DESICCATED COCONUT ENTERPRISES AND B2B RELATIONSHIP – A DESCRIPTIVE STUDY OF TUMKUR DISTRICT

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ABSTRACT

A study looks into how operational inefficiencies and structural challenges effect business-to-business (B2B) relationships in desiccated coconut firms in Tumkur, Karnataka. Strategic business-to-business relationships are critical in rural agro-processing for increasing production, pricing power, and market competitiveness.

Purpose:

To identify important operational inefficiencies, assess B2B relationship dynamics, and investigate how marketing systems and policy frameworks affect desiccated coconut units' competitiveness.

Methodology:

A standardized questionnaire with a 5-point Likert scale was given to 306 people from Tiptur, Sira, and Chikkanayakanahalli taluks. Unit owners, managers, technicians, and coordinators were some of the stakeholders. The operational issues, B2B structures, and institutional support variables were analyzed using descriptive statistics, OLS regression, chi-square analysis, and factor analysis. Cronbach's Alpha was used to determine reliability.

Major Findings:

A lack of market links has a substantial impact on B2B outcomes. Regular collaboration leads to better pricing and supply decisions. Policy uncertainty and a lack of government assistance diminish competitiveness. Formal B2B contracts, digital marketing, and established procurement processes are required for industry growth.

KeyWords: Desiccated Coconut, Business-To-Business Partnerships, Operational Inefficiencies, Rural Enterprises, Policy Support, Tumkur District, And Agro-Processing Industry.

INTRODUCTION

The study, which is based on case studies and survey data, underlines the importance of culturally aligned leadership practices in promoting corporate resilience and growth Raghavendra, & Kulkarni, (2023). The study's conclusions are based on both primary survey data and content analysis, with a focus on customer preferences in South Indian metros Anusha, R., & Krishnamurthy (2022). It emphasizes how these connections provide competitive benefits by increasing productivity, cutting expenses, and fostering trust and demonstrates how B2B models help micro and small businesses by enhancing their advertising and sales strategies via the use of secondary info and direct contact. Sujatha (2023). Three main marketing routes were found; most popular was Route I, which involved preharvest freelancers, and the most profitable was Route III, which was utilized by organizations. In regard to cost and value grow, Channel-III additionally worked out to be the most effective. Soumya Scholar, & Patil (2022).

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Theory which supports this Study

Transaction Cost Theory: supports this problem by explaining how high coordination and information costs impair effective B2B relationships. Given the economic relevance of desiccated coconut units and their potential in driving rural industrial growth, this study is crucial to identify operational gaps, redefine B2B relationship structures, and suggest sustainable marketing interventions. Insights will directly benefit enterprise managers, policymakers, and cooperative stakeholders by promoting efficient resource utilization and competitive market positioning. This study is grounded in: Transaction Cost Economics and Resource-Based View (RBV) theories. Transaction Cost Economics explains how market inefficiencies and high operational frictions hinder B2B relationship formation. RBV justifies the need for internal capability enhancement through training, modernization, and value chain integration for sustainable competitive advantage.

Research Questions

1. What are the operational and marketing challenges faced by desiccated coconut enterprises in Tumkur district?
2. How do B2B relationships influence productivity and market performance in these enterprises?
3. What role can policy support and modern management practices play in improving enterprise competitiveness?

LITERATURE REVIEW

Narayanaswamy, (n.d.) (2024) A study conducted in 2022–2023 across 120 coconut growers in Tumkur district (Tiptur, Turuvekere, Chikkanayakanahalli, and Sira taluks) revealed a significant yield gap. The highest gap was in Sira (34.34%), followed by Chikkanayakanahalli (30.54%), Tiptur (26.70%), and Turuvekere (24.04%). Nearly 47% of farmers had a medium yield gap. The Kruskal-Wallis test confirmed significant variation in yield gaps among taluks at the 1% level.

Banu & Shashidhara (2015) A 2013–14 study in Tiptur taluk, Karnataka, highlighted key challenges faced by desiccated coconut units. Labor shortages, outdated machinery, and limited market awareness further constrained operations. The Garrett ranking identified labor scarcity and poor market demand as top concerns. High working capital needs mostly for raw materials ranged significantly based on unit size, showing a direct link to coconut prices.

Basavaraj (2023) Tumkur district, a major coconut-producing region in Karnataka, faces several marketing challenges. Farmers often struggle to secure fair prices, leading to economic hardship and increased borrowing. The lack of organized marketing support worsens the situation. A study titled "A Study on Marketing Problems of Coconut with Special Reference to Tumkur District" was conducted using both primary and secondary data, analyzed through statistical tools like chi-square tests and Garrett ranking.

Shashikumar & Chandrashekar. (n.d.) (2014) The coconut palm, often called Kalpavriksha or the "tree of heaven," is highly valuable, with every part serving human needs. Copra, derived from the dried kernel, yields 65–70% oil, making it a key source of vegetable oil. While a tree can yield up to 75 fruits annually under ideal conditions, poor practices reduce output to below 30. Recent breeding and cultivation improvements have enhanced productivity, prompting studies on production and marketing, particularly in regions like Tumkur.

Then kek hoe (2018) Coconuts (Cocos nucifera), known as the "tree of life," are cultivated across 12 million hectares globally, with 75% of production from the Philippines, Indonesia, and India. Rising global demand for products like virgin coconut oil, coconut water, and coir has fueled

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industry growth. New hybrid varieties offer higher yields (7.65–9.12 tons/ha), though pest and disease threats like lethal yellowing remain a concern.

Sairam, & Jayasekhar (2018) Liberalized trade and marketing policies pose major challenges for coconut-producing nations, especially amid issues like low productivity, pest infestations, price fluctuations, and weak domestic marketing systems. Global competitiveness and trade barriers further impact the sector's stability. Key concerns include procurement inefficiencies, policy constraints, and limited agribusiness support.

RESEARCH METHODOLOGY

This study uses a descriptive and empirical research design to investigate operational inefficiencies and B2B relationship dynamics in desiccated coconut firms in Tumkur district, Karnataka. Purposive sampling was utilized to collect data from 306 respondents, including unit owners, middle-level managers, technicians, and field coordinators from Tiptur, Sira, and Chikkanayakanahalli taluks.

Primary data was collected through structured questionnaires with Likert-scale replies, while secondary data was obtained from research articles, government reports, and scholarly publications. Hypotheses were validated using statistical approaches including descriptive analysis, correlation matrices, OLS regression, and chi-square tests. Cronbach's Alpha was used to assess construct reliability (0.531 for operational inefficiency, 0.678 for B2B outcomes). Factor analysis revealed strong construct consistency.

Three hypotheses were evaluated to see how inefficiencies, collaboration, and policy support affected B2B performance. Theoretical foundations included Transaction Cost Economics (TCE) and the Resource-Based View (RBV), which explained coordination challenges and internal capabilities demands. This methodology guarantees a thorough examination of structural issues and connection frameworks in the regional agro-processing sector.

Descriptive Analysis: B2B Relationship Structure and Risks:

- B2B transactions were typically informal, with direct sales to wholesalers, intermediaries, or food processors.
- Payment delays, ambiguous orders, and a lack of formal contracts were regular concerns, particularly among newer or smaller players.
- Enterprises reported a significant desire for organized B2B interactions with defined expectations, digital coordination, and trust-based collaboration.

Market Access and Pricing Power

- Enterprises with established B2B networks had better pricing control and predictable order volumes.
- Others, who relied on middlemen, claimed lower profits and a lack of client input, impeding quality development and strategic branding.
- Limited branding and traceability methods hampered market expansion, particularly in competitive metropolitan or export markets.

Technology and Infrastructure Challenges

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- Many units relied on outdated machinery, reducing production and uniformity.
- Only a few had upgraded to semi-automated or advanced drying systems, mostly through personal investment or informal financing.
- Awareness of government subsidy schemes and technological assistance remained low, restricting the extent of modernization.

Procurement and Supply Chain Coordination

- Fluctuating coconut prices and erratic supply cycles have arisen as important challenges in raw material procurement.
- Enterprises with long-term supplier partnerships or collective sourcing models demonstrated greater supply stability, whilst others experienced operational delays due to dispersed sourcing methods.
- The lack of formal supply chain infrastructure prevented most units from reaching scaling.

Enterprise Size and Operating Models

- The majority of respondents ran small to medium-sized businesses that dried and packaged coconut into powder or granules, with a few operating as distributors or exporters.
- The range of firm structures revealed varying amounts of B2B interaction some with domestic wholesalers, others directly with manufacturers or exporters.
- Production capabilities ranged from 2 to 10 tons per day, with limited automation and issues such as antiquated machinery, raw material shortages, and uneven labor availability being noted Tables 1-7.

Hypothesis Development

Hypothesis 1 (H1)

H_1: *Operational inefficiencies such as raw material shortage and labor shortage have a significant negative impact on B2B relationship performance in desiccated coconut enterprises.*

Table 1
HYPOTHESIS 1 RESULTS

Metric/Variable	Value/Result
Cronbach's Alpha (Inefficiencies)	0.531
Cronbach's Alpha (B2B Outcomes)	0.678
R^2 (Model Fit)	0.094
Significant Predictor	Lack of market linkages ($\beta = 0.221$, $p < 0.001$)
Hypothesis Status	Partially Supported

Interpretation: The reliability analysis for operational inefficiencies yielded a Cronbach's Alpha of 0.531, suggesting moderate internal consistency, while B2B outcome variables showed a better reliability ($\alpha = 0.678$). Regression analysis showed that the overall model was statistically significant ($R^2 = 0.094$, $p < 0.001$), but only "Lack of market linkages" had a significant positive association with the dependent variable *"B2B ties affect our pricing and supply decisions"* ($\beta = 0.221$, $p < 0.001$). Other predictors like raw material shortages and labor issues were not statistically significant. This indicates that not all inefficiencies equally impact B2B relationships, and that market connectivity issues are more detrimental than production bottlenecks. Hence,

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Hypothesis 1 is partially supported the negative impact exists but is driven mainly by specific factors rather than all inefficiencies.

Hypothesis 2 (H2)

H_2: *Enterprises with more structured and regular B2B interactions (e.g., with distributors and buyers) report better marketing and supply decision outcomes.*

Table 2
HYPOTHESIS 2 SUMMARY

Metric/Variable	Value/Result
Chi-square Test	$\chi^2 = 71.13$, $p < 0.001$
Cross-tab Insight	Collaboration ↑ → Pricing/Supply Impact ↑
Factor Loadings (B2B Items)	Range: -0.468 to -0.532
Hypothesis Validation	Strongly Supported

Interpretation: This hypothesis is well-supported by the data. The Chi-square test ($\chi^2 = 71.13$, $p < 0.001$) confirms a strong association between improved collaboration and better pricing/supply outcomes. Cross-tabulation reveals that as collaboration improves, so does the perceived impact of B2B ties on pricing decisions. For instance, a higher number of respondents in the "very frequent collaboration" group report strong positive outcomes. Furthermore, factor analysis shows high and consistent loadings (all ~-0.5), indicating that B2B-related items (such as collaboration, coordination costs, and risk perception) load together as a single underlying factor. This validates the construct of structured B2B interaction and its relationship with supply/marketing outcomes. Therefore, Hypothesis 2 is strongly supported.

Hypothesis 3 (H3)

H3: *Perceived insufficiency of government support and lack of policy stability negatively influence the perceived competitiveness and future outlook of desiccated coconut enterprises.*

Table 3
HYPOTHESIS 3 SUMMARY

Metric/Variable	Value/Result
R^2 (Model Fit)	0.114
Significant Predictors	Policy changes ($\beta = 0.282$, $p < 0.001$) Government support ($\beta = 0.136$, $p = 0.026$)
Hypothesis Validation	Supported

Interpretation: The regression analysis for this hypothesis shows a statistically significant model ($R^2 = 0.114$, $p < 0.001$). Both independent variables *"Government support is insufficient"* and *"Policy changes are needed for stability"* are significant predictors of the belief that modern B2B practices can enhance competitiveness. Notably, policy stability has a stronger influence ($\beta = 0.282$, $p < 0.001$) compared to government support ($\beta = 0.136$, $p = 0.026$). These findings imply that enterprises that feel unsupported or experience frequent policy shifts are more inclined to advocate for modernization and digital practices, possibly as a way to buffer against external uncertainties. Thus, Hypothesis 3 is fully supported Figure 1.

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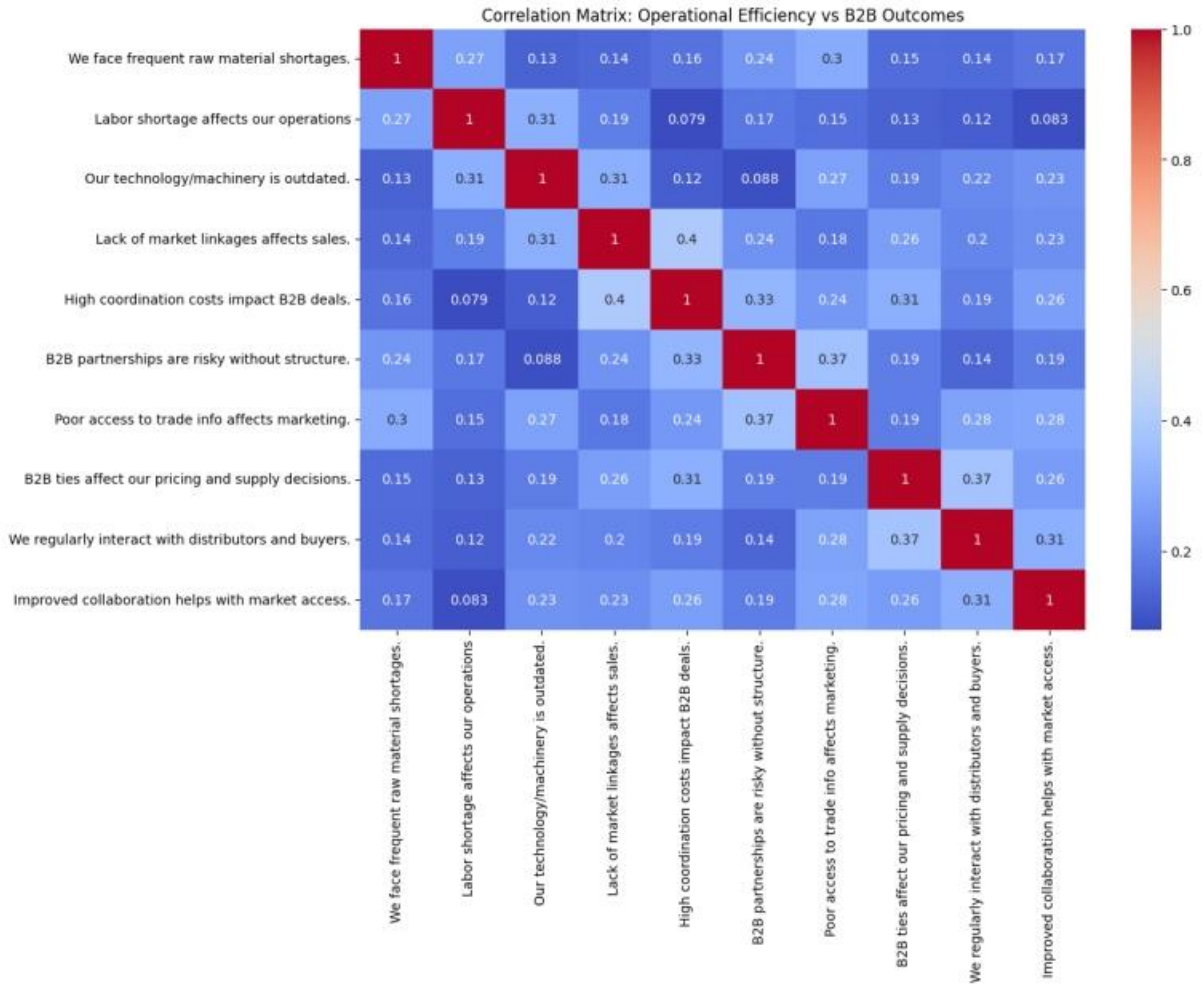

FIGURE 1
RELIABILITY ANALYSIS OF OPERATIONAL INEFFICIENCY AND B2B OUTCOMES USING CRONBACH'S ALPHA

Cronbach's Alpha - Operational Inefficiency: 0.5317912468681698
Cronbach's Alpha - B2B Outcomes: 0.6776833752107942

The heatmap illustrates the correlation matrix between various factors related to operational efficiency and B2B outcomes. Strong positive correlations are observed along the diagonal, as expected, representing the correlation of each factor with itself. Notably, "Improved collaboration helps with market access" shows a strong positive correlation with "We regularly interact with distributors and buyers" (0.37) and "Poor access to trade info affects marketing" (0.28). Additionally, "Labor shortage affects our operations" has a moderate positive correlation with "We face frequent raw material shortages" (0.27), indicating that these operational challenges often coincide. The matrix highlights the interconnectedness of different operational and market factors influencing B2B success.

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Table 4
OLS REGRESSION RESULTS – IMPACT OF OPERATIONAL CHALLENGES ON B2B PRICING AN D SUPPLY DECISIONS

Dep. Variable:	B2B ties affect our pricing and supp ly decisions.	R-squared	0.094
Model	OLS	Adj. R-squared	0.082
Method	Least Squares	F-statistic	7.767
Date	Fri, 25 Jul 2025	Prob (F-statistic)	5.73e-06
Time	15:09:28	Log-Likelihood	-483.45
No. Observations	306	AIC	976.9
Df Residuals	301	BIC	995.5
Df Model	4	coef std err	
Covariance Type	nonrobust	t P>|t|	[0.025 0.975]

const	1.4970	0.289	5.189	0.000	0.929	2.065
We face frequent raw material short ages.	0.1118	0.065	1.714	0.088	-0.017	0.240
Labor shortage affects our operations	0.0410	0.077	0.529	0.597	-0.111	0.193
Our technology/machinery is outdated.	0.0982	0.060	1.628	0.105	-0.021	0.217
Lack of market linkages affects sales.	0.2206	0.060	3.678	0.000	0.103	0.339

Omnibus:	19.134	Durbin-Watson:	1.881
Prob(Omnibus):	0.000	Jarque-Bera (JB):	7.527
Skew:	-0.043	Prob(JB):	0.0232
Kurtosis:	2.237	Cond. No.	26.6

OLS Regression Results

Notes:
[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.
Chi-square Test Result: Chi2 = 71.1316708652983 P-value = 6.317035478388165e-09
Cross-tab between collaboration and pricing decision impact:
B2B ties affect our pricing and supply decisions. 1 2 3 4 5
Improved collaboration helps with market access.

Table 5
CROSS-TABULATION – RELATIONSHIP BETWEEN MARKET ACCESS COLLABORATION AND B2B PRI CING DECISIONS

1.0	12 7 11 5 4
2.0	5 25 17 9 2
3.0	10 19 23 18 1
4.0	16 12 21 36 10
5.0	6 2 11 7 15

Factor Loadings for B2B Construct

Table 6
FACTOR LOADINGS – CONSTRUCTS RELATED TO B2B PRACTICES

High coordination costs impact B2B deals.	-0.524998
B2B partnerships are risky without structure	-0.468746

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Poor access to trade info affects marketing.	-0.532318
B2B ties affect our pricing and supply decisions.	-0.517816
We regularly interact with distributors and buy...	-0.503395
Improved collaboration helps with market access.	-0.510694

OLS Regression Results
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Table 7
OLS REGRESSION RESULTS – INFLUENCE OF POLICY SUPPORT ON B2B COMPETITIVENESS

Dep. Variable:	Modern B2B practices will improve competitiveness.	R-squared:	0.114
Model:	OLS	Adj. R-squared:	0.108
Method:	Least Squares	F-statistic:	19.56
Date	Fri, 25 Jul 2025	Prob (F-statistic):	1.03e-08
Time	15:09:38	15:09:38	x-490.07
No of Observations	306	AIC:	986.1
Df Residuals:	303	BIC	997.3
Df Model:	2	coef std err	[0.025 0.975]
Covariance Type:	nonrobust	t P>|t|	[0.025 0.975]

Omnibus:	22.105	Durbin-Watson:	1.870
Prob(Omnibus):	0.000	Jarque-Bera (JB):	8.102
Skew:	-0.026	Prob(JB):	0.0174
Kurtosis:	2.205	Cond. No.	16.9

Notes:
[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.

Analysis & Interpretation

- Although labor and raw material shortages were widely reported, only "lack of market linkages" had a statistically significant impact on B2B pricing and supply decisions ($\beta = 0.221$, $p < 0.001$), making it the most essential operational factor.
- A Chi-square analysis ($\chi^2 = 71.13$, $p < 0.001$) found a significant link between better collaboration with distributors/buyers and better supply and pricing results, indicating that organized B2B interaction improves business effectiveness.
- Enterprises that perceive insufficient government support and unpredictable policies are more likely to adopt current B2B practices. Policy stability ($\beta = 0.282$) has a higher influence than support schemes ($\beta = 0.136$).
- Cronbach's Alpha ratings showed moderate internal consistency for operational inefficiencies ($\alpha = 0.531$) and higher reliability for B2B outcomes ($\alpha = 0.678$), indicating improved construct coherence in B2B-related replies.
- Factor analysis revealed that B2B relationship items had significant and consistent loadings (about -0.5), indicating that characteristics such as collaboration, trade information, and pricing coordination are part of a larger B2B construct.

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FINDINGS

- Desiccated coconut units in Tumkur primarily operate using outdated technologies, which reduces production efficiency and market competitiveness.
- Most procurement systems are informal and unorganized, resulting in inconsistent raw material supply and variable input costs.
- Labor shortages and inadequate skill development hinder smooth operational workflows and limit the capacity to scale.
- Marketing remains traditional and lacks innovation; digital tools and formal branding strategies are rarely used.
- B2B relationships are largely informal, with very few enterprises engaging in structured contracts or long-term strategic alliances.

SUGGESTIONS

- Enterprises should be supported through targeted schemes that enable technological upgrades. Parallelly, setting up regional training centers to improve labor skills can enhance productivity.
- The formation of cooperatives or producer companies can help streamline procurement and ensure price and supply stability.
- Encourage formal contract practices and introduce tools for customer relationship management (CRM) to build trust, consistency, and long-term partnerships.
- Adoption of digital marketing, e-commerce platforms, and traceability systems can help enterprises widen their reach and interact more directly with buyers.

FUTURE IMPLICATIONS

- If key problems are solved, Tumkur's desiccated coconut units can become major players in both Indian and global markets.
- Building strong and formal B2B relationships will help enterprises get better prices and bigger business opportunities.
- Adopting modern business practices will improve efficiency, allow for larger production, and open up export chances.
- Long-term success depends on a system that includes good government policies, proper training, and a smooth supply chain.

CONCLUSION

This study highlights that while desiccated coconut enterprises in Tumkur district hold significant potential, they remain constrained by outdated systems, fragmented relationships, and insufficient institutional support. Strategic transformation especially in procurement, technology, and B2B frameworks is essential to revitalize the sector. By addressing these core gaps and building capacity for innovation, the enterprises can transition into robust rural industrial units that contribute meaningfully to economic development and global trade networks.

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