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COMPARATIVE INSTITUTIONAL ANALYSIS OF FCV TOBACCO VALUE CHAINS IN INDIA AND ZIMBABWE

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ABSTRACT

This study conducted a comparative analysis of the Flue-Cured Virginia (FCV) tobacco value chains in India and Zimbabwe to investigate how the divergent institutional governance structures influence the distribution of value among the chain actors based on the Global Value Chain (GVC) theory. The study interviewed 210 respondents, including tobacco growers, commission agents, traders, processors and exporters of the two countries. Analytical tools included value chain mapping, Welch's independent samples t test, SWOT analysis and Porter's Value Chain performance measurement. Welch's independent samples t-tests showed statistically significant differences between value capture in India and Zimbabwe in three of the four actor categories. The institutional governance analysis using SWOT assessment confirmed that Zimbabwe's contract-based system concentrates value among private contract companies who get 32.3% and exporters had 28.6%, yielding a significantly lower value farmer's share was 15.6% compared to India's 33.1%. In India traders had 25.6%, processors 22.3% and exporters 19% whereas India's auction-based hybrid enabled a more equitable spread of value between actors. The Porter's Value Chain analysis revealed that India has a higher overall chain score (2.16) than the benchmark (2.0) due to stronger institutional support activities, while Zimbabwe has a chain score (1.87) below the benchmark, indicating structural weaknesses in financial systems. The study suggests that Zimbabwe should focus on structural reform of contract farming governance and invest in innovative domestic processing, while India should pursue downstream product innovation and continue to strengthen institutions.

KEYWORDS: FCV Tobacco, Institutional Governance, Tobacco Value Chain, Global Value Chain, Value Distribution

1. INTRODUCTION

Value chains in agriculture have a significant impact on the creation and distribution of economic value between various economic agents in the production and marketing process (Barrett et al., 2022; Montalbano and Nenci, 2024). Global Value Chain (GVC) theory stipulates that economic agents in value chains are impacted by institutional dynamics and coordination mechanisms that affect the distribution of economic value in the production and marketing process (Gereffi et al., 2005; Kaplinsky & Morris, 2001). Institutional dynamics refer to the formal and informal rules, governance structures, and power relations that shape interactions among actors within a value chain.

The FCV tobacco sector operates within an organized, policy-regulated production system characterized by institutional mechanisms for area allotment, production quota fixation, and well-established auction and e-auction systems that structure market transactions (Reddy et al., 2024). The FCV tobacco sector presents a compelling case for examining these dynamics. As a high-value export crop, tobacco production is characterized by intensive input requirements, strict quality standards, and strong linkages to global markets (Dube et al, 2018).

India and Zimbabwe are among the leading producers of FCV tobacco in the developing world, following Brazil and China in global production rankings (Scoones et al., 2018; Magati et al., 2019). Tobacco contributes substantially to agricultural export earnings and smallholder livelihoods in both countries, making the governance of its value chain a matter of significant policy concern. In India, tobacco export earnings reached a record US$1.45 billion (₹12,005.89 crore) in 2023 -24, representing an 87% surge over five years (Tobacco Board of India, 2024). In Zimbabwe, tobacco export earnings reached US$1.39 billion in 2024 (TIMB, 2024).

The Flue-Cured Virginia (FCV) tobacco value chains in India and Zimbabwe represent two of the most sophisticated yet different institutional models in global agriculture. The two countries have adopted fundamentally different coordination mechanisms to manage smallholder production and market access. In India, the sector is defined by a state-led regulatory framework centered on the Tobacco Board of India (Naik & Deshpande, 2021; Kulkarni et al., 2023). Conversely, Zimbabwe has embraced a vertically integrated contract farming system overseen by the Tobacco Industry and Marketing Board, a model born out of the necessity to mobilize private credit and inputs within a challenging macroeconomic climate (Shonhe, 2023; Scoones et al., 2018).

While both systems have successfully maintained global export competitiveness there is a growing concern regarding the asymmetry of value capture amongst the value chain actors in FCV tobacco production in India and Zimbabwe. There is a critical lack of comparative, quantitative research that dissects how these two different institutional dynamics which are regulated auctions and vertical contracts impact the actual percentage of value retained by the farmer. Without a systematic analysis of these institutions, policymakers lack the evidence needed to reform governance structures to ensure that smallholder tobacco production remains a viable and equitable pathway for rural development in India and Zimbabwe. Filling these gaps will be important for the development of evidence-based policy interventions aimed at strengthening the tobacco value chain in India and Zimbabwe.

In this context the present study aimed to map and analyze the institutional governance structures of the Flue-Cured Virginia (FCV) tobacco value chains in India and Zimbabwe through systematic value chain mapping across key actors in both nations. The study will recommend evidence-based policy interventions to improve equity in value distribution and strengthen smallholder participation in tobacco value chains.

2. METHODOLOGY

2.1. Data Sources

The study was conducted in two major FCV tobacco-producing regions Mashonaland West Province in Zimbabwe and Andhra Pradesh, India. In Zimbabwe, Hurungwe District was purposively selected as the highest-producing district in the province. In Andhra Pradesh, the study area was selected from regions with the highest area under tobacco cultivation within Rajamahendravaram Rural Block of East Godavari district. A multistage sampling approach was adopted, combining purposive and stratified random sampling techniques. Initially, key tobacco-producing areas were purposively selected, followed by stratified random sampling of tobacco value chain actors within the selected locations. A total of 210 respondents were surveyed, comprising 120 stakeholders from India and 90 from Zimbabwe. Data were collected using a pre-tested structured questionnaire administered through personal interviews. The instrument was pre-tested on 20 respondents; based on feedback, five questions were revised and two were removed. Final data collection was carried out in 2025. The study followed a cross-sectional research design.

2.2. Ethical Clearance

Ethical clearance was obtained from the Research office of Galgotias University prior to data collection. All respondents were informed of the study's objectives and voluntarily provided written informed consent. Participation was voluntary and respondents were assured of anonymity and confidentiality of responses. No personally identifiable information was reported.

2.3 Analytic Tools

(i) Value Capture, Comparative Analysis and Value Chain Mapping

a) Percentage share: It was calculated to determine how much of the total value capture by each actor in the tobacco value chain.

Percentage Share (%) = (Actor Value Added ÷ Total Value Added) × 100

Where actor value is calculated by following formula

Actor Value Added (US$/kg) = Price- Cost

b) Hypothesis testing using Welch's independent samples t test

Welch's t test was used to fix whether the observed differences in value capture between India and Zimbabwe were statistically significant.

H_0: There is no significant difference in value capture % across actor categories between India and Zimbabwe

$t = (\bar{X}_1 - \bar{X}_2) / \sqrt{(s_1^2 / n_1 + s_2^2 / n_2)}$

Where: $\bar{X}_1$, $\bar{X}_2$ = sample means

s_1^2, s_2^2 = sample variance

s n_1, n_2 = sample sizes

ν = degrees of freedom

c)Value chain mapping of tobacco production in India and Zimbabwe

To analyze the tobacco sectors in India and Zimbabwe, value chain mapping was employed as a basic diagnostic tool. This process went beyond a linear identification of stakeholders to systematically trace the relationship between institutional governance and economic activities. The mapping was executed in three distinct phases

1. Institutional Layering: This entails identifying the dominant regulatory bodies, the Tobacco Board of India (TBI) and the Tobacco Industry and Marketing Board (TIMB) and mapping how their respective mandates (auction-based versus contract-based) set the 'rules of the game' for all the downstream nodes.
2. Mapping in sequence the primary stakeholders i.e. Actor Sequencing, from input suppliers and farmers, to traders/contractors, processors, and exporters.
3. Functional distribution to record the specific value addition functions performed by each actor (e.g. curing, grading, packaging and logistics) to identify how institutional coordination mechanisms either enable or constrain farmers' ability to capture value.

(ii) SWOT Analysis

The SWOT dimensions were classified in line with the conventional strategic management theory. The internal factors (Strengths and Weaknesses) included institutional design, cost structure, governance and value capture; and external factors (Opportunities and Threats) included global demand conditions, regulatory regimes, climate exposure and market structure.

Mango et al. (2018) constructed composite indices using normalized indicators scaled on a 0–5 range and adapted for cross-country agricultural comparisons. Indicators were weighted equally within each dimension to ensure transparency and cross-country comparability, a convention in the absence of empirically derived priority weights.

For each dimension:

$$\text{Index} = \Sigma (w_i \times S_i)$$

Where,

S_i = standardized indicator scores and w_i = assigned weight (equal weighting).

$\sum wi = 5.00$

Expert Judgment

The experts to allocate importance.

Score = Si

The score measures how well the factor performs.

The score was the mean rating from respondents or assigned based on expert evaluation.

Score = Relative weight * performance

Four composite measures are derived: Strength Index (SI), Weakness Exposure Index (WEI), Opportunity Potential Index (OPI), and Threat Vulnerability Index (TVI). A Strategic Position Score (SPS) is computed

$$SPS = (SI + OPI) - (WEI + TVI)$$

A positive SPS indicates a net strategic advantage and a negative score indicates vulnerability.

(iii) Porter's Value Chain Mapping

Porter's value chain mapping was used to evaluate the performance of different activities across the tobacco value chain. Performance was rated using a 3-point Likert-type scale (1 = Poor/Weak; 2 = Average/Standard benchmark; 3 = Strong/Efficient). The 3-point scale was selected for parsimony in this multi-actor, cross-country comparative context, acknowledging its limitation of reduced discriminatory power relative to 5- or 7-point scales. The benchmark was set at 2. The values above 2 indicated strong performance; below 2 indicate weak performance.

Weighted Score: $\text{Score}_i = W_i \times V_i$

Where W_i = relative weight , Vi = value

Wi= Mean Importance

∑Mean Importance

Vi=Wi×Pi

Pi= Performance score

4. RESULTS AND DISCUSSION

Result on comparative institutional performance of tobacco value chains in India and Zimbabwe. achieved by integrating the results of the value chain mapping, Welch's independent samples t-tests, SWOT analysis and Porter's value chain analysis. The discussion differentiates how value capture and actor interactions are shaped by different governance models which are regulated auctions and vertical contracts in India and Zimbabwe FCV tobacco value chain.

4.1 Value chain capture and mapping of FCV tobacco in India and Zimbabwe

Comparative value chain maps for Flue-Cured Virginia (FCV) tobacco in India and Zimbabwe are shown in Figure 1 and Figure 2, respectively. Both chains cover sequential nodes of input supply, primary production, farm level curing, value addition, marketing and price discovery, primary processing, industrial transformation and export orientation.

The institutional governance of FCV tobacco value chains in India and Zimbabwe

Different regulatory agencies underpin the institutional structures shaping tobacco production in India and Zimbabwe and determining the distribution of value and level of actor autonomy in their respective chains. In India, the nodal regulatory agency for inputs, auction pricing, quality control and extension services is the Tobacco Board of India (TBI). The TBI institutionalizes a state-led e-auction platform for transparent price discovery and electronic bidding, as in Fig 1. This governance structure ensures that farmers are able to retain a substantial share of value about 33.1% by reducing the direct buyer-producer power imbalances (Naik and Deshpande, 2021).

On the other hand, the governance of Zimbabwe is based on the Tobacco Industry and Marketing Board (TIMB) which regulates, licenses and supervises private entities. However, the Zimbabwean model has a contract-controlled zone that accounts for 89–95% of total output. This private sector led vertical integration, as shown in Fig 2, allows contractors to exercise considerable control through debt-financed inputs. This means that together contractors and exporters account for 60.9% of the total value, leaving farmers with the lowest share in the chain of 15.6%. This is consistent with the captive buyer-driven model identified in Global Value Chain (GVC) theory, where lead firms provide infrastructure but take most strategic economic (Shonhe, 2023).

Table 1: Actors involved in tobacco value streams for India and Zimbabwe

Actors	India				Zimbabwe			
	Cost (US$/kg)	Value (US$/kg)	Price (US$/kg)	(%)	Cost (US$/kg)	Value (US$/kg)	Price (US$/kg)	(%)
Farmers	1.45	1	2.45	33.10	1.9	0.53	2.43	15.60
Traders / Contractors	0.45	0.77	3.23	25.60	0.7	1.1	3.53	32.30
Processors	0.75	0.68	3.91	22.30	0.8	0.8	4.33	23.50
Exporters	0.6	0.58	4.49	19.00	0.95	0.98	5.31	28.60
Total Value Added		3.03		100		3.41		100

Source: TIB and TIMB report 2024- 2025 season production cost and selling price of FCV

Stakeholders involved in the FCV tobacco value chain of India and Zimbabwe

a) Farmers

Farmers represent the primary production node, but their value share depends on national systems.
In India, farmers retain about 33.10% ($1.00/kg), supported by transparent e-auctions.

Zimbabwean farmers receive only 15.60% ($0.53/kg) as shown in Table 1. High production costs of $1.90/kg and deductions for input loans within the contract-controlled zone identified in Fig 2 significantly erode net margins. The 17.5 percentage points gap meant that India's regulated auction model is more effective at protecting smallholder equity than Zimbabwe's contract model, argue that India's regulated auctions safeguard smallholder interests (Naik and Deshpande, 2021). Conversely, the results for Zimbabwe reflect the debt-trap dynamics identified where contract systems provide market access at the expense of farmer equity (Shonhe, 2023).

b) Traders and Contractors

These actors highlighted the most distinct functional difference between the two institutional systems. According to Table 1, India has traders capturing 25.60% ($0.77/kg). The role of the traders is strictly limited to grading and buying at auctions under the watch of the TBI to avoid excessive margins for middlemen. In Fig 2, contractors are the main actors in Zimbabwe, accounting for 32.30% ($1.10/kg) They are financiers and input suppliers that exert considerable control over the flow of products and value extraction (Dubb, 2018). Compared to India's auction system, the market power of intermediaries in Zimbabwe's contract model is significantly higher, especially as a result of the vertical integration of finance and marketing (Lencucha et al., 2023).

c) Processors

Despite having distinct qualitative implications, the processing actors demonstrated the greatest quantitative similarities. According to Table 1, processors account for 22.30% ($0.68/kg), representing a segment that contributes actual domestic value through packaging and redrying. 23.50% ($0.80/kg) are captured by Zimbabwean processors. But as Fig. 2 shows, these players are frequently functionally integrated with contractors, concentrating power downstream. Although the percentage proportions are similar, Zimbabwe's processing is operationally linked to the contractor-exporter complex, whereas India's processing sector functions with more autonomous control. In established commodity chains, processing margin stability (about 22–23%) frequently approaches a functional lock-in where stable margins are determined by technical expenses (Kaplinsky and Morris, 2001).

d) Exporters

The degree of global market orientation in contrast to domestic retention is revealed by exporter performance. According to Table 1, exporters hold the smallest portion of the Indian chain at 19% ($0.58/kg), suggesting a chain that places a high priority on value retention at the production node (Saxena et al., 2023). Zimbabwean exporters capture 28.60% ($0.98/kg).

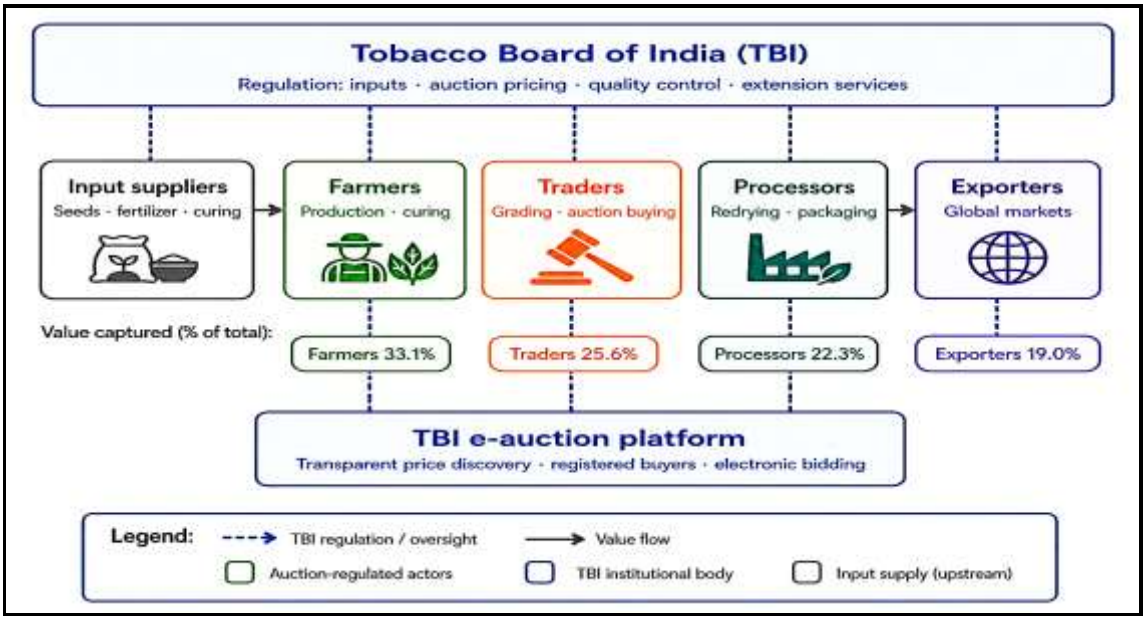

Figure 1: Tobacco value chain stages and value distribution in India

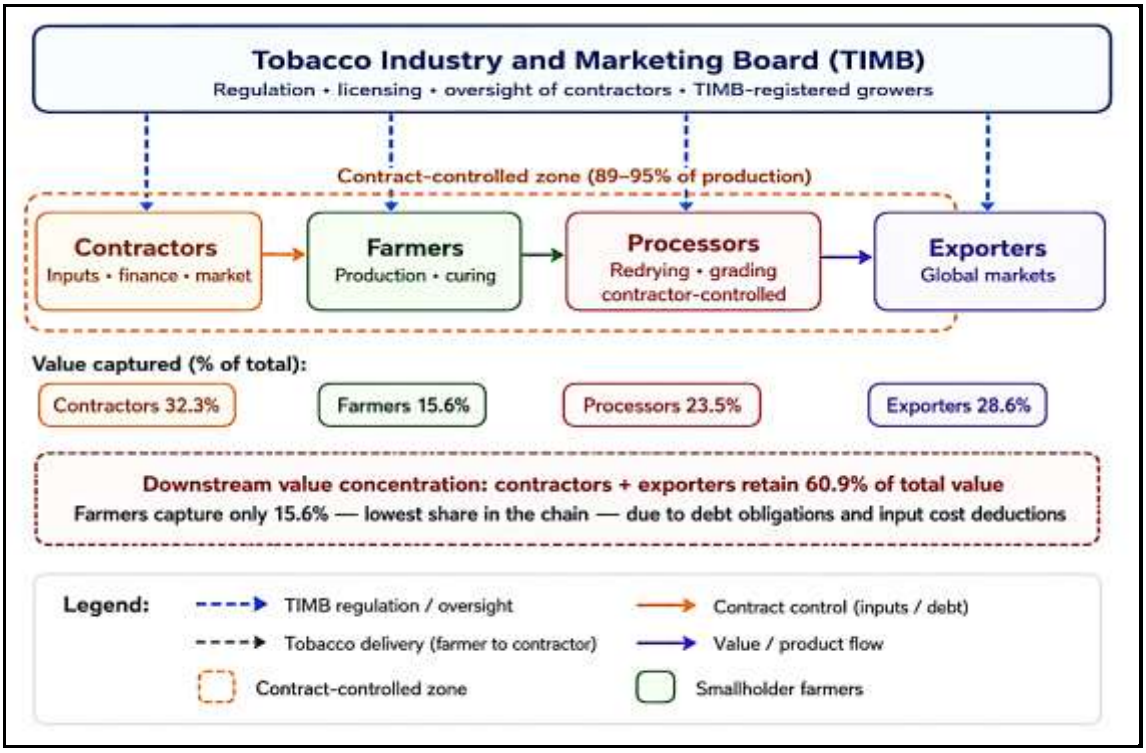

Figure 2: FCV tobacco value chain stages and value distribution in Zimbabwe

Figure 2 analysis confirmed significant downstream value concentration, where contractors and exporters combined retain 60.9% of the total value added. Zimbabwe's tobacco sector is structurally geared toward export capture. While Zimbabwe adds more total value per kg ($3.41 vs. India's $3.03), the benefits are disproportionately skewed toward downstream players, leaving the upstream farmer vulnerable (Scoones et al., 2018 ; Gereffi et al., 2005).

Comparative Hypothesis Testing of Value Capture Using Welch's t-Test

Welch's independent samples t-test indicates significant differences in value capture between India and Zimbabwe across four actor categories.

The null hypothesis (H_0) highlighted that there is no significant difference in the percentage of value attained by different actor categories in India and Zimbabwe. To test this, a Welch's independent samples t-test at $\alpha = 0.05$ was applied, revealing significant differences for farmers, traders/contractors, and exporters, while processors showed no statistically significant variation.

Table 2: Welch's t-test results for value capture (%) across actor categories in India and Zimbabwe's FCV tobacco value chain

Actor	India			Zimbabwe							
	Mean (%)	SD	SE	Mean (%)	SD	SE	Diff	t-stat	df	p-value	Cohen's d
Farmers	33.1	6.62	0.764	15.6	3.12	0.403	17.5	20.254	110.1	*** <0.001	3.38 large
Traders / Contractors	25.6	5.12	1.322	32.3	6.46	2.043	−6.70	−2.754	16.3	* 0.014	1.15 large
Processors	22.3	4.46	1.152	23.5	4.7	1.486	−1.20	−0.638	18.7	ns 0.531	0.26 small
Exporters	19	3.8	0.981	28.6	5.72	1.809	−9.60	−4.665	14.3	*** <0.001	1.98 large
Total	100	—	—	100	—	—	—	—	—	—	—

Take note. SD stands for standard deviation; SE for standard error; df for Welch-Satterthwaite degrees of freedom; Diff for mean difference (India minus Zimbabwe); Interpretation of Cohen's d effect size: small < 0.5, medium 0.5–0.8, large > 0.8. *** $p < 0.001$, ** $p < 0.01$, and ns = not significant ($p > 0.05$) are the significance levels. Every test is two-tailed, with $\alpha = 0.05$.

The biggest disparity is seen among farmers, where India (33.1%) significantly outperforms Zimbabwe (15.6%), with a very large effect size and a highly significant result ($p < 0.001$). A significant structural and institutional imbalance is highlighted by this 17.5 percentage point difference. Contractor domination is confirmed by the fact that Zimbabwe's contractors acquire substantially more value (32.3%) than Indian dealers (25.6%) ($p=0.007$).

On the other hand, there is no statistically significant difference ($p = 0.294$) between processors in Zimbabwe (23.5%) and India (22.3%). This implies that value capture for processors in both nations follows a similar pattern. With strong statistical significance ($p = 0.002$), Zimbabwean exporters (28.6%) hold substantially more value than Indian exporters (19.0%). The results indicate that value is unevenly distributed, with India benefiting farmers more and Zimbabwe benefiting downstream entities more.

4.2 SWOT Analysis of Indian and Zimbabwean FCV Tobacco Value Chains

The SWOT analysis in Table 2 presents a comparative strategic assessment of the FCV tobacco value chains in Zimbabwe and India according to the value distribution among the key actors. It uses quantitative data from the value capture analysis to assess external opportunities and threats, and internal strengths and weaknesses. This approach helps to take into account structural efficiency and competitiveness of both countries.

Table 2: The composite indices of the Indian and Zimbabwean tobacco SWOT analysis

Metric	India	Zimbabwe	Interpretation
Strength Index (SI)	4.2	3.0	India stronger internally
Weakness Exposure (WEI)	1.8	3.8	Zimbabwe more constrained
Opportunity Potential (OPI)	3.5	4.2	Zimbabwe higher untapped potential
Threat Vulnerability (TVI)	2.0	3.5	Zimbabwe more externally exposed
SPS = (SI+OPI) −(WEI+TVI)	4.0	−0.1	India net strategic advantage; Zimbabwe marginally negative

a) Strengths

India's tobacco value chain demonstrated good institutional efficiency, reflected in the country's high farmer value capture (33.1%) and more equitable value distribution. The regulated auction system of the Tobacco Board of India supports this by enhancing price transparency and reducing the role of intermediaries. India also benefits from a wide array of actors and an effective cost structure, both of which support system stability (Lencucha et al., 2022; Narayanan, 2022). In contrast, Zimbabwe is strong because of its high export performance (28.6%) and higher overall value generation (US$3.41/kg), driven by the integration of the Tobacco Industry and Marketing Board into the global market (Ponte and Sturgeon, 2022).

b) Weaknesses

India's primary weakness was its comparatively lower export share and downstream value addition, indicating untapped processing capacity. Sustainability is further threatened by exposure to international price volatility and regulatory weakness (Minten et al., 2022). However, due to contract farming systems in tobacco, Zimbabwe faces more significant structural issues, such as low farmer value capture (15.6%), high contractor dependence, and intermediary dominance (32.3%), which diminish farmer bargaining power and income retention (Magati et al., 2023; Lencucha et al., 2022). Value retention is further hampered by limited local processing.

c) Opportunities

India has enormous potential to increase its manufacturing and processing, by leveraging its cost effectiveness and institutional strength. The opportunities for upgrading value chains are also available through technological advances and increasing global demand (Narayanan, 2022).

Zimbabwe's export potential and advantageous international prices present opportunities, and there is much room to boost local value addition through processing (Ponte et al., 2022; Magati et al., 2023).

d) Threats

Global anti-tobacco policies, decreasing consumption, climate variability, and price volatility are external concerns that could impact India's long-term stability (Lencucha et al., 2022; WHO, 2023). Due to its reliance on exports and middlemen, Zimbabwe is particularly susceptible to changes in exchange rates, shocks from the climate, and instability in international markets. According to research from the global value chain, this perpetuates structural disparities and farmer vulnerability (Ponte et al., 2022). Zimbabwe's slightly negative SPS (−0.1) shows that its external prospects are mostly countered by internal flaws and threat exposure, whereas India's positive SPS of 4.0 verifies net institutional competitiveness.

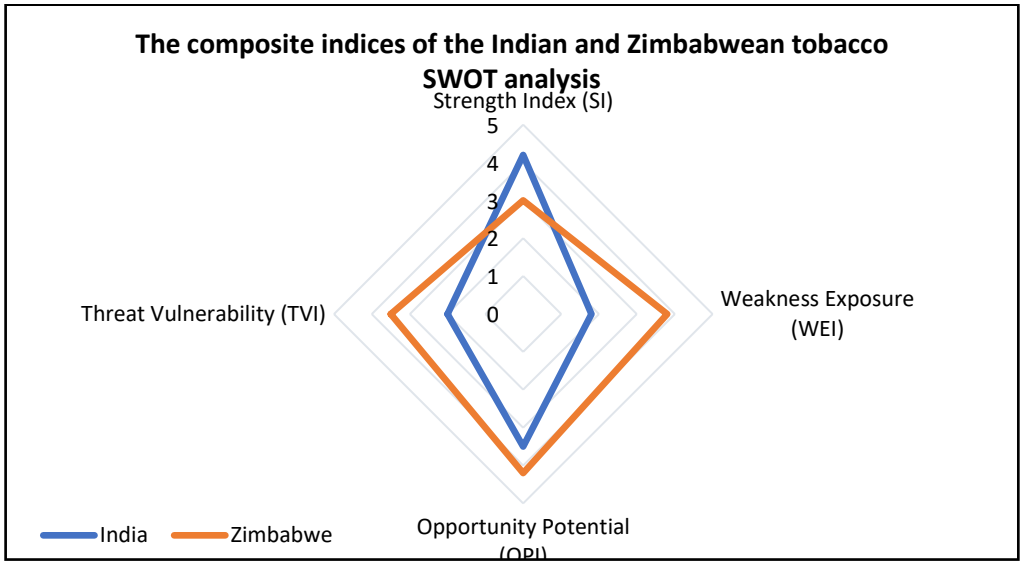

Figure 3: Comparative SWOT framework of tobacco value chains in India and Zimbabwe

4.3: Porter Value Chain Based Performance Measurement of Tobacco Value Chains

A multifaceted understanding of the institutional limitations and competitive advantages that FCV tobacco farmers in Zimbabwe and India face was made possible by the application of Porter's Value Chain framework. The analysis determined how institutional dynamics affect the two sectors' operational efficiency (Primary Activities) and enabling environment (Support Activities) by assigning a strategic value to each activity.

Table 4: Porter-weighted performance scores of the FCV tobacco value chains in India and Zimbabwe

Primary Activities (India)				**Primary Activities (Zimbabwe)**			
Activity	**Relative Weight**	**Value**	**Score**	**Activity**	**Relative Weight**	**Value**	**Score**
Inbound Logistics	0.14	2.2	0.31	**Inbound Logistics**	0.14	1.8	0.25
a. Fragmented smallholder farming but relatively better input access (seeds, fertilizer)				a. Heavy dependence on contract farming inputs			
b. Established procurement systems (auction platforms, private buyers)				b. Limited farmer autonomy and input constraints			
Operations	0.14	2.3	0.32	**Operations**	0.14	2	0.28

c. Efficient curing and grading practices (especially in organized sectors)				c. Good quality tobacco production but limited mechanization			
d. Moderate mechanization and processing efficiency				d. Strong contractor control over production processes			
Outbound Logistics	0.11	2.1	0.23	**Outbound Logistics**	0.11	1.9	0.21
e. Strong export infrastructure and logistics networks				e. Export-oriented but infrastructure bottlenecks exist			
f. Some inefficiencies in rural transport and storage				f. Dependence on contractors for logistics			
Marketing & Sales	0.13	2.2	0.29	**Marketing & Sales**	0.13	2.1	0.27
g. Strong exporter networks and auction systems				g. Auction floors and contractor dominance			
h. Regulated but organized tobacco marketing systems				h. Strong international demand (especially China-linked markets)			
Service	0.08	2	0.16	**Service**	0.08	1.7	0.14
i. Moderate extension services and farmer support				i. Limited independent farmer support systems			
Support Activities (India)				**Support Activities (Zimbabwe)**			
Activity	**Relative Weight**	**Value**	**Score**	**Activity**	**Relative Weight**	**Value**	**Score**
Firm Infrastructure	0.17	2.2	0.37	**Firm Infrastructure**	0.17	1.9	0.32
a. Regulatory systems (e.g., tobacco boards) support coordination				a. Weak financial systems and high dependence on private contractors			
b. Export-oriented policy support				b. Policy and institutional instability challenges			
Human Resource Management	0.1	2	0.2	**Human Resource Management**	0.1	1.8	0.18
c. Moderate skill levels among farmers and workers				c. Skills constraints among smallholder farmers			
Technology Development	0.09	2.1	0.19	**Technology Development**	0.09	1.7	0.15
d. Adoption of improved curing and grading technologies				d. Limited access to modern curing and production technologies			
Procurement	0.04	2.2	0.09	**Procurement**	0.04	1.8	0.07
e. Relatively stable access to inputs through institutional systems				e. Input supply controlled by contractors, often costly			
Total Support Activities Score			**0.85**	**Total Support Activities Score**			**0.72**

(a) Primary Activities

The actual production, distribution, and sale of the product are represented by primary activities. With a combined emphasis on transparency and institutionalized logistics, India has a competitive advantage in this field, as Table 4

illustrates. Due to well-established procurement procedures and improved input access for smallholders, India scored higher in Inbound Logistics & Operations (0.31) than Zimbabwe (0.25). Coordinated curing and grading procedures are an advantage to India's operations (0.32), while tight contractor supervision is a challenge to Zimbabwe's operations (0.28) (Chazovachii et al., 2021). Zimbabwe produces good quality leaf. The outbound logistics and marketing were supported by the strong exporter networks and the TBI e-auction system, and the marketing score of India was 0.29, which indicates that the institutionalized auction platforms reduce the logistical risks for the small-scale exporters (Naik and Deshpande, 2021). Zimbabwe (0.27) remains competitive but the score of 0.21 indicates the country's infrastructural limitations and reliance on contractors for logistics due to global demand. Operational limitations in Zimbabwe were a result of contract farming that guaranteed production but often limited the operational freedom of the farmer (Shonhe, 2023).

Support Activities

The chain's long-term sustainability and coordination are determined by support activities. Table 4 data revealed a substantial support disparity, with India outperforming Zimbabwe with a score of 0.85 compared to the latter's score of 0.72. India's score of 0.37 indicates a stable regulatory framework overseen by the Tobacco Board, whereas Firm Infrastructure is the most weighted support activity (0.17) (Goel et al., 2024). Zimbabwe's poor financial systems and heavy reliance on private contractors contributed to its score of 0.32. Zimbabwe's lower score (0.15) reflects smallholders' poor access to contemporary infrastructure, whereas India's Technology & Procurement has a considerable edge in technology development (0.19) through enhanced curing and grading technologies (Kurian, 2020).

Due to input price inflation and contractor-controlled supply lines, which are significant obstacles to farmer profitability, procurement is highly regulated and expensive in Zimbabwe (0.07).

The findings of Porter's study complement Fig. 4, which shows how Zimbabwe's contract-controlled zone restricts farmers' ability to operate strategically in both primary and support operations. Zimbabwe's lower overall support activities score of 0.72 indicates that the contract model is unable to create the long-term institutional framework required for farmer autonomy. On the other hand, India's better results (Total Support: 0.85) demonstrate the effectiveness of a regulated, state-facilitated auction approach in creating a more robust value chain.

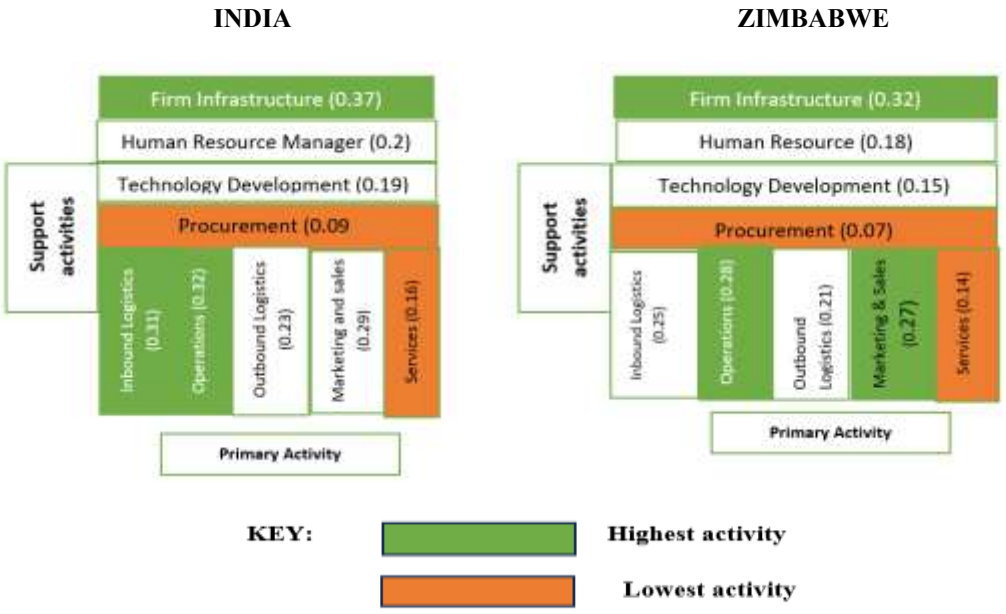

Figure 4: Highest and lowest value activities in the tobacco value chain in India and Zimbabwe.

Global Value Chain (GVC) theories state that while Zimbabwe's chain demonstrates traits of a captive buyer-driven model in which lead firms (contractors) supply the support inputs but retain the majority of the strategic value, India's chain is more balanced because of institutional oversight (Gereffi et al., 2005; Kaplinsky and Morris, 2001).

4.4 Recommendations

The study's empirical results in value chain mapping, Porter's performance analysis, and SWOT analysis serve as the foundation for the following suggestions.

1. **Investment in Local Value Addition and Processing (Zimbabwe)**: Given the farmer value share of 15.6% and the concentration of 32.3% among contractors, Zimbabwe needs to improve local processing to keep greater downstream earnings and reduce dependency on exports (Ponte and Sturgeon, 2022).

2. **Downstream Innovation in Alternative Tobacco Products (India)**: Although India's Porter score of 2.16 shows a well-coordinated chain, long-term competitiveness under increasing FCTC regulatory pressure requires innovation in reduced-risk and alternative tobacco products (WHO, 2023; Gruszczynski & Melillo, 2020).

3. **Institutional Knowledge Exchange**: Zimbabwe can adopt India's quality standards and auction procedures, while India can learn from Zimbabwe's contract-based input support for smallholders.

4. **Contract Farming Systems Reform (Zimbabwe):** Establish fair contract standards, minimum price guarantees, transparent input deductions, and more stringent controls to reduce contractor dominance (Shonhe, 2023; Scoones et al., 2018).
5**. Increasing Farmer Bargaining Power:** Despite India's relatively inclusive value distribution (farmer share: 33.1%), institutional constraints limit effective income at the farm level, particularly in Zimbabwe (15.6%). Policy interventions can promote cooperatives and Farmer Producer Organizations (FPOs), expand access to auction-based marketing choices, and establish digital market information systems to assist farmers in transitioning from price takers to active price negotiators (Ravi et al., 2023).

5. CONCLUSION

This study shows that institutional governance has a major impact on the efficacy and inclusivity of FCV tobacco value chains. In India, coordinated support services, transparent market operations, and balanced participation from all stakeholders depend on institutions like the Tobacco Board of India, which is supported by the government and official banking institutions. In contrast, Zimbabwe's system, which is overseen by the Tobacco Industry and Marketing Board (TIMB) but is heavily influenced by foreign contract companies, exhibits a governance structure where control over marketing, finance, and inputs is concentrated, limiting both wider value distribution and domestic value addition. The resilience of these systems will be determined in the future by their capacity to adjust to shifting market conditions, international legal frameworks, and sustainability criteria.

Enhancing the effectiveness of regulations, encouraging local processing and innovation, and fortifying institutional collaboration will be essential. Future research should examine how organizations like TBI and TIMB may further adapt through legislative change, technology integration, and stakeholder collaboration in order to support the creation of a more sustainable and inclusive tobacco value chain.

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Conflict of interest

The authors declare no conflict of interest.

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