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MARKETING EFFICIENCY AND VALUE ADDITION ANALYSIS OF APPLE (VARIETY-GALA) IN SHIMLA DISTRICT OF HIMACHAL PRADESH, INDIA

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ABSTRACT

The marketing efficiency and value addition of Gala apple farming has been studied in Shimla district of Himachal Pradesh for the period 2023-24 by collecting data on various aspects. Based on the criterion of area under apple three blocks (sampled from Theog, Jubbal-Kotkhai for high apple production and Mashobra block for low production) were selected and interviews with market intermediaries. The study identified that four principal marketing channels and quantifies price spread, marketing costs, producer's share and marketing efficiency using standard statistical tools. The study observed that **Channel II (Producer → Commission agent → Wholesaler → Retailer → Consumer)** is the most effective sharing (52.5% of marketed output). While **Channel I (Producer → Wholesaler → Retailer)** yields the highest producer's share (68.02%) and marketing efficiency (2.13), **Channel III (pre-harvest contractors)** records the lowest producer share (48.24%) and low marketing efficiency (0.93). The study also revealed that under value-addition analysis contractors capture large downstream shares (18–21% in contractor-dominated channels), and commission agents and retailers also appropriate substantial margins. The findings pointed out that the structurally intermediary-driven chain and suggest that **strengthening direct marketing, promoting Farmer Producer Organizations (FPOs), and investing in on-farm post-harvest infrastructure** would improve producer returns and rebalance the value chain.
Keywords : Gala apple, Marketing channels, Value addition, Marketing efficiency, Shimla, Himachal Pradesh.

Introduction

Horticulture plays a vital role in India's agricultural economy, contributing nearly one-third of the total agricultural output, while covering only 13 percent of the total cultivated land (NHB, 2023). Apple (*Malus domestica*), a prominent temperate fruit crop, which is largely cultivated in the Himalayan states of Jammu & Kashmir and Himachal Pradesh, which together account for approximately 98 percent of the India's apple production (NHB, 2023–24). In Himachal Pradesh, Shimla district is a major contributor, where apple cultivation serves as the primary source of livelihood for thousands of farming families. Among the numerous cultivars, the Gala variety has emerged as a commercially important apple due to its early maturity, consumer preference, and premium market price. Despite these advantages, farmers cultivating Gala apples often face limited access to efficient marketing channels and value realization remains skewed in favor of intermediaries. Marketing of apples in Himachal Pradesh typically involves multiple layers of intermediaries-such as pre-harvest contractors, commission agents, and wholesalers-each contributing to value addition but also reducing the producer's share in the consumer price.

Value chain analysis (VCA) provides a structured approach to understanding the economic activities and value creation from farm to consumer.(Khadka P & Soberg S,2020), By analyzing the movement of Gala apples through different marketing channels and estimating the value added at each stage, it is possible

to identify inefficiencies, highlight potential areas for improvement, and promote equitable income distribution across stakeholders (FAO, 2021 & Porter, 1985). With growing consumer demand and commercial interest in the Gala variety, optimizing its marketing system becomes critical for enhancing farmer profitability and strengthening the regional horticulture economy. While existing studies have addressed apple marketing in general, there is limited empirical evidence focusing on the variety-specific value chain of Gala apples, particularly in Shimla district. The present study seeks to bridge this research gap by analyzing the marketing structure and value addition pattern of the Gala variety, thereby providing insights for policymakers, cooperatives, and supply chain actors to enhance market efficiency and farmer income.

The present study on marketing efficiency & value addition analysis of Apple has been undertaken with following specific objectives:

- To determine the marketing channels for Gala varieties of apple.
- To work out value addition by different stake holders in the marketing channel

Materials and Methods

This study was conducted in Shimla district of Himachal Pradesh, as it is the leading apple-producing region where the Gala variety is extensively cultivated for its early harvesting and widely commercial demand. The objective was to analyze the marketing channels and estimate value addition at various stages of the Gala apple supply chain.

Sampling and Data Collection

Shimla district of Himachal Pradesh was selected for study, due to its dominance in apple production. All the Gala apple producing block from Shimla district were listed and three blocks, Theog, Jubbal-Kotkhai, and Mashobra-were selected to represent varying levels of Gala cultivation. Five villages were selected from each block and eight farmers per village were randomly sampled, Thus a total sample size was 120 for the study. Besides, five stakeholders from each major marketing group (commission agents, contractors, wholesalers, retailers) were selected to capture supply chain perspectives. The mode of calculation followed was same as has been provided in Sehgal and Kumar (2022), Sharma *et al.* (2024); Gayak and Bhatta (2020).

Primary data were collected through structured personal interviews using a pre-tested schedule, covering marketing practices, prices, costs, and intermediary margins. Secondary data was collected from official publications and databases, including the Directorate of Horticulture, e-Udyan Portal, FAO, APEDA, 2023, NHB, 2023 and other government reports.

Analytical Framework

Following Statistical tools were employed for the analysis of the data:

Estimation of Marketing Channels

Marketing channels were identified based on the actual sale paths adopted by growers. The involvement of intermediaries-such as pre-harvest contractors, commission agents, wholesalers, and retailers-was mapped and analyzed using descriptive statistics. Key indicators including marketing cost, marketing margin, price spread, and marketing efficiency were computed using standard formulas (Acharya and Agarwal, 1987; 2014):The mode of calculation followed was same as Bharti K Aand Devi S (2023), Amgai S. *et.a l*(2015) & Parihar K S (2013).

Marketing Cost (C)

$$C=Cf+Cm1+Cm2+.....+Cmn$$

Where,

C = Total marketing cost of produce (Rs.)

Cf = Cost incurred by producer (Rs.)

Cm1 = Cost incured by i^{th} middleman in the process of buying and selling of produce (Rs.)

Cmn = Cost incurred by n^{th} middlemen (Rs.)

Marketing Margin

$$\text{Percent margin of middleman} = \frac{(\text{Selling Price - Purchase price})}{\text{Selling Price}} \times 100$$

Price Spread = Price paid by consumer- Price received by the farmer

Producer's Share in Consumer's Rupee (Ps):

$$P_S = \frac{Pf}{Pr} \times 100$$

Where,

P_s = Producer's Share

P_f = Price received by farmer (Rs.)

P_r = Retail price paid by the consumer (Rs.)

Marketing Efficiency (ME)-

By using the model of (Sharma *et al.*, 2024),

$$\textbf{MME= PF/ (MC+MM)}$$

Where,

MME= Measure of marketing efficiency

PE= Price received by producer (Rs.)

MM= Marketing margin (Rs.)

Value Addition Estimation

Degree of Value Addition (%)

$$= \frac{\text{Margin of the Intermediary}}{\text{Purchase Price of the Produce}} \times 100$$

A value chain map was developed to visually represent the flow of produce, services, and price along the Gala variety of apple of supply chain. This helped assess the economic contribution of each stakeholder and identify areas for improving market efficiency (Muder *et al.*, 2022).

Result and Discussion

The estimated marketing channel, marketing cost, marketing margin and marketing efficiency of Gala varieties of Apple pertaining to different channels selected from 120 sample farmers, involves multiple stakeholders and follows distinct routes from producer to consumer. The present analysis identifies four major marketing channels for the Gala variety, differentiated by the sequence of intermediaries involved and the functions they perform in the movement of produce. The channels identified are as follows: (Sehgal and Kumar, 2022)

Channel I: Producer → Wholesaler → Retailer → Consumer

Channel II: Producer → Commission Agent → Wholesaler → Retailer → Consumer

Channel III: Producer → Pre-harvest Contractor → Wholesaler → Retailer → Consumer

Channel IV: Producer → Post-harvest Contractor → Wholesaler → Retailer → Consumer

Among these channels, Channel II was the most frequently used by the sample farmers, sharing for 52.5 percent of the total marketed produce, followed by Channel I (18.33%), Channel III (16.67%), and Channel IV (12.5%), respectively. The dominance of Channel II reflects a strong dependence on commission agents, particularly due to the financial arrangements they offer and the market access they provide.

Table 1: Marketing channels for Gala variety of Apples

Marketing Channels	Marketing Intermediaries	BLOCK			Overall
		Theog	Mashobara	Jubbal-Kotkhai	
Channel I	Producer-wholesaler-Retailer-Consumer	6 (15)	10 (25)	6 (15)	22 (18.33)
Channel II	Producer - commission agent - wholesaler -Retailer- Consumer	20 (50)	24 (60)	19 (47.5)	63 (52.50)
Channel III	Producer-Pre harvest contractor-wholesaler-retailer-consumer	8 (20)	4 (10)	8 (20)	20 (16.67)
Channel IV	Producer - Post-harvest contractor-Wholesaler - Retailer- Consumer	6 (15)	2 (12.5)	7 (17.5)	15 (12.5)
	Total	40 (100)	40 (100)	40 (100)	120 (100)

Note: Figures in parenthesis is percentage to total

Marketing Margin, Price Spread and Marketing Efficiency

The price spread and marketing efficiency of Gala varieties of Apple varied significantly across the four channels (Table 2). Channel I exhibited the highest producer's share in the consumer rupee at 68.02 percent, with the lowest price spread (31.97%) and highest marketing efficiency (2.13). Conversely, Channel III recorded the lowest producer share (48.24%), the widest price spread (51.76%), and the lowest efficiency (0.93), owing to the strong role played by pre-harvest contractors.

Table 2: Price Spread and Marketing Efficiency of Different Marketing Channels for Gala variety of Apples.

(N=120)

Particulars	Channels			
	I	II	III	IV
Producer Price	2448.82	1983.87	1572.5	1919.74
Consumer Price	3600	3750	3260	3740.5
Gross marketing margin	1151.18 (31.97)	1766.13 (47.09)	1687.5 (51.76)	1820.76 (48.68)
Total marketing cost	736.71	903.28	698.6	787.83

	(20.46)	(24.87)	(21.43)	(21.06)
Net market margin	414.47 (11.51)	862.85 (23.01)	988.9 (30.33)	1032.93 (27.61)
Producer's share in consumer rupee (percent)	68.02	52.90	48.24	51.32
Marketing Efficiency	2.13	1.12	0.93	1.05

Note: The figure within parentheses denote percentage under respective columns

It could be seen from Table 2, that marketing channels involving fewer intermediaries are more efficient and offer higher returns to producers. It was also revealed that the Channels including **c**ommission agents or contractors dilute the producer's earnings due to increased costs and margins captured by intermediaries (Prihar, 2013).

Value Addition by Stakeholders

The analysis of value addition across the four marketing channels was computed and it further reinforces the role and impact of intermediaries in the Gala apple supply chain and is presented in Table 3. It indicates that in Channel I, where no agents or contractors are involved, the value addition is lower and more equitably distributed between wholesalers and retailers. In contrast, Channels III and IV, involving pre-and post-harvest contractors respectively, exhibit the highest value addition margins, especially for the contractors, reflecting a shift in control away from producers Getahun *et al*. (2018); Khadka and Solberg (2022); Tamirat and Muluken (2018) using the model for estimating the value addition in apple in Shimla district of Himachal Pradesh.

Table 3: Degree of Value Addition by Stakeholders in different Marketing Channels

Channels	**Farmer to Wholesaler**		**Wholesaler to Retailer**	**Retailer to Consumer**
Channel I				
Purchase Price	-		2608.45	3010
Sale Price	2608.45		3010	3600
Price difference	-		401.55	590
Cost	-		221.08	356
Margin	-		180.47	234
Degree of Value addition (%)	-		6.92	7.78
Channel II	**Farmer to Commission Agent**	**Commission Agent to Wholesaler**	**Wholesaler to Retailer**	**Retailer to Consumer**
Purchase Price	-	2143.50	2650.15	3050.05
Sale Price	2143.50	2650.15	3050.05	3750
Price difference	-	506.65	399.9	699.95
Cost	-	162.15	221.5	360
Margin	-	344.5	178.4	339.95
Degree of Value addition (%)	-	16.07	6.85	11.15
Channel III	**Farmer to Pre-harvest Contractor**	**Pre-harvest contractor to wholesaler**	**Wholesaler to Retailer**	**Retailer to Consumer**
Purchase Price	-	1572.5	2045.5	2520.24
Sale Price	1572.5	2045.5	2520.24	3260
Price Difference	-	473	474.74	739.76
Cost	-	176.12	215.46	307.02
Margin	-	296.88	259.28	432.74
Degree of Value addition (%)	-	18.88	12.68	17.17
Channel IV	**Farmer to post-harvest contractor**	**Post-harvest contractor to wholesaler**	**Wholesaler to Retailer**	**Retailer to Consumer**
Purchase Price	-	2032.5	2540.16	3110.14
Sale Price	2032.5	2540.16	3110.14	3740.5
Price Difference	-	507.66	569.98	630.36
Cost	-	88.67	220.4	366
Margin	-	418.99	349.58	264.36
Degree of Value addition (%)	-	20.61	13.76	8.50

These patterns suggest that value accumulation becomes increasingly skewed in favor of non-producer stakeholders as more intermediaries enter the supply chain. The producer's role becomes passive, particularly in Channels III and IV, where contractors take over harvesting, logistics, and marketing.

Discussion

The analysis of data indicates that the current marketing system for Gala apples in Shimla is intermediary-driven and structurally imbalanced. While some channels (like Channel I) offer better outcomes for farmers, they are less accessible due to infrastructural, logistical, and financial constraints. Commission agents, while facilitating market access, create a cycle of dependency by withholding full payments, tying producers into repeat transactions.

The presence of contractors (pre- and post-harvest) further erodes the economic role of producers, transferring both responsibility and reward to intermediaries. These trends confirm previous observations by Sharma, Patel, and Panigrahy (2024), who noted that the number of intermediaries negatively correlates with producer share and marketing efficiency.

Conclusions

The marketing channels and value addition has been estimated in the Gala apple in Shimla district of Himachal Pradesh. Four distinct marketing channels were identified, out of which Channel II (Producer → Commission Agent → Wholesaler → Retailer → Consumer) being the most widely used. The analysis also revealed that channels with fewer intermediaries, particularly Channel I, provided higher producer's share and greater marketing efficiency, whereas channels involving pre- or post-harvest contractors resulted in lower efficiency and diminished returns for producers due to higher intermediary margins.

The value addition analysis showed that contractors and retailers consistently captured significant shares of the consumer price, particularly in channels where producers had limited control over marketing decisions (Tamirat and Muluken, 2018). These findings underscore the structural imbalance in the existing marketing system, where intermediaries hold substantial influence over value distribution. Strengthening direct marketing, promoting farmer producer organisations (FPOs), and investing in on-farm post-harvest infrastructure could improve producer profitability and rebalance the value chain in favour of Gala apple growers. Such measures would not only enhance farmer incomes but also contribute to a more equitable and efficient horticultural marketing system in the region.

Suggestions /Policy Implications

Following policy implications have emerged from the study

i. Need to strengthen price stabilization measures by ensuring timely procurement through agencies like HPMC, regular implementation of Market Intervention Schemes (MIS), and the introduction of price bands to minimize extreme price fluctuations and promote quality-oriented production.

ii. Introduce a mandatory billing and receipt system to enhance transparency in transactions, reduce hidden charges, and ensure timely payments between farmers and intermediaries.

iii. Improve the internal functioning and governance of existing Farmer Producer Organizations (FPOs) rather than expanding their number, by addressing issues of mistrust, management inefficiency, and low farmer participation.

iv. Enhance access to short-term, low-interest credit facilities through cooperative banks or Kisan Credit Cards to reduce distress sales and allow farmers to store and market produce at better prices.

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Competing Interests

Authors have declared that no competing interests exist

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