi.org/10.1016/j.heliyon.2024.e31133.