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EXPLORING THE NEXUS BETWEEN MARKETING CHALLENGES AND DISTRIBUTION CHANNELS: INSIGHTS FROM CHILLI GROWERS IN TALUKA KUNRI, DISTRICT UMERKOT, SINDH

Basit Ali Talpur^{a,b}, Rawal^b, Azeem Shahzad Kumbhar^a, Ghulam Nabi Dahri^c, Muhammad Ismail Kumbhar^{b,*}, Noman Safdar^b, Sadiq Ali^d

^a Land Resource Management, Nanjing Agricultural University, China

^b Department of Agricultural Education & Extension, Sindh Agriculture University Tandojam, Pakistan

^c College of Economics and Management, Northwest A&F University, China

^d Faculty of Crop Production, Sindh Agriculture University Tandojam, Pakistan

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ABSTRACT

This research is crucial to understanding the complex challenges of chilli growers in Taluka Kunri, District Umerkot. This significant chilli-producing region contributes 55% of the total production in Pakistan. Despite being a major contributor to the country's chilli output, growers face substantial obstacles such as price volatility, inadequate storage facilities, and a lack of cooperative marketing associations. These issues hinder their ability to secure favorable prices and manage produce effectively. The study employed a survey approach by targeting 100 chilli growers across the four randomly selected union councils of Taluka Kunri. The structured questionnaire was used to collect the data covering socioeconomic characteristics, marketing problems, and marketing channels. The sampling approach involved a random selection of 25 farmers from each union council, UC Chajro, UC Bustan, UC Memon Kunri, and UC Mai Bakhtawar. Statistical analysis was conducted using SPSS software, employing descriptive statistics and Likert scale analysis to quantify and interpret growers' perceptions and experiences. The research highlights a discrepancy between the most used marketing channels and those perceived as most beneficial. While multi-tiered channels are commonly used due to lower costs, direct sales from producers to consumers are seen as more advantageous despite higher expenses. This suggests that growers prioritize cost-effectiveness over potential returns. The strategy proposes implementing minimum support prices, improving infrastructure, enhancing access to credit and insurance, and promoting direct marketing channels. These measures aim to create a more sustainable and profitable environment for chilli production in Kunri District, addressing both immediate marketing challenges and long-term economic growth.

* Email: mikumbhar2000@yahoo.com

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INTRODUCTION

Capsicum annuum L., commonly known as chilli pepper, belongs to the Solanaceae family and is one of the most widely cultivated and consumed spices globally (Arin, 2019). The genus *Capsicum* comprises approximately 31 species, with five being domesticated: *C. annuum*, *C. baccatum*, *C. chinense*, *C. frutescens*, and *C. pubescens* (Batiha et al., 2020). *C. annuum*, which originated in tropical Central America, has undergone cultivation for over 7,000 years and currently produces over 35 million metric tonnes annually worldwide (FAO, 2018). Globally, people recognize Pakistan as an agricultural-based economy, with agriculture contributing 24 percent to GDP and 37.4 percent to employment. Agriculture is the backbone of Pakistan's economy and plays a major role in its economic growth and development (GOP, 2024). Given its linkages with other sectors, the agriculture sector is a critical driver of economic growth, employment, and poverty reduction (Rais et al., 2021). Pakistan is a significant global producer and exporter of chillies, ranking fourth after India, China, and Mexico. The country's annual chilli production is approximately 148,700 metric tonnes from an area of 65,300 hectares (Sarwar and Khan

2020). Sindh province, particularly the Kunri region in the Umerkot district, is the primary chilli-growing area in Pakistan, contributing about 85% of the country's red chilli production, with Kunri being the largest contributor at 55% (Rais et al., 2023). The average yield of chillies in Sindh is 1.7 tonnes per hectare, contributing 1.5% to Pakistan's GDP (GOP, 2024). Kunri, often referred to as the "chilli capital of Asia," cultivates various chilli varieties, including Longi, Talhari, Ghotki, and Kunri-1. The region is known for its "Kunri chilli bunch," comprising three main varieties: Maxi, Desi, and Nageena (Arin, 2019). The main chilli-producing areas in Sindh are Mirpurkhas, Umerkot, Hyderabad, Badin, and Sanghar. Many varieties of chillies are present; among these commonly used are *Capsicum annuum* (sweet or bell pepper) and *Capsicum frutescens* (hot pepper). The optimum day temperatures for chilli pepper growth range from 20 to 30 °C (Arin, 2019). Chilli peppers often exhibit cross-pollination, with an extent exceeding 63%. People primarily value chillies for their high pungency and bright red color. Chilli has various chemical contents, viz., vitamins, minerals, and carotene (Malakar et al., 2019).

Chilli growers in Kunri face significant marketing challenges that impact their economic well-being and perception of chilli as a beneficial crop. Poor government policies and faulty marketing systems discourage farmers, who struggle to market their surplus produce at the government-fixed support price despite incurring heavy production costs (Srinivasa et al., 2023). A study by Mangan and Ruthbah (2018) found that small and medium-sized chilli farmers in Sindh primarily sell their produce through local traders or small commission agents, while large farmers have access to more profitable channels such as large commission agents, online trading, or direct sales to exporters (Mangan and Ruthbah, 2018). This disparity in market access often results in lower prices for smaller producers. The research also revealed that the high cost of inputs and limited access to formal financial institutions force many farmers to sell their harvests to contractors or commission agents who provide advance payments (Muflikh et al., 2021). Additionally, small farmers often lack the resources to properly sort and grade their chillies, further contributing to the lower prices they receive (Mangan and Ruthbah, 2018). These findings underscore the need for improved market infrastructure and support systems for chilli growers in Pakistan. In Rwanda, a similar initiative by African Evangelistic Enterprise (AEE) has shown promise in addressing such challenges by organizing smallholder chilli farmers into cooperatives and providing training on improved agricultural practices and market access strategies (Ingabire, 2019). This approach has led to increased production volumes and improved quality of chillies, demonstrating the potential benefits of organized farmer groups and targeted support in addressing marketing challenges in the chilli sector.

Chilli growers' marketing challenges in Taluka Kunri are not unique to this region. Recent studies have highlighted issues similar to those of other crops and geographical areas. A survey of garden pea farmers in Himachal Pradesh, India found that high commission fees, poor market access, and limited market information were major barriers to effective marketing (Thakur et al., 2023). Similarly, crop diversification studies in India highlighted smallholders' lack of information about local markets, compliance with quality and grading standards, and reliance on middlemen as some of the major challenges perceived by farmers embracing diversified cropping patterns (Faqeerzada et al., 2021). For instance in Ethiopia, a study identified challenges to crop production and marketing as poor infrastructure, lack of market linkages, and inadequate credit services (Tadesse et al., 2021). These parallels highlight the similar marketing challenges many in agriculture experience and showcase a comprehensive answer to how marketing problems can be solved.

Additionally, the lack of proper storage facilities, timely availability of gunny bags, and delays in support price announcements contribute to marketing challenges. A significant concern remains the absence of well-functioning markets where farmers can easily supply their produce and receive immediate payment at the government-fixed support price. Rais et al. (2021) evaluated the marketing obstacles encountered by chilli producers in Sindh, Pakistan, which included unfair commission agency rates (76%), weight-related malpractice (76%), fluctuations in prices (56%), and a lack of adequate storage facilities (47%). These difficulties have a considerable influence on farmers' capacity to profitably grow chilli. Furthermore, the absence of grading facilities (90%) was noted as a key limitation for chilli sellers in the research locations (Mangan and Ruthbah, 2018).

This is compounded by the lack of proper infrastructure, as noted by Patel and Mishra (2023), who emphasized the need for improved road networks and cold storage facilities to enhance market access. These challenges and irrigation problems

significantly impact the overall production and marketing of chillies in Kunri. A comprehensive study by Devika and Jothi (2017) found that water shortages make it harder to grow chillies, so farmers need more water-efficient irrigation techniques to improve their production. This study aims to analyze the marketing problems of chilli growers in Taluka Kunri, District Umerkot, and assess their perceptions of existing marketing channels to propose policy recommendations for improving chilli marketing in the region. The marketing channels used for chilli include several pathways: Channel I involves direct sales from producer to consumer; Channel II includes sales from producer to retailer to consumer; Channel III follows a route from producer to commission agent to retailer to consumer; Channel IV involves producer to wholesaler to retailer to consumer; Channel V includes a pre-harvest contractor in the chain from producer to wholesaler to retailer to consumer; and Channel VI involves a village merchant and commission agent before reaching the wholesaler, retailer, and finally the consumer.

METHODOLOGY

The methodology of a research study is critical for ensuring the validity and reproducibility of the results. This study employed a survey approach, which offers several advantages for collecting data on socioeconomic characteristics and agricultural practices (Kallet, 2004). We employed the following methods and procedures.

Study Area

We conducted the research in Taluka Kunri, District Umerkot, Sindh province, Pakistan. Umerkot City serves as the district capital. However, 95.13% of the district's population speaks Sindhi as their primary language. Small percentages of the population (1.4% and 1.8%, respectively) also speak Urdu and Punjabi (Rauf et al., 2024). Dhatki, while spoken in some parts of the Umerkot district, is a Rajasthani language of the Indo-Aryan branch.

Population and Sampling

The survey method and sampling approach described in the statement closely match the methodology outlined in the study "Measuring Profitability of Chilli Pepper Production in Sindh, Pakistan" (Channa et al., 2020). This research purposively collected primary data from various villages in Taluka Kunri, district Umerkot, using random sampling techniques. We randomly selected four union councils from the 10 union councils in Taluka Kunri: UC Chajro, UC Bustan, UC Memon Kunri, and UC Mai Bakhtawar. The sample size consisted of 100 chilli growers, with 25 farmers randomly selected from each union council.

Data Collection and Analysis

Data collection utilized a semi-structured, closed-ended questionnaire covering socioeconomic characteristics and agricultural challenges. An expert pre-tested the questionnaire in the field and reviewed it. The team of researchers gathered the data from the respondents. The collected data underwent rigorous verification and analysis using SPSS software. Descriptive statistics were calculated. This methodology ensured a systematic approach to addressing the research objectives, providing insights into chilli production in the region.

RESULTS AND DISCUSSION

Table 1, presents a comprehensive overview of the marketing problems faced by chilli growers, based on a Likert scale survey

of 100 respondents. It covers 24 different factors, ranging from price fluctuations to export awareness. The results are categorized into five levels of severity: not at all, to some level, moderate, high, and extremely high. The data reveals that rapid price fluctuations are the most significant concern, with 60% of respondents rating it extremely high. Other major issues include the lack of cooperative marketing associations (50% at an extremely high level), improper markets at farmers' doorsteps (48% at an extremely high level), and inadequate storage facilities (45% at an extremely high level). On the other hand, 75% and 35% of respondents rated restrictions on selling produce and unjustifiable deductions by buyers as less

problematic, respectively. This table provides a clear snapshot of the relative importance of various marketing challenges faced by chilli growers in the study area.

Figure 1 shows the growers' perception of the marketing channels used for chilli. The most commonly utilized channel is Channel VI, which involves a complex route from the producer to the consumer through multiple intermediaries, accounting for 60% of responses. Other channels, such as Channel III (Producer—Commission agent—Retailer—Consumer) and Channel I (Producer—Consumer), have lower frequencies at 30% and 5%, respectively. This indicates a significant reliance on multi-tiered marketing structures among growers in the region.

Table 1. Marketing problems of chilli growers.

Description of factors	Likert Scale									
	Not at all		To some level		Moderate		High level		Extremely high level	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Rapid price fluctuations	15	15.00	10	10.00	10	10.00	15	15.00	60	60.00
Lack of transport	15	15.00	13	13.00	22	22.00	15	15.00	35	35.00
Restriction in selling the produce	75	75.00	15	15.00	10	10.00	0	0.00	5	5.00
Spot Marketing	7	7.00	10	10.00	25	25.00	40	40.00	18	18.00
Storage facilities	5	5.00	7	7.00	23	23.00	20	20.00	45	45.00
Forced to accept low rates	20	20.00	15	15.00	35	35.00	10	10.00	20	20.00
Lack of market price information	35	35.00	25	25.00	10	10.00	25	25.00	5	5.00
No premium for clean/Alfatoxin free/RC1	10	10.00	15	15.00	40	40.00	15	15.00	20	20.00
Lack of bargaining power	10	10.00	15	15.00	10	10.00	25	25.00	30	30.00
Unjustifiable deduction by buyers	35	35.00	25	25.00	25	25.00	10	10.00	5	5.00
No storage facility	5	5.00	27	27.00	23	23.00	20	20.00	45	45.00
Low price compared to the international market	5	5.00	10	10.00	10	10.00	30	30.00	45	45.00
No cooperative marketing associations	5	5.00	10	10.00	15	15.00	20	20.00	50	50.00
No marketing regulatory authority	10	10.00	15	15.00	20	20.00	25	25.00	30	30.00
Payment schedules	5	5.00	10	10.00	15	15.00	40	40.00	30	30.00
Input problems	10	10.00	15	15.00	40	40.00	10	10.00	25	25.00
Improper markets at Farmer's Doorstep	8	8.00	10	10.00	22	22.00	12	12.00	48	48.00
Export policy	7	7.00	15	15.00	35	35.00	30	30.00	17	17.00
Export facilities	5	5.00	10	10.00	40	40.00	35	35.00	10	10.00
Consumer market	10	10.00	73	73.00	17	17.00	40	40.00	20	20.00
Processing facilities	10	10.00	7	7.00	22	22.00	45	45.00	16	16.00
Post-harvest management issues	35	35.00	30	30.00	10	10.00	15	15.00	10	10.00
Marketing skills	3	3.00	7	7.00	35	35.00	35	35.00	20	20.00
Awareness about export	4	4.00	10	10.00	10	10.00	48	48.00	28	28.00

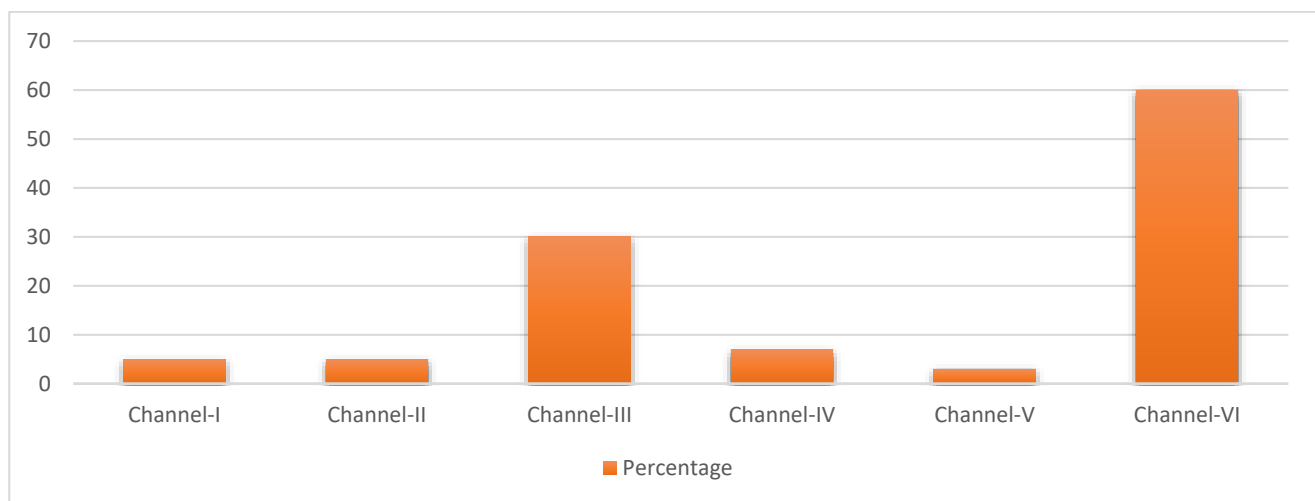


Figure 1. Perception of growers regarding marketing channels used for Chilli.

In Table 2, the perceptions of growers regarding the costs incurred on marketing channels illustrate that Channel VI (Producer - Village merchant - commission agent - wholesaler - retailer - consumer) is not only the most frequently used channel at 60% but also the least costly, with an average cost of Rs 3500. In contrast, other channels like Channel I (Producer - Consumer) incur higher costs of Rs 5500, despite having the same frequency as Channel II (Producer - Retailer - Consumer), which costs Rs 5200. This suggests that while some channels may be more popular, they can also lead to higher expenses for growers. Farmers' voices further illuminate this preference for cost-saving channels. One farmer shared, "We prefer selling to local merchants because it provides immediate cash flow, even though the prices are lower." Another explained, "Direct sales to consumers seem more profitable, but we lack the resources and time for transportation." These insights reveal the practical challenges faced by growers, such as limited access to

transportation and the need for quick payments to sustain their daily operations. While growers understand the potential benefits of direct marketing channels, logistical constraints and financial pressures push them toward multi-tiered systems that offer immediate but lower returns. This complex trade-off underscores the need for targeted interventions to address these barriers and enable farmers to access more profitable channels.

In Figure 2 Channel I is identified as the most beneficial marketing channel for chilli growers, with 36% of respondents considering it the most advantageous. Following this, Channel V (20%) and Channel VI (17%) are also perceived positively, while Channels II, III, and IV have lower percentages of 12%, 5%, and 10%, respectively. This highlights a divergence between usage frequency and perceived benefit, indicating that growers may prioritize certain channels for their effectiveness despite their complexity or cost.

Table 2. Perceptions of growers regarding cost incurred on marketing channels used for chilli.

Market channels	Frequency	Percentage	Cost (Rs)
Channel I: Producer-Consumer	5	5.00	5500
Channel II: Producer – Retailer – Consumer	5	5.00	5200
Channel III: Producer – Commission agent – Retailer – Consumer	30	30.00	4800
Channel IV: Producer – Wholesaler – Retailer – Consumer	7	7.00	4200
Channel V: Producer – Pre Harvest contractor – Wholesaler – Retailer – Consumer	3	3.00	3800
Channel VI: Producer – Village merchant – commission agent – wholesaler – retailer – consumer	60	60.00	3500
Total	100	100	

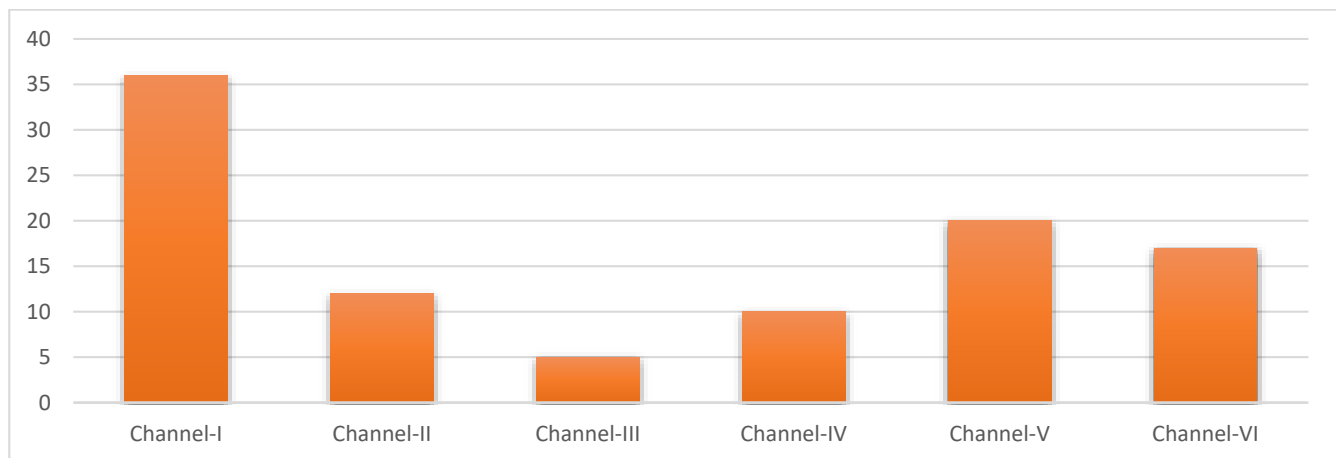


Figure 2. Most beneficial marketing Channel of Chilli.

Table 3. Measures suggest recommendations for sustainable chilli production.

Description of factors	Likert Scale									
	Not at all		To Some Level		Moderate		High Level		Extremely high Level	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Providing adequate storage facility	10	10.00	3	3.00	7	7.00	10	10.00	70	70.00
No strike or hurdle and improvement of transport & communication system	5	5.00	5	5.00	15	15.00	30	30.00	45	45.00
Govt. support for control of smuggling	25	25.00	20	20.00	30	30.00	10	10.00	15	15.00
Self-transportation & low transport cost	4	4.00	5	5.00	15	15.00	20	20.00	56	56.00
Supply of institutional credit at easy term	5	5.00	5	5.00	8	8.00	12	12.00	70	70.00
Providing market information	10	10.00	10	10.00	18	18.00	27	27.00	35	35.00
Establishment of processing industry	3	3.00	5	5.00	15	15.00	24	24.00	53	53.00
Farmer's Training Skill development	2	2.00	3	3.00	20	20.00	30	30.00	45	45.00
Export facilities	3	3.00	3	3.00	15	15.00	26	26.00	53	53.00
Direct link with consumer/consumer market	4	4.00	5	5.00	20	20.00	26	26.00	45	45.00
Crop insurance facilities	5	5.00	7	7.00	10	10.00	10	10.00	60	60.00
Quality inputs availability	2	2.00	5	5.00	15	15.00	31	31.00	47	47.00

Table 3 presents various factors affecting sustainable chilli production and their perceived importance among respondents. The most significant variables, based on the "Extremely high Level" category, are "Providing adequate storage facility" and "Supply of institutional credit at easy term," both receiving 70% of responses. These factors are closely followed by "Crop insurance facilities" at 60%, "Self transportation & low transport cost" at 56%, and both "Establishment processing industry" and "Export facilities" at 53%. The high percentages for these variables indicate that chilli growers in Taluka Kunri, consider storage, financial support, risk management, transportation, processing, and export opportunities as crucial for sustainable production. Interestingly, "Govt. support for control of smuggling" received the lowest percentage in the "Extremely high Level" category at 15%, suggesting it may be perceived as less critical compared to other factors. This analysis provides valuable insights into the priorities of chilli growers and can guide policymakers and stakeholders in addressing the region's most pressing needs for sustainable chilli production.

Discussion

The study on marketing challenges and channel perceptions of chilli growers in Kunri, District Umerkot, highlights several critical issues affecting the agricultural sector in this region. The most pressing concern identified is the rapid fluctuation of prices, with 60% of respondents rating it as an extremely high-level problem. This instability significantly impacts the economic stability of farmers, making it difficult for them to plan and sustain their operations effectively. Additionally, the lack of cooperative marketing associations (50%) and inadequate storage facilities (45%) exacerbate these challenges by limiting growers' ability to store produce and negotiate better prices. Interestingly, while Channel VI (a multi-tiered marketing structure) is the most frequently used due to its lower costs, Channel I (direct producer-to-consumer) is perceived as the most beneficial despite its higher expenses. This discrepancy suggests that while growers are inclined towards cost-effective channels, they recognize the value in more direct sales routes that potentially offer better returns. This discrepancy between the most used and most beneficial channels warrants further investigation into the factors influencing channel selection. For sustainable chilli production, growers emphasize the importance of adequate storage facilities and access to institutional credit on favorable terms.

The high priority given to crop insurance facilities also underscores the need for risk management tools in the face of climate variability and market uncertainties (Madaki et al., 2023). Agricultural insurance plays a crucial role in mitigating risks associated with price fluctuations and disease outbreaks. Insurance acts as a vital risk management tool, helping stabilize farmers' incomes and enhancing their economic resilience. By reducing the financial impact of adverse events, insurance supports farmers in navigating complex marketing channels and improves their overall welfare (Wang et al., 2020).

These results provide valuable insights for policymakers and stakeholders to address the most pressing needs of chilli growers in the region. Future interventions should focus on stabilizing prices, improving storage infrastructure, facilitating access to credit, and promoting direct marketing channels to enhance the sustainability and profitability of chilli production in Kunri, District Umerkot.

Limitations of the Study

Several limitations to this study must be noted. The first limitation was the determination of sample size which included 100 chilli

growers growing chillies in four union councils of Taluka Kunri, hence, it cannot represent the diversity of problems being faced by chilli farmers functioning in various areas of Sindh or Pakistan. As for the second point, the findings are only limited to the specific geographic area Taluka Kunri and thus might not be generalizable to other areas especially those that differ in these socio-economic or environmental conditions from each other. Other districts or provinces must be included in the study to provide a bigger outlook on marketing problems, and this is one of the limitations that could be lifted in future research.

CONCLUSIONS AND RECOMMENDATIONS

Chilli growers in Kunri, District Umerkot encounter several marketing challenges that significantly impact their economic well-being and growth potential. The primary issues include rapid price fluctuations, insufficient cooperative marketing associations, and inadequate storage facilities. These obstacles limit farmers' ability to secure favorable prices and efficiently manage their produce. Although direct sales from producers to consumers (Channel I) are perceived as the most beneficial due to potentially higher returns, the majority of growers continue to use multi-tiered channels like Channel VI because of lower associated costs. This gap between perceived benefits and actual usage highlights the need for strategic interventions to better align marketing practices with the preferences and economic interests of growers.

A comprehensive strategy is proposed to improve the marketing conditions of chilli growers in Kunri, District Umerkot. Key recommendations include stabilizing prices through minimum support prices and buffer stocks, developing critical infrastructure such as storage facilities and transportation hubs, and forming cooperative marketing groups to empower farmers in negotiations. Enhancing access to credit and crop insurance is also essential to reduce financial risks for growers. To align with global trends, promoting direct marketing channels such as farmer's markets and digital platforms, including e-commerce solutions, is crucial. These platforms can enable farmers to bypass intermediaries, access broader markets, and increase profitability. By integrating digital tools for direct farmer-to-consumer interactions, chilli growers can enhance their marketing efficiency and competitiveness. These targeted interventions aim to create a more sustainable and profitable marketing environment, ultimately supporting regional economic development and improving the livelihoods of chilli farmers.

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