Marketing Strategies Adopted by Sheep Owners: Evidence from a Field-Based Study

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Abstract

Livestock marketing plays a crucial role in improving the income and livelihood security of small ruminant farmers. This study examines the marketing strategies adopted by sheep owners using field-based evidence from Himachal Pradesh. The primary objective is to identify the key dimensions underlying marketing strategies from the respondents' perspective. Primary data were collected from 440 sheep owners across Chamba (170) and Kangra (270) districts using a structured questionnaire measured on a five-point Likert scale. Exploratory factor analysis was employed to analyse marketing-related variables covering product, pricing, promotion, distribution, and market access aspects. The results reveal five distinct marketing strategy dimensions, namely pricing and brand orientation, product differentiation and value-based strategy, promotion and communication strategy, distribution and relationship-oriented strategy, and market expansion and outreach strategy, together explaining a substantial proportion of total variance. The findings highlight that sheep owners adopt a mix of traditional and emerging marketing practices shaped by terrain, infrastructure, and institutional constraints. The study offers useful implications for policymakers, extension agencies, cooperatives, and market institutions to strengthen livestock market infrastructure, enhance marketing skills, and improve institutional linkages to support sustainable income growth among sheep owners in hilly regions.

Keywords: Sheep owners, Marketing strategies, Factor analysis, Livestock marketing, Himachal Pradesh, Field survey

1. Introduction

Sheep rearing constitutes an important component of the rural economy in India, particularly in hilly and pastoral regions where limited agricultural alternatives make livestock a critical source of income, employment, and livelihood security (Rawat & Kumar, 2021; Bhateshwar et al., 2022; Dinesh et al., 2023). In Himachal Pradesh, especially in the districts of Chamba and Kangra, sheep rearing is deeply embedded in the socio-economic life and traditional pastoral systems of communities such as the Gaddis, for whom livestock marketing plays a decisive role in household sustainability (Srivastava, 2022; Singh & Ashwani, 2023; RajKumar et al., 2025). Despite its significance, sheep marketing in these hilly regions remains largely unorganised and constrained by difficult terrain, inadequate transportation facilities, scattered markets, weak institutional linkages, and dependence on intermediaries, which often limit price realisation and bargaining power for sheep owners (Manzoor et al., 2022; Das et al., 2024). In the absence of organised and regulated market structures, sheep owners rely predominantly on informal, experience-based marketing practices rather than systematic and market-oriented strategies (Channappa et al., 2021; Triveni & Sharma, 2023). Although earlier studies have extensively examined the socio-economic conditions, production practices, and management aspects of sheep farming (Prathibha & Yogish, 2021; Kaur et al., 2021; Kanakaraja et al., 2024), empirical research focusing on the structure and patterns of

marketing strategies adopted by sheep owners remains limited, particularly through the application of multivariate analytical approaches capable of identifying underlying strategic dimensions. In this context, the present study provides field-based evidence from Chamba and Kangra districts of Himachal Pradesh to systematically examine marketing strategies adopted by sheep owners using factor analysis, with the objectives outlined below.

- **RO1:** To examine the marketing practices adopted by sheep owners in the Chamba and Kangra districts of Himachal Pradesh.
- **RO2:** To identify the underlying dimensions of marketing strategies adopted by sheep owners using factor analysis.
- **RO3:** To derive policy-relevant insights aimed at improving marketing efficiency and price realisation for sheep owners in hilly regions.

2. Review of Literature

2.1 Livestock and Sheep Marketing in India

Livestock, particularly sheep rearing, plays a crucial role in India's agrarian economy by supporting income diversification, employment generation, and livelihood security for small and marginal farmers, especially in rainfed, tribal, and hilly regions (Bhateshwar et al., 2022; Dinesh et al., 2023). Several studies highlight that sheep farming contributes not only through meat production but also through wool, manure, and allied activities, thereby strengthening rural household economies (Prathibha & Yogish, 2021; Doyle et al., 2021; Indian wool industry and future prospects, 2022). In pastoral regions of the Himalayas, sheep rearing is deeply embedded in traditional and transhumant systems, forming an essential part of the socio-economic and cultural life of communities such as the Gaddis (Srivastava, 2022; Singh & Ashwani, 2023; RajKumar et al., 2025). However, the marketing dimension of sheep farming remains relatively underdeveloped compared to production and management aspects, making marketing efficiency a critical determinant of farm income and sustainability.

2.2 Marketing Channels and Price Realisation

Marketing channels play a decisive role in determining price realisation and income outcomes for sheep owners, with studies indicating that informal and intermediary-dominated channels are most commonly used in small ruminant marketing systems (Manzoor et al., 2022; Siripurapu, 2023). Due to the absence of organised livestock markets, sheep owners often depend on local traders, middlemen, or periodic fairs, which limits transparency in pricing and weakens producers' bargaining power (Channappa et al., 2021; Triveni & Sharma, 2023). Empirical evidence suggests that lack of market information, poor access to institutional buyers, and limited collective marketing arrangements adversely affect farmers' ability to obtain remunerative prices (Li et al., 2021; Das et al., 2024). Studies from both Indian and international contexts further indicate that organised market access and cooperative services can improve market participation, risk management, and price stability, underscoring the importance of strategic marketing choices by livestock producers (Marais et al., 2024; Lisiecki & Foufopoulos, 2022).

2.3 Constraints in Livestock Marketing

Livestock marketing in hilly and pastoral regions is constrained by a combination of physical, institutional, and socio-economic factors that significantly affect marketing efficiency and profitability. Difficult terrain, inadequate transportation infrastructure, dispersed settlements, and seasonal migration patterns create logistical challenges in moving animals to markets (Manzoor et al., 2022; Srivastava, 2022). Studies focusing on tribal and pastoral communities report that limited access to formal credit, market information asymmetry, absence of cold-chain or holding facilities, and dependence on informal traders further exacerbate marketing inefficiencies (Bibi, 2024; Das et al., 2024). In addition, socio-cultural practices and traditional decision-making processes influence marketing behaviour, often resulting in conservative and

risk-averse strategies (Gautam, 2022; Sharma, 2024). These constraints collectively necessitate adaptive marketing strategies by sheep owners, shaped by local conditions rather than formal market mechanisms.

2.4 Use of Factor Analysis in Agricultural Marketing Studies

Factor analysis has been widely employed in agricultural and rural studies to identify underlying dimensions influencing farmers' behaviour, decision-making, and adoption of practices, particularly where multiple interrelated variables are involved. Previous research has successfully used multivariate techniques to analyse production practices, socio-economic characteristics, risk perception, and service utilisation among livestock farmers, enabling a more structured understanding of complex behavioural patterns (Channappa et al., 2021; Li et al., 2021; Kanakaraja et al., 2024). Studies applying factor analysis highlight its effectiveness in reducing data complexity and uncovering latent constructs such as market access, institutional support, pricing behaviour, and risk management strategies (G, N. K. M. et al., 2024; Kumar & Sandhu, 2024). However, despite its proven utility, the application of factor analysis to specifically examine marketing strategies adopted by sheep owners remains limited, particularly in the context of hilly and pastoral regions.

2.5 Research Gap

The review of existing literature reveals that while substantial research has been conducted on sheep farming with respect to production practices, socio-economic conditions, wool utilisation, and pastoral livelihoods (Prathibha & Yogish, 2021; Allafi et al., 2021; Favilli et al., 2025), limited attention has been paid to understanding marketing strategies from the sheep owners' perspective using robust multivariate techniques. Moreover, studies focusing on Himachal Pradesh have primarily addressed cultural, anthropological, and demographic dimensions of pastoral communities, with relatively less emphasis on empirical analysis of livestock marketing behaviour (Gautam, 2022; Singh & Ashwani, 2023; RajKumar et al., 2025). The absence of region-specific, field-based studies employing factor analysis to identify the underlying structure of marketing strategies adopted by sheep owners represents a significant research gap, which the present study seeks to address using primary data from Chamba and Kangra districts of Himachal Pradesh.

3. Research Methodology

3.1 Study Area

The study was conducted in the Chamba and Kangra districts of Himachal Pradesh, which were purposively selected due to their prominence in sheep rearing and the presence of traditional pastoral communities for whom livestock marketing constitutes a major source of livelihood. These districts represent distinct yet comparable agro-climatic and socio-economic conditions within the hilly regions of the state, making them suitable for examining variations and commonalities in marketing strategies adopted by sheep owners. The selection of these districts allows the study to capture ground-level realities of sheep marketing in geographically challenging terrains, where market access, transportation, and institutional support differ from plains-based livestock systems, thereby enhancing the contextual relevance and applicability of the findings.

3.2 Sample Design and Size

A total sample of 440 sheep owners was selected for the study, comprising 170 respondents from Chamba district and 270 respondents from Kangra district, reflecting the relative concentration of sheep-rearing households in these areas. A multistage sampling technique was adopted, wherein districts were selected purposively in the first stage, followed by the random selection of sheep owners at the village level to ensure representativeness and reduce selection bias. The individual sheep owner was considered the unit of analysis, as marketing decisions related to pricing, channel selection, and negotiations are primarily taken at the household or owner level. The sample size of 440 respondents is statistically adequate for the application of exploratory factor analysis, as it satisfies recommended respondent-to-variable ratios and enhances the robustness and reliability of factor extraction.

3.3 Data Collection

Primary data were collected using a structured questionnaire designed to capture the respondents' perceptions of marketing strategies adopted in sheep rearing. A five-point Likert scale ranging from "Strongly Disagree" to "Strongly Agree" was employed to measure attitudinal and perceptual variables, as this scale allows respondents to express the intensity of their agreement and is well-suited for multivariate analysis. The questionnaire included statements related to key dimensions of sheep marketing such as pricing practices, market access, dependence on middlemen, transportation facilities, availability of market information, and institutional support mechanisms. These variables were selected to comprehensively reflect the practical marketing environment faced by sheep owners in hilly regions and to facilitate the identification of underlying strategy dimensions through factor analysis.

3.4 Analytical Tools

The collected data were analysed using descriptive statistics and exploratory factor analysis (EFA) to achieve the objectives of the study. Descriptive statistics were used to summarise the basic characteristics of the respondents and to provide an initial understanding of marketing practices. Exploratory factor analysis was employed as the primary analytical tool to identify the underlying dimensions of marketing strategies by reducing a large number of interrelated variables into a smaller set of meaningful factors. The adoption of EFA is justified as the study aims to explore latent constructs underlying sheep owners' marketing behaviour rather than test predetermined relationships, thereby enabling a systematic and data-driven understanding of marketing strategy patterns in a field-based, under-researched context.

3.5. Factor Analysis Procedure

Prior to conducting factor analysis, the suitability of the data was assessed using the Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy and Bartlett's Test of Sphericity to ensure the appropriateness of applying factor analysis to the dataset. The KMO value exceeded the recommended threshold of 0.60, indicating that the sample size was adequate and the correlations among variables were sufficient for factor extraction. At the same time, Bartlett's Test of Sphericity was found to be statistically significant ($p < 0.05$), confirming the presence of meaningful relationships among the variables. Following this, exploratory factor analysis was carried out using the Principal Component Analysis method for factor extraction, as it is effective in data reduction and identifying underlying structures among interrelated variables. To enhance interpretability and achieve a simpler factor structure, Varimax rotation was applied. Factors with eigenvalues greater than one were retained for analysis, and only variables with factor loadings of 0.50 or above were considered significant for factor interpretation, ensuring clarity, reliability, and robustness of the extracted marketing strategy dimensions.

4. Results and Discussion

4.1 Descriptive Profile of Respondents

Table 1: Descriptive Profile of Sheep Owners (n = 440)

Particulars	Category	Frequency	Percentage
Age	Up to 35 years	102	23.2
	36–50 years	198	45.0
	Above 50 years	140	31.8
Education Level	Illiterate	96	21.8
	Primary	154	35.0
	Secondary	132	30.0
	Graduate & above	58	13.2
Experience in Sheep Rearing	Up to 10 years	118	26.8
	11–20 years	176	40.0
	Above 20 years	146	33.2
Flock Size	Up to 50 sheep	164	37.3
	51–100 sheep	186	42.3

	Above 100 sheep	90	20.4
District	Chamba	170	38.6
	Kangra	270	61.4

Source: Author(s) Compilation

The descriptive profile of respondents indicates that sheep rearing in the study area is predominantly undertaken by middle-aged and experienced individuals, with nearly half of the respondents (45.0%) belonging to the 36–50 years age group and a substantial proportion (73.2%) having more than ten years of experience in sheep rearing, suggesting accumulated practical knowledge and long-term engagement in the activity. Educational attainment among sheep owners remains modest, with the majority possessing primary or secondary education, which may influence their access to market information and adoption of structured marketing practices. The distribution of flock size reveals that most respondents operate on a small to medium scale, with over 79 per cent managing flocks of up to 100 sheep, highlighting the dominance of smallholder systems in the region. The higher representation of respondents from the Kangra district reflects its relatively larger sheep-rearing population compared to Chamba. Overall, the profile suggests that marketing decisions are largely shaped by experience-based knowledge within small-scale production systems, underscoring the relevance of analysing underlying marketing strategy dimensions through factor analysis.

4.2 Descriptive Statistical Analysis

Table 2: Descriptive Statistical Analysis of Driving Factors

Variables	Mean	Std. Deviation	N
Product Standardisation	3.9591	1.40878	440
Product Diversification, Differentiation & Positioning	4.1114	1.30667	440
Differentiation & Positioning	3.9023	1.49928	440
Packaging	3.8182	1.47527	440
Branding	3.6318	1.53646	440
Tender Pricing Strategy	3.7500	1.50360	440
Value Pricing Strategy	4.0523	1.31731	440
Price Discount Strategy	3.9068	1.49500	440
Differentiated Pricing Strategy	3.9591	1.43283	440
Skimming Pricing Strategy	3.9682	1.36633	440
Penetrating Pricing Strategy	3.8182	1.49521	440
Competition-Oriented Pricing Strategy	3.8750	1.47115	440
Display & Demonstration	3.8909	1.38225	440
Brochures & Billboards (Banners)	3.7455	1.41863	440
Social Media Marketing	3.9636	1.34944	440
Trade Show Marketing	3.9477	1.34469	440
Cross Promotion	3.9091	1.37531	440
Participation in Trade Fairs	3.5250	1.60418	440
Sponsoring Public Programme	3.6045	1.40224	440
Customer to Customer Promotion	3.5386	1.40560	440
Stockist / Distributor / Wholesaler	3.5386	1.42811	440
Retailers	3.6886	1.38355	440
Home Delivery of Product/Service	2.8886	1.39764	440
Exploring New Markets	3.8159	1.31756	440

Source: Author(s) Compilation

Table 2 presents the descriptive statistics of the marketing-related driving factors considered for factor analysis and reveals that sheep owners exhibit an overall positive inclination towards a range of marketing strategies, with most mean values

exceeding the neutral midpoint, indicating moderate to high levels of adoption. Product-related strategies such as product diversification, differentiation and positioning (Mean = 4.11), product standardisation (Mean = 3.96), and packaging (Mean = 3.82) suggest that respondents recognise the importance of quality differentiation and market positioning in enhancing market acceptance. Pricing strategies appear to be particularly prominent, with higher mean scores observed for value pricing (Mean = 4.05), skimming pricing (Mean = 3.97), and differentiated pricing (Mean = 3.96), reflecting adaptive pricing behaviour based on perceived value, market demand, and competitive conditions. Promotional strategies, including social media marketing (Mean = 3.96), trade show marketing (Mean = 3.95), display and demonstration (Mean = 3.89), and cross-promotion (Mean = 3.91), indicate growing engagement with both conventional and emerging promotional tools, although relatively lower mean values for participation in trade fairs and customer-to-customer promotion point towards constraints related to awareness, scale, and resources. Distribution-related practices show moderate dependence on intermediaries such as retailers and wholesalers, while home delivery of product or service records the lowest mean score (Mean = 2.89), highlighting infrastructural and logistical challenges in hilly regions. The relatively high standard deviation values across variables indicate substantial variability in respondents' marketing behaviour, thereby justifying the use of exploratory factor analysis to identify the underlying dimensions and patterns of marketing strategies adopted by sheep owners.

4.3 KMO and Bartlett's Test of Sampling Adequacy

Table 3: KMO and Bartlett's Test Value for Driving Factors

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.861
Bartlett's Test of Sphericity	Approx. Chi-Square	7679.695
	df	276
	Sig.	0.000

Source: Author(s) Compilation

Table 3 presents the results of the Kaiser–Meyer–Olkin (KMO) measure and Bartlett's Test of Sphericity, which were conducted to assess the suitability of the data for exploratory factor analysis. The KMO value of 0.861 indicates a high level of sampling adequacy, suggesting that the correlations among the variables are sufficiently compact and appropriate for factor extraction. Bartlett's Test of Sphericity is statistically significant (χ^2 = 7679.695, df = 276, p < 0.001), rejecting the null hypothesis that the correlation matrix is an identity matrix and confirming the presence of significant interrelationships among the variables. These results collectively demonstrate that the dataset is well-suited for the application of exploratory factor analysis and provide a strong statistical justification for proceeding with factor extraction to identify the underlying dimensions of marketing strategies adopted by sheep owners.

4.4 Communality Estimates for Driving Factors

Table 4: Showing Communality for Driving Factors

	Initial	Extraction
Product Standardisation	1.000	.562
Product Diversification, Differentiation & Positioning	1.000	.685
Differentiation & Positioning	1.000	.845
Packaging	1.000	.520
Branding	1.000	.726
Tender Pricing Strategy	1.000	.805
Value Pricing Strategy	1.000	.683
Price Discount Strategy	1.000	.838
Differentiated Pricing Strategy	1.000	.655
Skimming Pricing Strategy	1.000	.676
Penetrating Pricing Strategy	1.000	.682
Competition-Oriented Pricing Strategy	1.000	.761

Display & Demonstration	1.000	.664
Brochures & Billboards (Banners)	1.000	.626
Social Media Marketing	1.000	.588
Trade Show Marketing	1.000	.663
Cross Promotion	1.000	.646
Participation in Trade Fairs	1.000	.654
Sponsoring Public Programme	1.000	.596
Customer to Customer Promotion	1.000	.622
Stockist / Distributor / Wholesaler	1.000	.738
Retailers	1.000	.557
Home Delivery of Product/Service	1.000	.675
Exploring New Markets	1.000	.707

Extraction Method: Principal Component Analysis
Source: Author(s) Compilation

Table 4 presents the communality values for the driving factors included in the exploratory factor analysis, indicating the proportion of variance in each variable explained by the extracted factors. The extraction communalities range from 0.520 to 0.845, suggesting that a substantial amount of variance in most variables is well accounted for by the factor solution. Variables such as differentiation and positioning (0.845), price discount strategy (0.838), tender pricing strategy (0.805), and competition-oriented pricing strategy (0.761) exhibit high communalities, indicating that these aspects are strongly represented within the underlying factor structure and play a significant role in shaping marketing strategies of sheep owners. Product-related and pricing variables, including branding, value pricing, skimming pricing, and penetrating pricing strategies, also show satisfactory communalities above the commonly accepted threshold of 0.50, confirming their relevance for factor interpretation. Promotional and distribution-related variables such as trade show marketing, cross-promotion, participation in trade fairs, stockist/wholesaler reliance, and exploring new markets demonstrate moderate to high communalities, reflecting their meaningful contribution to the extracted factors. Even the lowest communality values, such as packaging (0.520) and retailers (0.557), exceed the minimum acceptable level, indicating that no variable is poorly represented in the factor model. Overall, the communality results confirm that the selected variables are appropriate and sufficiently explained by the extracted factors, thereby supporting the robustness and adequacy of the exploratory factor analysis conducted in the study.

4.5 Total Variance Explained by Driving Factors

Table 5: Showing Total Variance of Driving Factors

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.732	40.552	40.552	9.732	40.552	40.552	4.567	19.030	19.030
2	2.218	9.243	49.795	2.218	9.243	49.795	3.999	16.663	35.693
3	1.621	6.755	56.550	1.621	6.755	56.550	3.440	14.334	50.027
4	1.388	5.782	62.331	1.388	5.782	62.331	2.721	11.337	61.364
5	1.216	5.068	67.399	1.216	5.068	67.399	1.448	6.035	67.399
6	0.918	3.826	71.225						
7	0.804	3.348	74.573						
8	0.707	2.945	77.518						
9	0.697	2.904	80.422						
10	0.635	2.644	83.066						

| 11 | 0.559 | 2.330 | 85.396 | | | | | |
12	0.498	2.075	87.470					
13	0.460	1.917	89.388					
14	0.434	1.810	91.197					
15	0.379	1.580	92.777					
16	0.353	1.470	94.247					
17	0.295	1.229	95.476					
18	0.271	1.131	96.607					
19	0.237	0.989	97.596					
20	0.193	0.803	98.399					
21	0.157	0.653	99.053					
22	0.121	0.503	99.555					
23	0.072	0.299	99.854					
24	0.035	0.146	100.000					

Extraction Method: Principal Component Analysis
Source: Author(s) Compilation

Table 5 presents the total variance explained by the extracted components using Principal Component Analysis and provides insight into the number of meaningful factors underlying the marketing strategies of sheep owners. Based on the eigenvalue-greater-than-one criterion, five components were retained for further analysis, collectively explaining 67.399 per cent of the total variance, which is considered satisfactory in social science and marketing research. The first component alone accounts for a substantial proportion of variance (40.552%), indicating the presence of a dominant underlying factor influencing marketing strategies. The second, third, fourth, and fifth components contribute 9.243 per cent, 6.755 per cent, 5.782 per cent, and 5.068 per cent of the variance, respectively, reflecting the multidimensional nature of marketing behaviour among sheep owners. After Varimax rotation, the variance is more evenly redistributed across the five factors, with rotated variance contributions of 19.030 per cent, 16.663 per cent, 14.334 per cent, 11.337 per cent, and 6.035 per cent, thereby enhancing interpretability and reducing factor dominance. The cumulative rotated variance of 67.399 per cent indicates that the extracted factors adequately capture the major dimensions of the driving forces influencing marketing strategies. Overall, the results confirm that the retained factor structure is statistically robust and meaningful, justifying the use of exploratory factor analysis to explain the complex and interrelated marketing practices adopted by sheep owners in the study area.

4.6 Scree Plot Analysis

Figure 1: Scree Plot Analysis
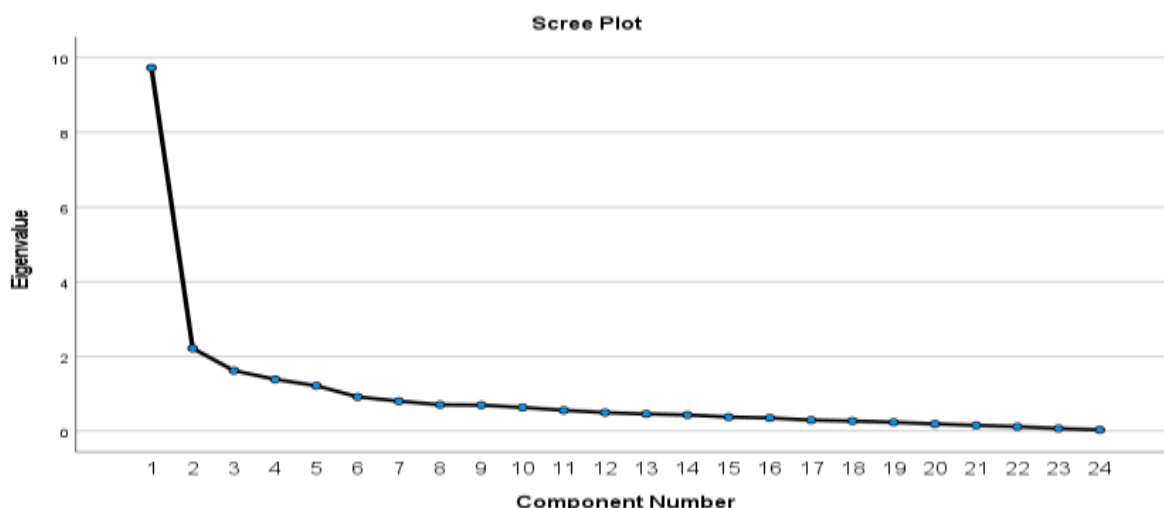
Source: Author(s) Compilation

The scree plot in Figure 1 illustrates the relationship between component numbers and their corresponding eigenvalues and provides visual support for determining the optimal number of factors to retain. The plot shows a sharp decline in eigenvalues from the first to the second component, followed by a noticeable flattening of the curve after the fifth component. This clear "elbow" or point of inflection around the fifth component indicates that factors beyond this point contribute only marginally to explaining the variance and largely represent random noise rather than meaningful underlying dimensions. The first five components have eigenvalues greater than one and account for a substantial proportion of the total variance, whereas subsequent components show a gradual and minimal decline in eigenvalues. Therefore, the scree plot strongly supports the retention of five factors, which is consistent with the eigenvalue criterion and the total variance explained results reported earlier. This convergence of statistical evidence confirms that a five-factor solution is both appropriate and adequate for capturing the underlying structure of marketing strategies adopted by sheep owners.

4.7 Unrotated Component Matrix for Driving Factors

Table 6: Unrotated Component Matrix for Driving Factors

Variables	Component				
	1	2	3	4	5
Differentiated Pricing Strategy	.803	-.076	.019	-.057	.035
Skimming Pricing Strategy	.802	-.140	.025	.052	-.098
Competition-Oriented Pricing Strategy	.793	-.155	.078	.277	-.161
Differentiation & Positioning	.789	.022	.110	-.346	.300
Price Discount Strategy	.785	.022	.126	-.339	.300
Product Diversification, Differentiation & Positioning	.759	-.053	.028	-.276	.171
Value Pricing Strategy	.757	-.088	.032	-.277	.159
Tender Pricing Strategy	.756	-.306	.354	.099	-.070
Display & Demonstration	.736	.044	-.337	.004	-.086
Penetrating Pricing Strategy	.709	-.201	.153	.275	-.201
Branding	.699	-.355	.245	.209	-.090
Packaging	.677	-.172	.104	-.147	.004
Trade Show Marketing	.657	.077	-.463	.037	-.098
Cross Promotion	.645	.038	-.440	.039	-.184
Brochures & Billboards (Banners)	.628	.153	-.412	-.143	.133
Product Standardisation	.596	-.274	.354	.037	.072
Participation in Trade Fairs	.570	-.137	-.208	.412	-.312
Stockist / Distributor / Wholesaler	.407	.678	.261	-.074	-.198
Customer to Customer Promotion	.386	.673	.059	.003	-.129
Retailers	.362	.596	.192	.003	-.183
Sponsoring Public Programme	.444	.549	.207	-.046	-.229
Social Media Marketing	.457	.049	-.581	.061	.186
Home Delivery of Product/Service	.218	.297	.121	.540	.483
Exploring New Markets	.213	.285	.021	.519	.557

Extraction Method: Principal Component Analysis
Source: Author(s) Compilation

Table 6 presents the unrotated component matrix derived from Principal Component Analysis, indicating the loading of marketing-related variables across five components. The first component shows strong loadings for most pricing, product differentiation, branding, packaging, and promotion variables, suggesting a dominant composite marketing strategy combining product and price orientation. The second component is mainly associated with variables related to intermediaries and relational promotion, such as stockists, retailers, customer-to-customer promotion, and sponsoring

public programmes, reflecting a distribution-oriented strategy. The third component captures promotional and communication-related practices, including social media marketing, trade shows, cross-promotion, and advertising materials. The fourth component reflects market access and expansion strategies, as indicated by higher loadings for participation in trade fairs, home delivery, and exploring new markets. The fifth component appears to represent a growth- and outreach-oriented dimension linked to market exploration and service extension. Overall, the component matrix confirms the multidimensional nature of marketing strategies adopted by sheep owners, while also indicating the need for rotated factor solutions to improve clarity and interpretability.

4.8 Rotated Component Matrix for Driving Factors

Table 7: Rotated Component Matrix for Driving Factors

Variables	Component				
	1	**2**	**3**	**4**	**5**
Branding	**.786**	.305	.107	-.005	.061
Tender Pricing Strategy	**.781**	.432	.034	.083	.032
Penetrating Pricing Strategy	**.761**	.180	.219	.137	.061
Competition-Oriented Pricing Strategy	**.752**	.225	.325	.166	.106
Participation in Trade Fairs	**.625**	-.119	.491	.081	.048
Skimming Pricing Strategy	**.610**	.389	.356	.159	.008
Product Standardisation	**.592**	.448	-.053	.017	.086
Differentiation & Positioning	.242	**.827**	.233	.202	.083
Price Discount Strategy	.248	**.824**	.218	.204	.088
Product Diversification, Differentiation & Positioning	.306	**.694**	.298	.147	.008
Value Pricing Strategy	.325	**.692**	.291	.122	-.011
Differentiated Pricing Strategy	.485	**.515**	.350	.172	.049
Packaging	.452	**.512**	.203	.093	-.063
Trade Show Marketing	.251	.196	**.731**	.164	.008
Social Media Marketing	.012	.190	**.717**	-.050	.188
Cross Promotion	.300	.154	**.708**	.164	-.062
Display & Demonstration	.338	.295	**.652**	.193	.003
Brochures & Billboards (Banners)	.056	.409	**.650**	.166	.077
Stockist / Distributor / Wholesaler	.074	.158	.037	**.838**	.057
Customer to Customer Promotion	.004	.093	.202	**.744**	.137
Sponsoring Public Programme	.158	.148	.094	**.735**	.017
Retailers	.089	.087	.072	**.728**	.085
Exploring New Markets	.043	.052	.102	.089	**.827**
Home Delivery of Product/Service	.112	.024	.026	.152	**.799**

Extraction Method: Principal Component Analysis
Rotation Method: Varimax with Kaiser Normalisation
Source: Author(s) Compilation

Table 7 presents the rotated component matrix obtained using Varimax rotation, which provides a clearer and more interpretable factor structure for the marketing strategies adopted by sheep owners. The first factor is characterised by high loadings on branding and multiple pricing strategies, including tender, penetrating, skimming, and competition-oriented pricing, indicating a pricing and brand orientation in marketing decisions. The second factor shows strong loadings for differentiation and positioning, price discounts, product diversification, value pricing, and packaging, reflecting a product differentiation and value-based strategy. The third factor is dominated by promotional and communication-related variables such as trade show marketing, social media marketing, cross-promotion, display and demonstration, and advertising materials, representing a promotion-focused strategy. The fourth factor loads heavily on stockists, retailers, customer-to-customer promotion, and sponsoring public programmes, suggesting a distribution and

relationship-oriented strategy. The fifth factor is defined by high loadings on exploring new markets and home delivery of products or services, indicating a market expansion and outreach strategy. Overall, the rotated solution effectively distinguishes five meaningful and coherent dimensions of marketing strategies, confirming the multidimensional nature of marketing behaviour among sheep owners and facilitating clearer interpretation of strategic patterns.

5. Interpretation of Factors

The factor analysis reveals five distinct but interrelated dimensions of marketing strategies adopted by sheep owners, reflecting adaptive responses to market conditions in hilly and pastoral regions. The first factor, representing pricing and brand orientation, captures the emphasis on branding and diverse pricing strategies such as tender, penetrating, skimming, and competition-oriented pricing, indicating that sheep owners actively adjust prices and brand perceptions to cope with market uncertainty and competition; this aligns with earlier evidence highlighting the importance of pricing behaviour and value perception in livestock marketing (Prathibha & Yogish, 2021; Manzoor et al., 2022). The second factor reflects a product differentiation and value-based strategy, characterised by product diversification, differentiation, positioning, packaging, and discount-based pricing, suggesting that sheep owners recognise quality variation and value enhancement as means to improve price realisation, consistent with studies emphasising quality attributes and differentiation in sheep and wool-related markets (Doyle et al., 2021; Marais et al., 2024). The third factor denotes a promotion and communication strategy, encompassing trade shows, social media marketing, cross-promotion, displays, and advertising materials, indicating growing awareness of both traditional and modern promotional tools among sheep owners, as also observed in studies on evolving production and marketing practices (Channappa et al., 2021; Triveni & Sharma, 2023). The fourth factor represents a distribution and relationship-oriented strategy, driven by reliance on stockists, retailers, interpersonal promotion, and public programmes, highlighting the continued dominance of intermediary-based channels and social networks in livestock marketing, particularly in regions with limited organised markets (Siripurapu, 2023; Das et al., 2024). The fifth factor captures a market expansion and outreach strategy, reflected in efforts to explore new markets and provide home delivery, signifying a forward-looking approach aimed at widening market reach despite infrastructural constraints, which resonates with emerging evidence on diversification and market access as pathways to resilience in pastoral systems (Bhateshwar et al., 2022; Lisiecki & Foufopoulos, 2022). Collectively, these factors underscore the multidimensional nature of sheep marketing strategies and demonstrate how sheep owners blend traditional practices with emerging market-oriented approaches to navigate structural and geographic challenges.

6. Implications of the Study

6.1 Managerial Implications

The findings of the study offer important managerial implications for sheep owners as well as for cooperatives and traders operating in livestock markets. For sheep owners, the identification of distinct strategy dimensions highlights the need to move beyond purely traditional and experience-based selling practices towards more structured approaches that combine appropriate pricing, product differentiation, and selective promotion to enhance price realisation and market reach. Emphasis on branding, value-based pricing, and improved presentation of products can help sheep owners strengthen their bargaining position, particularly in intermediary-dominated markets (Prathibha & Yogish, 2021; Manzoor et al., 2022). For cooperatives and traders, the results underline the importance of facilitating organised marketing channels, aggregation of produce, and transparent pricing mechanisms, as these can reduce transaction costs and improve trust between producers and market intermediaries. Strengthening collective marketing arrangements and improving information flow can also support more efficient distribution and better coordination within the sheep value chain (Siripurapu, 2023; Das et al., 2024).

6.2 Policy Implications

From a policy perspective, the study underscores the critical need for strengthening market infrastructure in hilly and pastoral regions, including the development of accessible livestock markets, holding facilities, and transportation support systems to reduce marketing inefficiencies faced by sheep owners (Bhateshwar et al., 2022; Dinesh et al., 2023). Training and capacity-building programmes focused on marketing skills, price awareness, use of digital platforms, and value addition can enable sheep owners to adopt more market-oriented strategies and respond effectively to changing demand conditions (Channappa et al., 2021; Triveni & Sharma, 2023). Additionally, policies aimed at enhancing institutional market linkages—such as promoting cooperatives, strengthening producer groups, and integrating sheep owners with formal buyers and government-supported schemes—can improve market access and income stability, particularly for pastoral and tribal communities in Himachal Pradesh (Bibi, 2024; RajKumar et al., 2025).

7. Conclusion

The present study provides empirical insights into the marketing strategies adopted by sheep owners in Chamba and Kangra districts of Himachal Pradesh by identifying five underlying dimensions through exploratory factor analysis, namely pricing and brand orientation, product differentiation and value-based strategy, promotion and communication strategy, distribution and relationship-oriented strategy, and market expansion and outreach strategy. The findings reveal that sheep owners adopt a combination of traditional and emerging marketing practices shaped by geographic constraints, market access, and institutional limitations, highlighting the multidimensional nature of livestock marketing behaviour in hilly regions. By shifting the analytical focus from production and socio-economic aspects to marketing strategy patterns, the study contributes to the existing literature on sheep farming and livestock marketing, particularly in under-researched pastoral contexts. From a practical standpoint, the results offer valuable guidance for sheep owners, cooperatives, traders, and policymakers by emphasising the importance of structured pricing, product differentiation, promotional awareness, and improved market linkages in enhancing price realisation and marketing efficiency.

8. Limitations and Future Research

Despite its contributions, the study has certain limitations that provide directions for future research. The empirical analysis is confined to two districts of Himachal Pradesh, which may limit the generalisability of the findings to other regions with different agro-climatic and institutional settings. In addition, the study relies solely on exploratory factor analysis to identify underlying marketing strategy dimensions, without examining causal relationships or the impact of these strategies on income and performance outcomes. Future studies may extend this research by applying advanced techniques such as structural equation modelling (SEM) to test relationships among marketing strategies and economic outcomes, conducting comparative analyses across districts or states to capture regional variations, and adopting longitudinal designs to examine changes in marketing behaviour over time in response to policy interventions and market dynamics.

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