

Direct Farmer to Consumer Marketing Opportunities and Barriers

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ABSTRACT

The research is on the farmers of the villages of Paralakhemundi, Uppalada, Kasinagar, Nuagada, R. Udayagiri, Gosani, Jeerango, Chandragiri, Tangudi, and Changudi Agraharam that are located in the Gajapati district of Odisha. The majority of these farmers sell their vegetables, fruits, and other crops directly to consumers through roadside selling. They are mostly middle-aged individuals who completely depend on farming for their income. As a result, many have only a primary education and earn less than ₹ 15,000 a month, which hampers their access to modern or digital marketing. The farmers encounter some major issues, such as poor transport, insufficient storage, and a lack of consumer awareness. All the more, vegetables and fruits spoil relatively quickly due to the absence of cold storage facilities, thus farmers are compelled to lower their prices for selling the produce. Moreover, it was indicated through the study that no support was provided by any government or institutional sources to the farmers adding to their hardships. Nevertheless, consumers have faith in the farmers' products due to their being fresh and locally grown. This confidence leads to a great chance of promoting direct farmer-consumer (DFC) marketing. Upgrading roads, constructing cold storage facilities, training, cooperative marketing, and introducing digital selling platforms will not only help these farmers to increase their income but also lead to a sustainable and profitable farming future in the Gajapati district.

Keywords: Smallholder Farmers, Rural Livelihoods, Direct Farmer-to-Consumer (DFC) Marketing, Agricultural Marketing Barriers

Agriculture is the primary source of livelihood in Odisha, especially in tribal-dominated districts like Gajapati. Farmers in Paralakhemundi often depend on middlemen to sell their produce, which reduces their bargaining power and profits. Direct Farmer-to-Consumer (DFC) marketing has emerged as a potential solution by cutting intermediaries, improving farmers' incomes, and ensuring fresh produce for consumers. However, several challenges—such as inadequate infrastructure, poor digital literacy, lack of organised markets, and limited consumer awareness—hinder its widespread adoption. With

increasing government focus on market reforms, FPOs, and digital platforms, it is timely to examine the opportunities and barriers of DFC marketing in this region. Food Growing also gives sustenance to agriculturalists and forms the central theme of many cultures. The FAO stated in 2021 that something like 60% of the world's working poor are actually farmers,

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with small-circle farmers producing over one-third of the food in the world. But, with globalization, urbanization, and market liberalization, the system of food production and marketing has changed drastically. Farmers have to deal with an increasingly unpredictable pricing structure; big retail chains are taking over their markets, and consumers are demanding premium-quality, food safety, and eco-labels (Pingali, 2015). These changes argue for new marketing pathways that can foster equity and improvement, and inclusiveness for all stakeholders in agriculture. Hence, direct sales to the consumer have appeared as a new and context-dependent strategy. Such arrangements allow farmers to get higher prices for their produce while fostering a relationship of trust with consumers, depending on the elimination of intermediaries (Hinrichs, 2000; Brown & Miller, 2008). Such arrangements are not mere transactional but relational, with embeddedness into the local economy that henceforth shall make rural communities resilient. Globally, farmers' markets in the United States, community-supported agriculture in Europe, and short supply chains in East Asia are demonstration models of how direct marketing could be harnessed to support sustainable agri-food transitions (Ilbery and Maye, 2005; Renting *et al.* 2003).

India offers a very unique and nuanced context to study direct marketing. With nearly 43% of its employment labour engaged in agriculture (Government of India, 2023), agriculture is the rural economy's nucleus. Yet, small and marginal farmers—nearly 86% of India's farming families (NABARD, 2022)—tend to have weak bargaining positions, patchwork landholdings, and scarce linkage to remunerative markets. The traditional marketing system that is regulated by the Agricultural Produce Market Committee (APMC) *mandis* has been criticized to be inefficient, dependent on exploitative middlemen, and inadequate infrastructure (Chand, 2012; Gulati *et al.* 2017). In response, various reforms and innovations have been introduced. The advent of digital platforms such as e-NAM (Electronic National Agriculture Market), cooperative movements like Amul, and state-supported farmers' markets (e.g., Tamil Nadu's Uzhavar Sandhai) represent efforts to enable farmers to access markets more directly. Yet, despite these developments, regional disparities

remain stark, and localized, small-scale initiatives often operate under severe constraints.

Odisha comprises amongst Indian States endowed with immense agricultural potential and yet developmental challenges to redress. Odisha has approximately 65% of its population engaged in agricultural activities with rice, pulses, oilseeds, maize, and millets being the main crops (Odisha Agriculture Statistics, 2022). Odisha has been developed from an agro-based trench but suffers infrastructurally due to lack of mechanization, irrigation facilities, recurrent vulnerability through cyclones, and droughts (Mohapatra and Sahoo, 2020).

Gajapati district, a primarily tribal and hilly region in Odisha—seems to be these structural vulnerabilities at work. Attuned to rain-fed agriculture, farmers in Gajapati and its subdivision Paralakhemundi hold tiny parcels of land and live in extreme poverty. Farmers pursue traditional marketing techniques via weekly markets or *haats*, where they are oftentimes forced into middleman exploitation to fix prices. However, the resilience of farming communities, bolstered by SHGs, cooperatives, and NGOs, points to the power of localized interventions. Thus, Gajapati presents India's paradox of agriculture: endowed with resources and culture, yet denied avenues for market access and development-related benefits. From a conceptual standpoint, it is that direct marketing from farmer to consumer has many parallels with the sustainable livelihoods (Chambers and Conway, 1992) and food sovereignty (Patel, 2009) notions. Direct marketing gave farmers a greater share of profits, launched an anti-intermediary drive, and encouraged the development of community-based networks, all of which improved income stability, food security, and social capital. Besides, it helps to consume fresh, local, and culturally appropriate foods, thus cutting food miles for environmental sustainability (Feagan, 2007).

Nonetheless, there are barriers to the switch to direct marketing. Some of the issues raised by empirical research in India and beyond are poor storage facilities and transportation networks; low consumer demand in the rural market; producers who are unaware of consumer demand; and limited support from policy for alternative marketing approaches

(Singh, 2012; Roy and Thorat, 2008). It is important to keep in mind that designing context-specific solutions will require knowledge of how these barriers manifest in context-specific rural settings, such as tribal and hilly districts of Odisha.

Research has indicated that organic farming tends to yield less crop than traditional farming by an average of about -9.2% (Reganold and Wachter, 2016). This occurrence of yield can be attributed to organic farming prohibitions on synthetic pesticides and fertilizers and their overall growth and production as a consequence. It is also indicated that organic farming is able to enhance soil health that can counteract yield handicaps over the long term (Oldfield *et al.* 2018). Another significant enhancement put into words in research is to preserve and recover SOM, which can enhance crop yields, showing how enhancing soil health can contribute to improving crop yields in organic farming systems (Tahat *et al.* 2020).

Sustainability of small farms has come to be the central theme both in agriculture policy as well as rural development debate, especially among developing economies like India. As many as two-thirds plus of India's population live in the rural terrain, small holder farms contribute to almost 86% of the agricultural labour force, so comprehension regarding the functioning of the conventional systems of farming as well as the directions decided for their sustainable change, becomes critically important.

According to Dev (2012), smallholder farming is considered important in the overall agricultural economy of India. Small farmers face many issues, such as limited access to technology, capital, and opportunities to enhance their productive capacities (Yaqoob *et al.* 2022). Similarly, Koppmair *et al.* (2016) reported that while dietary diversity and production diversity are related, market access and farm-level technologies play bigger roles. Their study concludes that policies aimed at improving market access or provisions of technological assistance to farmers might provide greater benefits to smallholders than policies solely aimed at diversifying production.

This pivotal study by Green *et al.* (2013) sheds light upon an evaluation of the nexus between food price changes and consumption patterns, especially for varying income levels. Findings from the study

indicate that changes in food prices impact the poorer households to a much greater extent from the perspective of food security and economic stability. The study thereby indicates policymakers should consider the economic vulnerabilities of the poor when formulating their responses to food price increase. The systematic literature review and metaregression approach used in this study uphold the importance of accessible data to the understanding of food economics, which is the basic premise upon which AgEcon Search was created.

Food wastage is a concern for food supply chains at large, wherein food securities are compromised for a growing population, which is estimated at least around nine billion by 2050. According to Parfitt, Barthel, and Macnaughton (2010), by making food supply chains more efficient, there could be fewer post-harvest losses, more so for smallholder farmers. Therefore, by cutting down on food wastage, all stakeholders would ensure food availability and access; both of which are pertinent to food security.

Social norms, literacy, and the structure of family decision-making are cited by researchers as factors associated with an increase in adoption of new products and brands in the villages (Kaur and Singh, 2005; Bhavika Pandita Hakhroo, 2020). Behavioural models for rural consumers often supplement classical marketing frameworks with several local variables like cooperative membership, extension-contact, and tradition-based brand loyalties (Kaur and Singh, 2005; Hakhroo, 2020).

Direct marketing has been defined by marketing channels whereby farmers sell produce directly to consumers, without the goods passing through traditional intermediaries. Brown and Miller (2008) evaluated the impacts of direct markets, including farmers' markets and CSAs, concluding that these outlets tend to create strong producer-consumer ties, although with varying benefits economically. Along the same lines, Hinrichs (2000) emphasized that direct markets promote trust and social embeddedness within local food systems.

Direct farm marketing is increasingly recognized as a means for enhancing rural development and preserving small-scale production. According to Gale (1997), direct marketing promotes entrepreneurship that supports alternative agriculture and attracts

tourists to rural areas. Farm income from direct marketing is minimal in the larger scheme of things, but it does exert more impact if the communities lie adjacent to urban centers where access to consumers is easier.

Such themes have been intertwined in empirical works. Uematsu and Mishra (2011) claimed that farms using direct-market approaches received greater business income, especially among small and diversified producers. The same can be said with Detre *et al.* (2011), wherein the authors found a positive relationship between direct marketing and farm income. Hardesty and Leff (2010), however, suggested that higher marketing costs often offset the benefit. Park *et al.* (2014) found that the gains are not shared equally among operators, depending on farm size, marketing channel, and location.

Globally, direct marketing has been studied as a possible way to increase farmer income and improve access for consumers. Alok K. Sahoo and Krishna (2020) maintained that direct marketing in India, under the influence of agricultural market reform, simplifies chains by reducing intermediaries and increasing profitability for farmers. Similarly, Abraham and Joseph (2019) studied direct marketing in a digitalized environment and determined that it was one of the highest-performing options for enhancing producer-consumer linkage.

Animal husbandry is often emphasized as one of the major sources of livelihood, especially for the landless. Patel (2004) observed that common property resources, which are becoming more privatized, have led livestock production to become the only option for many households. Bossio (2009) further remarked that livestock production plays a role in farm diversification, intensification, and risk management. More recently, Mahammad, Chauhan and Vinaya (2022) observed dairy farming continues to be a pillar of rural livelihoods.

The declining farm-gate prices and growing consumer demand for local food have been connected with the simultaneous rise in direct marketing from the farmer to the consumer. Vecchio (2009) suggested that farmers' markets in Europe and the US arose partly out of farmers' dissatisfaction with commodity prices and consumer interest in genuine regional foods. According to the German Farmers'

Association (2015) and the Federal Statistical Office (2016), the prices offered to producers fell while retail food prices remained stable. Jongeneel *et al.* (2010) similarly show that dairy producers face the volatility of milk prices while pig farmers confront long-term price declines at producer levels.

Food security and farmer livelihoods have been analysed extensively across disciplines. Altieri (2009) stated that sustainable food security cannot be achieved without empowering smallholder farmers and improving their access to local markets. The FAO (2014) stressed that direct marketing channels are the best means of linking small producers with consumers, thus eliminating intermediaries and increasing farmers' income.

Plenty has been written on agricultural marketing in India from the perspective of reforms, challenges, and technological opportunities. Rao and Hans (2012) stood for the perspective that ICT is paramount in reshaping agricultural markets so that they can offer a better degree of transparency and farmer-consumer linkages. In the same vein, Shetty and Hans (2015) investigated the role of e-marketing and concluded that digital alternatives decrease intermediation layers that affect price realization for farmers.

Barriers to purchasing locally produced food remain significant. According to Kezis *et al.* (1984), the inconvenience and lack of a nearby outlet discouraged participation in the Northeastern states, while Rhodus *et al.* (1994) reported a similar pattern in Ohio. The Hartman Group (1996) added that consumers, while expressing environmental concerns, expect sustainable products to be easily accessible.

According to Varmudy (2011), farmers growing brinjal in India had major problems, being marketing systems; non-availability of disease-resistant varieties; lack of farmer training; and the absence of cold storage facilities. Similarly, according to Prasad and Prasad (1995), farmers often find themselves forced to sell produce at unfavourable times and places. Acharya and Agarwal (1999) ascribed to the concept of an "ideal marketing system" for India. Acharya (2006) emphasized rural credit and marketing reforms for agricultural development. Vadivelu and Kiran (2013) analyzed issues and prospects in agricultural marketing.

According to Satheesh (2018), in Maharashtra, about 40,000 farmers marched to Mumbai demanding better crop prices and loan waivers, referred to as the great green revolution in farmer protest. In November 2019, Al Jazeera reported similar protests in Delhi highlighting agrarian distress. Pandey (2020) noted that over 50 major farm protests between January and September 2020 occurred over debt, irrigation inadequacy, and low crop prices.

The Food and Agriculture Organization (FAO, 2015) defines e-agriculture as the design, development, and application of ICT-based innovative solutions applied to agricultural issues with the primary goal of enhancing rural development and agricultural productivity. Chauhan (2015) insisted that Indian agriculture, contributing about 18.6% to the GDP and employing 59% of the population, would gain a major uplift from ICT adoption in crop cultivation, pest management, irrigation, and marketing as well.

Rao and Hans (2012) and Shetty and Hans (2015) further noted that ICT and e-marketing tools improve transparency, market connectivity, and income realization for farmers. Kumar and Singh (2021) expanded this discussion by showing that digital-agriculture technologies such as e-NAM and mobile advisories empower farmers but require better infrastructure and digital literacy to ensure inclusivity.

RESEARCH GAP

While the existing scholarship is considerable in terms of agricultural marketing in India, focused mainly on large-scale cooperative models, as well as macroeconomic policies (e.g. APMC reforms and trade liberalization), there is limited research conducted on localized smallscale, farmer-to-consumer networks in rural and poorly developed regions. In Odisha, for example, research has mainly focused upon aspects of production systems, food security issues, or climate risks, while marketing has received limited attention (Dash, 2019; Behera, 2021). This research intends to begin to address this gap through a systematic investigation of opportunities and barriers to direct marketing in Gajapati and Paralakhemundi as a case study, and is situated at the overlap of rural development, agricultural marketing, and sustainable livelihoods, contributing both empirically and theoretically to the debate.

METHODOLOGY

This study explores how farmers in Gajapati and Paralakhemundi districts of Odisha sell their produce directly to consumers and the factors that influence their success. By combining both numbers and narratives, the research seeks a complete picture of the opportunities and challenges in local farmer-consumer markets. The study looks at measurable factors such as age, gender, income, and marketing methods while also considering the broader context through interviews and observations, using both statistical and descriptive analysis. The focus area includes Paralakhemundi, the district headquarters, and nearby villages like Paralakhemundi, Uppalada, Kasinagar, Nuagada, R. Udayagiri, Gosain, Jeerango, Chandragiri, and Changudi Agraharam. These communities, situated in the hilly Eastern Ghats, mainly practice rain-fed farming of rice, millets, and vegetables. Weekly local markets (*haats*) connect these smallholders with nearby towns, forming an emerging network of direct sales. The study surveyed 40 farmers from these villages using structured questionnaires, providing a fair representation of smallholder farmers in the region. Villages were selected to reflect differences in geography, farm size, and market involvement. Data collection took place during 2024–2025, offering insights into the real-world challenges and practices shaping local agricultural marketing. The study's sampling frame was developed from a list of active farming households across selected villages in the Paralakhemundi sub-division, including Paralakhemundi, Uppalada, Kasinagar, Changudi Agraharam, Nuagada, R. Udayagiri, Gosani, Jeerango, Chandragiri, Tangudi, and Namana Garh, chosen to reflect diversity in geography, farm size, and market participation.

A total of 40 farmers from Gajapati district were surveyed using a structured questionnaire, providing a fair representation of the smallholder community. Purposive sampling was employed to select respondents actively involved in direct marketing or short supply chains, ensuring inclusion of farmers with practical experience.

RESULTS AND DISCUSSION

The sample comprised 60% male and 40% female farmers, mostly aged 30–49 years, highlighting the

dominance of economically active middle-aged farmers in direct marketing. This approach also enabled the inclusion of tribal and marginalized farmers, offering authentic insights from underdeveloped areas. The study of farmers in Gajapati and Paralakhemundi districts reveals that agricultural marketing and direct farmer-to-consumer (DFC) activities are largely dominated by middleaged, economically active individuals, with 60% male and 40% female participation. Most farmers (76%) fall within the 30–49 age group, while youth participation is low (11.76%) and older farmers (50–59 years) continue traditional practices with limited engagement in modern marketing.

Education levels are generally basic, with 70% having completed only primary education and 30% reaching secondary level, which may restrict access to market information, technology adoption, and understanding of new marketing practices. Agriculture remains the main source of income, with 97.5% relying on farming or vegetable vending and only a small fraction (2.5%) engaged in allied activities, while the majority (62.5%) earn below ₹ 15,000 per month, indicating low profitability and dependence on small-scale production. Vegetable cultivation for market sale is limited, as 62.5% of farmers do not grow vegetables commercially, while 37.5% cultivate crops such as cauliflower, cabbage, and potatoes, suggesting that horticultural farming is mostly supplementary. Overall, the findings highlight that smallholder farmers in the region rely heavily on traditional crops and face challenges in income diversification, market access, and adoption of modern marketing practices.

Table 1: Direct Farmer-to-Consumer (DFC) Channels Used

Type of Channel	Number of Respondents	Percentage (%)
Roadside Sales	40	100%
Total	40	100%

All respondents (100%) reported using roadside sales as their primary direct farmer-to-consumer (DFC) channel. This shows a strong reliance on local, informal markets where farmers directly sell to consumers without intermediaries. Such a model offers immediate cash flow and minimal transport

costs but limits market expansion, price negotiation, and scalability beyond nearby communities.

Table 2: Major Barriers Faced by Farmers in Direct Marketing Table: Major Barriers Faced by Farmers in Direct Marketing

Barrier Type	Number of Respondents	Percentage (%)
Poor transport/ logistics	25	62.5%
Limited consumer awareness/demand	10	25%
Perishability of produce	5	12.5%
Total	40	100%

The primary barrier identified is poor transport and logistics (62.5%), indicating inadequate infrastructure for moving perishables efficiently. Limited consumer awareness (25%) restricts the reach of direct markets, while perishability of produce (12.5%) adds further risk to farmers. These challenges highlight the need for improved transport networks, cold storage facilities, and marketing awareness programs to enhance the efficiency and sustainability of farmer-to-consumer marketing systems. All 40 farmers surveyed (100%) reported receiving no institutional or government support for marketing or production activities. This highlights a significant gap in policy outreach and grassroots support, limiting farmers' access to credit, training, and essential infrastructure. The absence of assistance underscores the urgent need for effective implementation of extension services and market linkage programs to enhance productivity, income, and overall livelihood opportunities for smallholder farmers.

Farmers' Perception of Consumer Trust in DFC Channels

The results indicate that 70% of respondents (Agree + Strongly Agree) believe consumers trust direct farmer channels, reflecting growing confidence in locally sourced products. However, 30% remain neutral, possibly due to inconsistent quality or lack of standardized pricing. Overall, farmers perceive a positive relationship with consumers, which can be strengthened further through better marketing communication, product branding, and transparent

farm-to-market interactions. The study reveals that 70% of farmers (40% Agree and 30% Strongly Agree) believe consumers trust direct farmer-to-consumer (DFC) channels, indicating growing confidence in locally sourced products. However, 30% of respondents remained neutral, possibly due to inconsistent quality or non-standardized pricing. Overall, farmers perceive a generally positive relationship with consumers, which could be further strengthened through improved marketing communication, product branding, and transparent farm-to-market interactions.

STATISTICAL ANALYSIS

Hypothesis testing

Chi-Square Test of Independence: Relationship between Age Group and Income Group

To examine whether there is any significant relationship between Age Group and Income Group among respondents.

Table 3: Observed Frequency Table

Age Group	10k-20k	20k-30k	30k-40k	40k+	Row Total
18-29	2	3	2	1	8
30-39	7	5	3	1	16
40-49	6	4	2	1	13
50-59	1	1	1	0	3
Total	16	13	8	3	40

Hypothesis

- ♦ H1 (Null Hypothesis): Age group and income group are independent.
- ♦ H2 (Alternative Hypothesis): Age group and income group are dependent.

Table 4: Expected Frequencies (calculated)

Age Group	10k-20k	20k-30k	30k-40k	40k+
18-29	3.20	2.60	1.60	0.60
30-39	6.40	5.20	3.20	1.20
40-49	5.20	4.23	2.60	0.98
50-59	1.20	0.98	0.60	0.23

Table 5: Test Results

Statistic	Value
Chi-square (χ^2)	1.79
Degrees of Freedom (df)	9
p-value	0.994

Decision Rule

p-value (0.994) > 0.05

Fail to reject the null hypothesis.

This means there is no statistically significant association between age group and income group.

FINDINGS

- ♦ *Demographics:* Middle-aged farmers dominate (76% aged 30-49), with 60% male and 40% female; youth participation is low (11.76%).
- ♦ *Education:* Most farmers have basic education (70% primary, 30% secondary), limiting access to market information and modern practices.
- ♦ *Income & Agriculture:* Agriculture is the main source of income (97.5%), with most earning below ₹ 15,000 per month; vegetable cultivation is largely supplementary.
- ♦ *DFC Channels:* All farmers (100%) use roadside sales for direct marketing.
- ♦ *Barriers:* Poor transport/logistics (62.5%), limited consumer awareness (25%), and perishability (12.5%) restrict marketing efficiency.
- ♦ *Support:* No farmers received institutional or government support, highlighting gaps in credit, training, and infrastructure.
- ♦ *Consumer Trust:* 70% perceive positive consumer trust in DFC channels, suggesting potential for growth through better marketing, branding, and transparency.

CONCLUSION

This study focuses on the hardworking farmers from villages such as Paralakhemundi, Uppalada, Kasinagar, Nuagada, R. Udayagiri, Gosani, Jeerango, Chandragiri, Tangudi, and Chasngudi Agraharam in Gajapati district of Odisha. These farmers mostly depend on roadside sales to sell their vegetables,

fruits, and other crops directly to consumers. This is the most common and simple method they use to earn a living because it does not require big investments or complex systems. By selling directly on roadsides or local markets, farmers can get instant cash and avoid middlemen who often take a big share of their profit. Most of these farmers are middle-aged, and farming is their main or only source of income. They work hard every day in the fields but earn very little – usually below ₹ 15,000 per month. Many of them have completed only primary-level education, which limits their ability to learn new marketing techniques or use digital platforms such as mobile apps or online markets. The study also found that women farmers play a major role in selling vegetables in local *haats* and roadside markets, but they face even more challenges due to limited training and access to financial resources. The main problems these farmers face are quite serious. The biggest issue is poor transport facilities – most villages are in hilly areas with rough roads, making it difficult to carry perishable produce to larger markets. Because of this, many farmers are forced to sell their products quickly and cheaply at the roadside. Another major challenge is the lack of consumer awareness. Many people in nearby towns do not know about these farmers or the freshness of their products, so demand remains low. Perishability of produce is another concern, as vegetables and fruits spoil quickly in the absence of cold storage or packaging facilities. All these problems reduce farmers' income and discourage them from expanding their business. A very important finding of this study is that none of the farmers have received government or institutional support. There are no schemes or training programs effectively reaching these remote areas. Farmers lack proper information about subsidies, loans, or modern marketing initiatives. This lack of support adds to their daily struggle and keeps them trapped in small scale, low-profit farming. However, there are also positive signs. Around 70% of farmers believe that consumers trust their products because they are fresh, locally grown, and chemical-free. This strong relationship between farmers and consumers gives hope for improving direct farmer-to-consumer (DFC) marketing in the future. Building on this trust, farmers can benefit more if they are supported with proper infrastructure, better training, and access to technology.

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