



Marketing of Arabica Coffee by Farmer Producer Organisations (FPO's) in Tribal Areas of Alluri Sita Rama Raju District in Andhra Pradesh

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ABSTRACT

The experiment was conducted during the agricultural year, 2024 to 2025 at Alluri Sita Rama Raju District (ASR), Andhra Pradesh, India to study the Marketing of Arabica Coffee by Farmer-Producer Organisations (FPOs). Three FPOs from the three selected mandals from study area were selected such as Dhimsa Natural Farming FPO in Araku Valley, Paderu Farmers Producer Company Ltd in Paderu and Maa Thota Tribal Farming & Marketing Producer Co. Ltd in Chinthapalle. It is analysed that, the total cost incurred by FPO Beneficiary for four years was ₹ 2,12,500 and non-beneficiary was ₹ 3,00,500. The total yield obtained at 5th year to FPO beneficiaries was 3400 kg ha⁻¹ where whereas for the non-beneficiary was 2050 kg ha⁻¹. The average selling price by FPO beneficiary to consumers was ₹ 700 kg⁻¹, which was higher than selling price by non-beneficiaries (₹ 480). The percentage age of profit margin for beneficiary is 91.07 whereas for the non-beneficiary is 69.46. The analysis of marketing channels showed that FPOs create significant value post-harvest. Maa Thota FPO demonstrated the highest marketing efficiency (Conventional Index: 2.29 for parchment) and achieved the highest final consumer price (₹ 700 kg⁻¹ for parchment). Interestingly, Paderu FPO, while less efficient, provided farmers with the highest share of the consumer's rupee (40.74%), indicating a more equitable distribution of value. FPO beneficiaries reported better yields, income, training and access to markets after joined in group.

KEYWORDS: Farmer producer organisation, coffee, marketing .beneficiaries, tribal farmers

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1. INTRODUCTION

Coffee (*Coffea arabica* and *Coffea robusta*) is known as one of the most significant beverages worldwide. Globally, it is recognized as the second most traded commodity, with an annual production volume reaching 178 mt. Coffee is primarily concentrated in the southern states of Karnataka, Kerala, Tamil Nadu, Andhra Pradesh, and Odisha. India is the seventh-largest coffee producer globally with exports reaching \$1.29 billion in FY 2023–24 which almost double the \$719.42 million in 2020–21 (Anonymous, 2025a). India's coffee exports have grown significantly due to the increasing global demand for its rich and unique flavors. In the first half of January 2025 India exported over 9,300 tonnes of coffee with top buyers including Italy, Belgium, and Russia (Anonymous, 2025).

Coffee arabica, comprising about 30% of India's coffee production which was valued for its superior flavour, while Coffee robusta accounts for the remaining 70% which is favoured for its resilience to harsh climatic conditions and higher yield potential (Van der Vossen et al., 2015). Alluri Sita Rama Raju (ASR) district is situated in Andhra Pradesh. Known for its rugged terrain, rich forest resources, and cultural diversity. The district spans around 12.25 lakh hectares, of which approximately 7.76 lakh hectares are forest-covered. The high-altitude slopes of the Eastern Ghats, combined with favourable climate conditions, make ASR particularly well-suited for growing quality coffee (Nadaf et al., 2024). Coffee grown in Araku Valley is almost entirely pure Arabica, which is known for its smooth flavour and distinctive aromatic profile. Nearly 99% of the farmers in these non-traditional areas cultivate Arabica, benefiting from the high-altitude terrain and organic-friendly environment of the Eastern Ghats (Keerthana et al., 2025).

In recognition of its unique aroma and sustainable organic farming practices led by tribal communities (Pandit et al., 2015). Currently, approximately 90% of Araku's total coffee production is exported to countries like Sweden, Switzerland, Italy, and the United Arab Emirates, where it is sold at premium prices (Raimondo, 2022). Araku Valley Coffee was awarded a Geographical Indication (GI) tag in 2019 by the Department for Promotion of Industry and Internal Trade under the Ministry of Commerce and Industry (Nirosha and Mansingh, 2024). This recognition has helped elevate the brand and value of Araku coffee in global markets (Sharma et al., 2016). The success of Araku coffee not only reflects the region's agricultural potential but also stands as a model of how tribal farmers can thrive through collective cultivation, value addition, and branding of a local product in global markets (Ravikishore, 2024). Despite the favourable natural environment and the scale of cultivation, coffee farmers in the ASR district face a

variety of structural and operational challenges (Degaga et al., 2017). These include limited access to modern agronomic practices, poor exposure to mechanization and significant post-harvest losses owing to inadequate storage and processing infrastructure (Akkamma and Mishra, 2018). Moreover, smallholder farmers often rely on traditional methods of cultivation and lack the resources or technical knowledge to enhance productivity. The absence of efficient marketing channels forces many of these farmers to sell their produce to intermediaries at low prices, reducing their income potential and weakening their bargaining power (Pasha and Paramashivaiah, 2018). In response to these challenges, Farmer-Producer Organizations (FPOs) have emerged as a promising institutional mechanism to support tribal coffee farmers in the ASR district. FPOs offer collective platforms that enable farmers to access quality inputs such as improved seedlings, fertilizers, and plant protection chemicals through bulk procurement at lower costs (Ravikishore et al., 2025). On the output side, FPOs aggregate produce from multiple farmers, allowing direct linkage with buyers, thereby reducing dependence on middlemen and improving price realization (Adhikari, 2021, Arahant, 2025). FPOs helps in enhancing the production and marketing of coffee which creates sustainable growth among tribal communities (Siddalingaswamy, 2025). The objective of the study is try to understand the marketing channels of Arabica Coffee and identifying the relative difference in income earning among both FPO beneficiaries and non-beneficiaries in tribal areas in ASR district .

2. MATERIALS AND METHODS

The experiment was conducted during January to May month of agricultural year 2025 in ASR district. Paderu Revenue Division in Alluri Sita Rama Raju District stands out as the heart of coffee cultivation. Its high elevation, rich forest cover, and concentration of functional FPOs and SHGs make it an ideal location for research. Three mandals, Araku Valley, Chinthapalli, and Paderu were chosen based on the highest area under coffee cultivation, production levels, and concentration of Farmer-Producer Organizations (FPOs) (Joshi and Choudhary, 2018). The data was collected during the year 2025. Three functioning FPOs from the three selected mandals are identified, such as Dhimsa Natural Farming FPO in Araku Valley, Paderu Farmers Producer Company Ltd in Paderu, and Maa Thota Tribal Farming and Marketing Producer Co. Ltd in Chinthapalle. A total of 80 coffee farmers who are members of FPOs were selected as the beneficiary sample. An equal number of 80 non-beneficiary coffee farmers were selected from nearby villages in the same mandals to facilitate comparative analysis on production and marketing aspects. By comparing the cost structure of FPO beneficiary farmers

with FPO non-beneficiary farmers, we can easily understand how FPOs help reduce input costs, facilitate access to affordable credit, and provide shared infrastructure, which helps in lowering overall production expenses. Secondary data was collected from sources such as the Department of Horticulture (Andhra Pradesh), Coffee Board, FPO records, district agricultural reports, and Indiatat. These data sources provided background information on the coffee area, production trends, and FPO presence in the study area.

2.1. Return on investment (ROI)

Return on Investment was used to evaluate the financial returns relative to the investment made in coffee cultivation and marketing. These indicators calculated for both FPO beneficiaries and non-beneficiaries to evaluate the impact of FPOs on farm-level economic outcomes, focusing on production efficiency and marketing returns. The results helped in identifying whether FPO membership leads to higher profitability and better returns in coffee farming (Venkattakumar et al., 2019)

$$ROI = (\text{Net returns} / \text{Total investment}) \times 100$$

ROI expresses profitability as percentage

2.2. Marketing cost

The cost involved in moving the product from the point of production to the point of Consumption i.e., the cost of performing various marketing functions and cost associated with middlemen

$$C = C_f + C_{m1} + C_{m2} + \dots + C_{mi} + \dots + C_{mn}$$

Where,

C = Total cost of marketing of the commodity

C_f = Cost incurred by the farmer

C_{mi} = Costs associated with the i^{th} middleman

i = ranges from 1 to n

2.3. Producer's price

It is the net price received by the farmer at the time of first sale. It is equal to the wholesale price at the primary assembling centre minus charges borne by the farmer in selling his produce.

$$\text{Net price received (PF)} = PA - CF$$

Where,

PA = Wholesalers' Price in the primary assembling market

CF = Cost borne by the farmer

2.4. Marketing margin by the middleman

Profits of the various market functionaries involved in moving the produce from the initial point of production till it reaches the ultimate consumer. This is the difference between the total payments (Cost+Purchase Price) and receipts (Sale Price) of the middleman (i^{th} agency)

a) Absolute margin of the i^{th} middleman:

$$A_{mi} = P_{ri} - (P_{pi} + C_{mi})$$

b) %age Margin of i^{th} middleman:

$$P_{mi} = [P_{ri} - (P_{pi} + C_{mi}) / P_{ri}] \times 100$$

c) %age markup of i^{th} middleman:

$$M_i = [P_{ri} - (P_{pi} + C_{mi}) / P_{pi}] \times 100$$

Where,

P_{ri} = Total Value of receipts per unit (Sales price)

P_{pi} = Purchase value of goods per unit (Purchase price)

C_{mi} = Cost incurred on marketing per unit

2.5. Conventional method (E) of market efficiency

This method measures efficiency as the ratio of the value added by the farmer to the total marketing cost. A higher value indicates better efficiency in terms of cost-effectiveness.

Conventional method = Value added by farmer / Total marketing costs.

2.6. Shepherd's approach (ME) of market efficiency

Shepherd's approach = RP/MC

RP = Consumer's Purchase Price: MC = Total Marketing Cost

A higher Shepherd's index indicates a more efficient marketing system with lower costs relative to the total value transacted.

2.7. Acharya method (MME) = FP/MC + MM

FP = Price received by farmer

MC = Total Marketing Cost

MM = Marketing Margin

3. RESULTS AND DISCUSSION

3.1. Cost incurred by coffee FPO beneficiaries and non-beneficiaries in ASR district

The cost incurred by farmers reflected the efficiency of input use, access to services and institutional support, all of which are influenced by FPO membership. Arabica coffee plantations in the tribal mandals of Araku, Chintapalli, and Paderu had significant initial investment during the first three years, which constituted the non-bearing phase from 4th year bearing phase starts as shown in Table 1. During this period, key activities included jungle clearance, land preparation, pit digging, planting, shade tree establishment and early care of young coffee plants (Nisha et al., 2018). These years formed the foundation for future productivity. The cost incurred by FPO beneficiaries was ₹ 2,12,500, and for non-beneficiaries was ₹ 3,00,500. The comparative production cost was ₹ 61000. Thus, FPO beneficiaries save 25% reduction in cost of establishment when compared

Table 1: Establishment cost of arabica coffee for both FPO beneficiary and FPO non-beneficiary (Per hectare)					
Activity	Amount (in rupees)				Remarks
	Year	FPO beneficiary	FPO non-beneficiary	Additional cost incurred by FPO non-beneficiaries	
<u>A. Labour costs</u>					
Jungle clearing and land preparation	1 st Year	20,000	22,000	2,000	One-time, intensive activity
Pitting	1 st Year	12,000	14,000	2,000	For coffee and shade trees
Planting and gap filling	1-3 Years	13,000	15,000	2,000	Initial and replanting
Weeding and inter-cultivation	1-3 Years	42,000	46,000	4,000	3–4 rounds per year
Training and pruning	2-3 Years	9,000	10,000	1,000	For shaping young plants
Weeding (3–4 rounds/year)	4 th year	20,000	22,000	2,000	Same effort; minimal FPO impact
Training and pruning	4 th year	6,000	10,000	4,000	FPO organizes free training and demos
Harvesting and post-harvest labour	4 th year	14,000	16,000	2,000	Saving and planning/logistics
Subtotal-A	1-4 Years	1,36,000	1,55,000	19,000	
<u>B. Material costs</u>					
Coffee saplings	1 st Year	8,500	18,000	6,000	~1650 plants @ 10–12 each
Shade tree saplings	1 st Year	3,000	5,000	2,000	Silver oak or native species
FYM & compost	1-3 Years	10,500	20,000	5,000	For soil enrichment
Fertilizers (NPK)	1-3 Years	9,000	18,000	3,000	Doses increase with age
Plant protection chemicals	1-3 Years	7,000	12,500	2,000	For borer and rust
Fertilizers (NPK, micronutrients)	4 th year	10,000	16,000	6,000	Bulk purchase with subsidy or credit
FYM/organic compost	4 th year	5,000	7,000	4,000	compost units and tribal subsidy
Plant protection chemicals	4 th year	9,000	10,000	4,000	Bulk supply and pest advisory from FPO
Subtotal-B	1-4 Years	62,500	1,06,500	32,000	
<u>C. Miscellaneous costs</u>					
Fencing, tools, transport, etc.	1-3 Years	9,000	19,500	3,500	Shared tools/logistics for Beneficiaries
1. Transport (to collection center)	4 th year	2,500	10,500	3,000	FPO arranges shared or free transport
2. Drying, storage and processing	4 th year	2,500	9,000	3,500	drying yards, storage, pulper units
Subtotal-C	1-4 Years	14,000	39,000	10,000	
Total cost (A+B+C)	1-4 Years	2,12,500	300,500	61,000	FPO beneficiaries saves 25% reduction in cost of establishment when compared to FPO non bene-ficiaries

1US\$=INR 90.44

to FPO non beneficiaries save 25% reduction in cost of establishment when compared to FPO non-beneficiaries FPOs have a strong linkage with the various institutions which has acted as a great catalyst in strengthened the farmers to enhances their knowledge regarding various things like input purchase-seeds, fertilizers and pesticides (Sharma, 2022).

3.2. Market channel of coffee farmer producer organisation in tribal areas of alluri sita rama raju district

The marketing of coffee by the selected Farmer Producer Organizations (FPOs) are Maa Thota Tribal Farming and Marketing Producer Company Ltd in Chinthapalli, Paderu Farmers Producer Company Ltd in Araku Valley, and Dhimsa Natural Farming FPO in Minumuluru (Paderu), followed a well-structured multi-stage supply chain that takes the product from farmers to end consumers as found in study by Kumar et al., 2023 in their research work about wheat marketing by considering three marketing channels such as : i) Producer-consumer ii) Producer-village trader-consumer; iii) Producer-village trader-wholesaler-retailer-consumer. Before handing the produce over to the FPOs, farmers beared the basic marketing costs such as packing in jute bags, transportation, and loading or unloading (Thanuja and Singh, 2017).

At the initial stage, farmers sell their coffee in raw, ungraded form, either as parchment or dry cherry, as shown in Table 2. The prices they received ranged from ₹ 217 to ₹ 225 per Kgs for parchment and ₹ 105 to ₹ 125 per kg for dry cherry. Once the coffee reaches the FPOs, it goes through various value-addition processes like processing, grading, packaging, and storage. These efforts enhance the quality and marketability of the product (Hartatri et al., 2019). At this stage, the FPOs began to realized their margins. Among the three FPO's , Maa Thota stands out with the highest marketing margin with ₹ 120 per kg for parchment and ₹ 63 for dry cherry which indicated efficient processing and better price realization. Dhimsa followed closely with margins of ₹ 109 and ₹ 56 respectively, while Paderu FPC recorded comparatively lower margins of ₹ 90 and ₹ 49 due to higher operational costs and limited market access. On average, wholesalers maintain a 12% profit margin. For parchment coffee, their earnings were around ₹ 59, ₹ 43 and ₹ 47 per kg for Maa Thota, Paderu, and Dhimsa, respectively. For dry cherry, the margins were slightly lower, ₹ 34.44, ₹ 20 and ₹ 18. These values reflect the logistical expenses and scale at which each wholesaler operates.

At the final stage of the chain, retailers handle branding and pack the coffee into consumer-friendly units. Retailers generally maintained 15% margin. Maa Thota's coffee allowed retailers to earn the highest margin for parchment at ₹ 89 per kg, while Paderu and Dhimsa offered lower

returns at ₹ 20 and ₹ 25 respectively (Pasupuleti, 2025) . Interestingly, for dry cherry, Dhimsa offered the highest retailer margin of ₹ 38 followed by Paderu at ₹ 37 and Maa Thota at ₹ 52.86 indicating strong consumer demand and better branding strategies in some segments which enhance farmers income (Gautam and Mallaiah, 2024). As a result of this entire chain, the final consumer prices for parchment coffee were highest for Maa Thota at ₹ 700 per kg, followed by Dhimsa at ₹ 585 and Paderu at ₹ 540. In the case of dry cherry, consumer prices were ₹ 434 for Maa Thota, ₹ 350 for Dhimsa, and ₹ 320 for Paderu. Overall, the analysis emphasizes how well-organized post-harvest processes and market linkages can significantly improve profitability for producers and stakeholders across the coffee value chain.

The analysis of marketing costs and margins for the three FPOs are Maa Thota (Chinthapalli), Dhimsa (Araku Valley) and Paderu FPC (Minumuluru) provides insights into how value was created and distributed along the coffee value chain. Farmers received ₹ 217 to ₹ 225 per kg for parchment and ₹ 105 to ₹ 125 for dry cherry, with additional marketing expenses like packing, transport and loading bringing their total costs to ₹ 44 to ₹ 50 (parchment) and ₹ 19 to ₹ 25 (dry cherry). After these costs, they sold to FPOs at prices ranging from ₹ 262 to ₹ 275 for parchment and ₹ 124 to ₹ 145 for dry cherry.

FPOs then undertook processing, grading, and logistics, incurring marketing costs of ₹ 86 to ₹ 99 for parchment and ₹ 57 to ₹ 79 for dry cherry. Maa Thota earned the highest marketing margins, ₹ 120 (parchment) and ₹ 63 (dry cherry), followed by Dhimsa and Paderu. Selling prices to wholesalers ranged between ₹ 440 to ₹ 494 (parchment) and ₹ 230 to ₹ 287 (dry cherry). Wholesalers added their own costs and margins before passing the coffee to retailers, who further branded and packed the product for consumers. Retail margins were highest for Maa Thota's parchment coffee (₹ 89), contributing to the highest consumer prices, ₹ 700 for parchment and ₹ 434 for dry cherry. Dhimsa and Paderu followed with lower retail prices. The results are similar to Nayak et al. (2014) in their study about marketing efficiency of different Market Channels for Brinjal in Odisha.

In terms of value share, Paderu FPC provided the highest return to farmers, 40.74% of the consumer price for parchment, showed better price transmission. FPO shares were also the highest in Paderu and Dhimsa, indicating effective cost and margin management. For 2024-25, Dhimsa plans to sell 200 1250s of parchment coffee, generating ₹ 88 lakhs, while Paderu aims for 16000 kgs (₹ 73.6 lakhs) and Maa Thota 12000 kgs (₹ 59.28 lakhs). Overall, while all FPOs are financially viable, Maa Thota leads in margins and pricing, and Paderu delivers better

Table 2: Market channel for three selected FPOs in ASR district (FPO beneficiaries N=80)

Sl. No.	Name of FPO	Maa thota tribal farming and marketing producer Co. Ltd N=30		Paderu farmers producer company Ltd N=30		Dhimsa natural farming FPO N=20	
		Chinthapalli		N=30		Minumuluru (Paderu)	
	Market channel	Parchment (₹ kg ⁻¹)	Dry cherry (₹ kg ⁻¹)	Parchment (₹ kg ⁻¹)	Dry cherry (₹ kg ⁻¹)	Parchment (₹ kg ⁻¹)	Dry cherry (₹ kg ⁻¹)
1.	Net price received by farmer (Raw and ungraded)	225	125	22	105	217	114
2.	Jute bags packing	25	5	19	3.8	22.50	46
3.	Transportation	10	13	9	9.5	8	69
4.	Loading and unloading	15	7	16	5.7	14.50	11.50
	Total marketing cost	50	25	44	19	45	23
	Selling price by farmers	275	145	264	124	262	137
Product processing by FPO							
1.	Purchase price of coffee beans by FPO	275	145	264	124	262	137
2.	Processing charges	32	27	28	24	29	22
3.	Grading and standardisation	14	10	12.50	11	12	7
4.	Packing	22	15	20	7	17	11
5.	Storage	15	14	12	5	13.50	13
6.	Transportation	16	13	13.50	10	17.50	9
	Marketing cost	99	79	86	57	89	62
	Marketing margin	120	63	90	49	109	56
	FPO selling price	494	287	440	230	460	255
	Wholesaler purchase price	494	287	440	230	460	255
1.	Storage	9	7	7.5	3.50	6.50	2.50
2.	Transportation	14	8	6.0	2.00	7.50	2
3.	Packing according to different sizes	11	9	5.50	3.00	8	4.50
4.	Loading and unloading	12	7	8	1.50	5	3
	Marketing cost	46	31	27	10	27	12
	Marketing margin	59	34.44	43	20	47	18
	Wholesalers selling price	599	352.44	510	260	534	285
	Retailers purchase price	599	352.44	510	260	534	285
1.	Branding, packing into small packets	12	29	10	23	26	27
2.	Marketing margin by retailers	89	52.86	200	37	25	38
	Retailer selling price	700	433.86	540	320	585	350
	Consumer purchase price	700	434	540	320	585	350

benefits. There is no involvement of FPO and processing units while marketing of coffee beans to consumers for non-beneficiaries in the study area, as shown in Table 3. The net price received by the farmer was ₹ 175 per kg for Parchment and ₹ 95 for Dry cherry per kg. The producer's share in consumer rupee is 39.03% and 34.05 % for Parchment and dry cherry, respectively, as shown in Table 4. The results are

similar to Shabana et al. (2022) in their study about cotton marketing in which showed that producer's share in the consumers' rupee received by the FPO farmers is more than the Non-FPO farmers which accounted to 88.96% in the Channel I which was higher compared to Channel II accounted to 85.41% in the cotton marketing,

Table 3: Market channel for FPO non-beneficiaries (N=80)

Sl. No.	Market channel	Non-FPO members in the ASR district	
		Parchment (₹ kg ⁻¹)	Dry cherry (₹ kg ⁻¹)
1.	Net price received by farmer (Raw and ungraded)	175	95
	Total marketing cost	61	25
	Selling price by farmers	236	120
2.	Product processing by FPO	-	-
	Marketing cost	-	-
	Marketing margin	-	-
	FPO selling price	-	-
3.	Wholesaler purchase price	372	192
	Marketing cost	22	8
	Marketing margin	44.64	23.04
	Wholesalers selling price	438.64	223.04
4.	Retailers purchase price	438.64	223.04
	Marketing cost	9.60	26.76
	Marketing margin by retailers	57.02	28.99
	Retailer selling price	448.30	278.80
	Consumer purchase price	448.30	278.80
	Farmer share in consumer rupee (%)		34.07

3.3. Measurement of the efficiency of notable three FPOs in the ASR district

The marketing efficiency of the three Farmer Producer Organizations (FPOs) are Maathota in Chinthapalli, Dhimsa in Araku Valley, and Paderu FPC in Minumuluru, was assessed using both the Conventional and Shepherd approaches for parchment and dry cherry coffee. (Sasikanth and Ravichandran, 2024) The Conventional method, which measures value added per unit of marketing cost, revealed that Maathota FPO exhibited the highest efficiency in parchment coffee marketing, with an index of 2.29 as shown in Table 5. This suggests that for every rupee spent on marketing, ₹ 2.29 worth of value was added. For dry cherry, its efficiency stood at 1.88, which, although slightly lower, still reflects good marketing performance (Shabana et al., 2022). Dhimsa FPO showed moderate efficiency levels with a value of 1.92 for parchment and 1.97 for dry cherry, indicating balanced value relative to marketing costs. Similarly, Paderu FPO demonstrated

stable efficiency across both forms with indices of 1.97 for parchment and 1.90 for dry cherry. Using the Shepherd's approach, which assesses marketing efficiency as the ratio of consumer price to marketing cost, Maathota again led in parchment coffee with an efficiency index of 3.38. This implies that every one rupee spent on marketing yielded ₹ 3.38 from the consumer end. Dhimsa and Paderu followed closely with indices of 3.23 and 3.13, respectively. In the case of dry cherry, Shepherd's efficiency ranged from 2.65 (Maathota) to 2.94 (Dhimsa) and 2.82 (Paderu), indicating slightly lower returns compared to parchment coffee but still within a competitive range. Overall, Maathota FPO displayed the highest marketing efficiency, particularly in parchment coffee, suggesting better price realization and marketing effectiveness (Kumar et al., 2023). Meanwhile, Dhimsa and Paderu FPOs showed consistent, balanced performance across both coffee types, reflecting reasonably efficient value chains through which results are similar to those of Tarun et al. (2022). Further, the results were aligned

Table 4: Marketing cost and marketing margin across three selected FPOs in the ASR district							
Sl. No.	Name of FPO	Maa thota tribal farming and marketing producer Co. Ltd		Paderu farmers producer company Ltd		Dhimsa natural farming FPO	
	Place of operation	Chintapalli		Araku valley		Minumuluru (paderu)	
	Particulars	Parchment (₹ kg ⁻¹)	Dry cherry (₹ kg ⁻¹)	Parchment (₹ kg ⁻¹)	Dry cherry (₹ kg ⁻¹)	Parchment (₹ kg ⁻¹)	Dry cherry (₹ kg ⁻¹)
1.	Net price received by farmer (Raw and ungraded)	225	125	220	105	217	114
2.	Total marketing cost incurred by farmer	50	25	44	19	45	23
3.	Selling price by farmer/purchase price by FPO	275	145	264	124	262	137
4.	Marketing cost incurred by FPO	99	79	86	57	89	62
5.	Marketing margin incurred by FPO	120	63	90	49	109	56
6.	Selling price by FPO/wholesalers purchase price	494	287	440	230	460	255
7.	Marketing cost incurred by the wholesaler	46	31	27	10	27	12
8.	Marketing margin incurred by the wholesaler	59	34.44	43	20	47	18
9.	Selling price by wholesaler/purchase price by retailer	599	352.44	510	260	534	285
10.	Marketing cost incurred by retailer	12	29	10	23	26	27
11.	Marketing margin incurred by retailer	89	52.86	20	37	25	38
12.	Selling price by retailer/consumer purchase price	700	434	540	320	585	350
13.	Total marketing cost	207	164	167	109	187	124
14.	Total marketing margin	879	531.44	673	389	741	424
	Farmer share in consumer rupee	32.14	28.80	40.74	32.81	37.09	32.57
	FPO share in consumer rupee	70.57	66.13	81.48	71.88	78.63	72.86

Table 5: Measurement of efficiency through conventional and shepherd approach across three FPO							
Sl. No.	Particulars	Maa thota tribal farming and marketing producer Co. Ltd		Paderu farmers producer company Ltd		Dhimsa natural farming FPO	
		Chinthapalli		Araku valley		Minumuluru (paderu)	
		Parchment (₹ kg ⁻¹)	Dry cherry (₹ kg ⁻¹)	Parchment (₹ kg ⁻¹)	Dry cherry (₹ kg ⁻¹)	Parchment (₹ kg ⁻¹)	Dry cherry (₹ kg ⁻¹)
1.	Consumer purchase price (RP)	700	434	540	320	585	350
2.	Total marketing cost (MC)	207	164	167	109	187	124
3.	Net marketing margin (MM)	879	531.44	673	389	741	424
4.	Price received by farmers (FP)	225	125	220	105	217	114
5.	Value added (1-4)	475	309	320	215	368	236

Table 5: Continue...

Sl. No.	Particulars	Maa thota tribal farming and marketing producer Co. Ltd		Paderu farmers producer company Ltd		Dhimsa natural farming FPO	
		Chinthapalli		Araku valley		Minumuluru (paderu)	
		Parchment (₹ kg ⁻¹)	Dry cherry (₹ kg ⁻¹)	Parchment (₹ kg ⁻¹)	Dry cherry (₹ kg ⁻¹)	Parchment (₹ kg ⁻¹)	Dry cherry (₹ kg ⁻¹)
Index of Marketing efficiency (FPO Beneficiaries) across 3 selected FPOs							
a)	Conventional method (E)=Value added/MC	2.29	1.88	1.92	1.97	1.97	1.90
b)	Shepherd's method (ME)=RP/MC	3.38	2.65	3.23	2.94	3.13	2.82
C)	Acharya approach=FP/MC+MM	0.21	0.18	0.26	0.21	0.23	0.21
Efficient channel		Most preferred and best channel		Second		Third	
Value added FPO non-beneficiaries during marketing of coffee							
		Parchment (₹ kg ⁻¹)		Dry cherry (₹ kg ⁻¹)			
1.	Consumer purchase price (RP)	448.30		278.80			
2.	Total marketing cost (MC)	92.60		59.76			
3.	Net marketing margin (MM)	101.66		52.03			
4.	Price received by farmers (FP)	175		95			
5.	Value added (1-4)	273.30		183.80			

with the study by Hema et al., 2025 which showed that FPO channel offered several advantages over traditional trader-based systems. By aggregating produce, FPOs enhance bargaining power, achieve economies of scale and ensure better price realization for farmers.

4. CONCLUSION

The analysis clearly demonstrated the substantial positive impact of FPO membership on the economic and financial status of beneficiary coffee farmers. There were significant improvements in crop yield, price realization, and net income per acre, access to institutional credit and extension services contributed to better farm productivity and financial inclusion. These collective improvements indicated that FPO membership has contributed to greater economic resilience, enhanced market access and improved the well-being of tribal coffee-growing households in the study area.

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