



E-commerce Platforms Supported by the Government in India for Marketing of Organic Products: A Review

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ABSTRACT

E-commerce, or electronic commerce, involves buying and selling goods and services over the internet. The organic product market in India has experienced substantial growth in recent years, driven by increasing consumer awareness of health and environmental issues. The sale of organic products is getting supported and promoted through various e-commerce platforms. The Indian government's support for organic products through e-commerce platforms has gained momentum, reflecting its commitment to sustainable agriculture and consumer health. This paper reviews the e-commerce platforms supported by the government, focusing on their role in marketing organic products. It investigates specific policies and initiatives taken by the government to support e-commerce platforms and evaluates the success of these platforms. It conducts a comparative analysis with non-government supported platforms, identifies the challenges faced and recommend for future improvements.

Keywords: E-commerce, e-NAM, Farmers, Government support, India, Initiatives, Jaivik Kheti Portal, Marketing, NPOP, Organic products, Policies, PKVY.

1. Introduction

The increasing consumer demand for organic products, driven by health and environmental concerns, has necessitated enhanced marketing and distribution channels. The emergence of e-commerce (i.e purchase and sale of goods over internet) has not only revolutionized system of retail marketing but significantly transformed the retail landscape. The growth of e-commerce in India has been significant, driven by increasing internet penetration and digital literacy. This growth has provided new avenues for marketing of commodities. In fact, it is providing new opportunities for marketing of various products, including organic goods. The Indian government has implemented several policies and initiatives to support e-commerce platforms, recognizing their potential to enhance market access for organic products and promote sustainable agricultural practices. The government's support for e-commerce platforms has been crucial in promoting the distribution and marketing of organic products, ensuring better market access, and supporting sustainable agricultural practices.

2. Objectives of the Study

This research study aims to analyze the landscape of e-markets for organic products in India, highlighting the government initiatives, market impacts, key players, challenges, and future prospects in this sector. The primary objectives of this paper are listed but not limited to the followings:

- To identify current landscape of e-commerce platforms in India supported by the government.
- To examine the policies and initiatives taken by the government in support of e-commerce platforms for the marketing of organic products.

- c) To evaluate the effectiveness of the government-supported e-commerce platforms in marketing organic products.
- d) To investigate impact of the e-commerce platform on organic farmers and consumers.
- e) To identify challenges and limitations faced by the government-supported e-commerce platforms.

By focusing on these objectives, the study aims to provide a comprehensive review on effectiveness and impact of government-supported e-commerce platforms in promoting and marketing of organic products in India.

3. Literature Review

Global Trends in Organic Product Markets

The global organic product market has been expanding rapidly, driven by increasing consumer awareness and demand for sustainable products. In 2020, the global organic food and beverage market was valued at USD 220 billion and is expected to grow at a compound annual growth rate (CAGR) of 16% from 2021 to 2028 (Grand View Research, 2021). This growth is attributed to the rising health consciousness among consumers and the increasing availability of organic products online. Darjee (2023a) observed that as per NPOP 2012 reports on demand of organic products increasing rapidly at the developed countries comprising European Union, Canada and USA while its market also growing at other countries like Italy and Singapore. Despite of domestic production meeting the demands substantially, these countries have been increasingly importing organic products from other countries (Darjee, 2023a).

Emergence of Organic Products Market in India

The organic product industry in India is part of a global trend towards more sustainable and environmentally friendly products. Organic farming, which avoids synthetic fertilizers and pesticides, has been promoted as a way to improve soil health, reduce pollution, and enhance biodiversity (Yadav & Srivastava, 2019). The organic farming, supported by various government schemes, has gained prominence as a sustainable agricultural practice (Ministry of Agriculture, 2021). The marketing of organic products, in particular, has benefited from these policies, as they provide necessary infrastructure and support mechanisms (Reddy & Rao, 2019). Previous studies have explored the impact of these policies on e-commerce growth and the agricultural sector (Kumar et al., 2021).

Growth in Organic Product Markets in India

India has emerged as a significant player in the global organic product market. The country's diverse agro-climatic conditions and rich biodiversity make it suitable for organic farming (Sharma & Singh, 2020). The organic products market in India has been expanding at a compound annual growth rate (CAGR) of 20-25% over the past few years (APEDA, 2021). This growth is fueled by a rising number of health-conscious consumers and an increasing awareness of the benefits of organic farming. Indian organic food market was valued at USD 849 million in 2020 and is projected to grow at a CAGR of 20% between 2021 and 2026 (IMARC Group, 2021). The organic food segment alone was valued at INR 40,000 crores in 2020 and is projected to reach INR 100,000 crores by 2025 (FICCI, 2020).

E-commerce Landscape in India

The rise of e-commerce has opened new avenues for marketing various products. Driven by increasing internet penetration, e-commerce in India has seen substantial growth, with numerous platforms emerging to cater to diverse market needs. It has been bolstered by various government policies aimed at promoting digital trade and market access (Ministry of Commerce and Industry, 2021). E-markets have emerged as a crucial platform for the distribution and sale of organic products, providing a convenient and efficient way for consumers to access these goods. The Government of India has actively supported the promotion and sale of organic products through various e-commerce platforms. Recognizing the importance of organic farming and the demand for organic products, the Indian government has launched various initiatives to support e-commerce platforms specializing in organic products.

Online Markets for Organic Products

The rise of e-commerce platforms has transformed the retail landscape, providing consumers with greater access to a wide range of products, including organic goods. Online markets for organic products offer several advantages, such as convenience, variety, and competitive pricing. However, they also face challenges, such as ensuring product authenticity, managing supply chains, and building consumer trust (Kumar & Dangi, 2019).

Growth of E-commerce platform in India

The growth of e-commerce in India has been exponential over the past decade. According to the India Brand Equity Foundation (IBEF, 2021), the Indian e-commerce market is expected to reach USD 111 billion by 2024, up from USD 46.2 billion in 2020. This growth has been driven by increasing internet penetration, the proliferation of smartphones, favorable regulatory environment and supportive government policies like the Digital India initiative (Dutta, 2020).

From the review of literature, it is analyzed that the consumers are increasingly prioritizing health and wellness, leading to a surge in demand for organic foods. Especially with regards to the demand for organic products in India, it is driven by a growing middle class, increasing health awareness, and the government support for organic agriculture. On the other hand, the organic products market in India is witnessing remarkable growth. With the support of the Government of India, the online market for organic products in India is also growing rapidly.

4. Methodology

This study employs a qualitative and exploratory research approaches, thereby making review and analysis on the secondary data made available in form of government reports, academic journals, and case studies of e-commerce platforms. Data were collected through a comprehensive review of relevant literature, published documents and official websites of the government and their establishments.

5. Factors Driving the Growth of Online Markets for Organic Products in India

The growth of the organic products market in India is driven by several key factors. It can be attributed by mixture of some factors listed, but not limited to those furnished here-below:-

(a) Increasing Health Awareness: One of the primary factors driving the growth of markets for organic products in India is the increasing health awareness among consumers. As people become more conscious of the health risks associated with conventional products, they are increasingly turning to organic alternatives (Pandey & Singh, 2019). The COVID-19 pandemic has heightened awareness about health and immunity, leading to increased consumption of organic foods known for their higher nutritional value and absence of harmful chemicals (KPMG, 2021). Organic products are perceived as healthier, safer, and more nutritious, leading to a growing demand for these products.

(b) Environmental Concerns: Environmental concerns are another significant driver of the demand for organic products. The consumers are becoming more aware of the environmental impact of conventional farming practices, such as soil degradation, water pollution, and biodiversity loss. Organic farming, on the other hand, is seen as sustainable and eco-friendly alternative (Sharma et al., 2020). Consumers are becoming more environmentally conscious, preferring products that are sustainably produced. Organic farming practices, which avoid synthetic fertilizers and pesticides, are viewed as more eco-friendly (IFOAM, 2020).

(c) Government Support: The Government of India has implemented several initiatives to promote organic agriculture, including financial support, training programs, and certification schemes. These efforts have contributed to the growth of the organic product market by increasing the supply of organic goods and enhancing consumer confidence in the quality of these products (Yadav & Srivastava, 2019).

(d) Expansion of E-commerce Platforms: The rapid expansion of e-commerce platforms in India has made it easier for consumers to access organic products. Online marketplaces like Amazon, Flipkart, and BigBasket have dedicated sections for organic products, offering a wide range of options to consumers. This increased accessibility has contributed to the growth of online markets for organic products (Gupta & Singh, 2020).

(e) Consumer Preferences and Trends: Consumer behavior towards organic products in India is influenced by several factors, including health consciousness, environmental concerns, and lifestyle choices. According to a survey by ASSOCHAM (2021), 62% of Indian consumers prefer organic products due to their perceived health benefits. Additionally, there is a growing awareness of the environmental impact of conventional farming practices, driving consumers towards organic alternatives (ASSOCHAM, 2021).

(f) Ethical and Transparent Sourcing: There is a growing demand for transparency in the sourcing and production of organic products. Consumers are willing to pay a premium for products that are ethically sourced and certified by reputable organizations (Deloitte, 2021).

The increasing demands for organic products on account of perceived health benefits and nutritional value has alternatively increased the demand for eco-friendly organic farming practices. The government support for organic agriculture has helped to increase the supply and consumer trust in organic products. The expansion of e-commerce platforms has made organic products more accessible to consumers. Influenced by

health consciousness and lifestyle choices, significant percentage of customer favouring organic products are willing to pay premium prices for ethically sourced and certified organic products.

6. Government Initiatives to Promote Organic Products

The Government of India has introduced several policies and programs to promote organic farming and support the sale of organic products through e-commerce platforms. The Ministry of Agriculture & Farmers Welfare (MoA & FW), Govt of India is a primary government body and nodal department at apex level in the country responsible for formulating and implementing national policies and programmes related to agriculture and allied activities including organic farming initiatives. The key initiatives of organic farming under this ministry comprised of Paramparagat Krishi Vikas Yojana (PKVY), National Mission for Sustainable Agriculture (NMSA) and Mission Organic Value Chain Development for North Eastern Region (MOVCDNER). Whereas, the National Program for Organic Production (NPOP) considered as cornerstone of India's organic farming policy is administered and managed by Agricultural and Processed Food Products Export Development Authority (APEDA) under the aegis of the Ministry of Commerce and Industry, Government of India Ministry (Darjee, 2023b).

The notable policy initiatives for organic farming and organic production in India comprise of, but limited to the followings:-

(a) Paramparagat Krishi Vikas Yojana (PKVY): The PKVY aims to promote organic farming through a cluster-based approach. It supports farmers in adopting organic practices, provides certification assistance, and helps in marketing organic products (Ministry of Agriculture, 2021). Under this scheme, the financial assistance provided covers different activities like certification, marketing of organic products and cost of organic input including organic seed procurement, bio-fertilizers, organic manure and plant protection measures (Darjee, 2023c).

(b) National Programme for Organic Production (NPOP): The NPOP sets standards for organic production and processes. It facilitates the certification of organic products, ensuring authenticity and quality for consumers (APEDA, 2021). It is an initiative implemented by the Government of India to promote organic agriculture and ensure the quality and standardization of organic products (Darjee, 2023c). The introduction of NPOP was a strategic move to align India's agricultural practices with global standards through a credible certification framework and facilitated the entry of Indian organic products into burgeoning international market for organic products (Darjee, 2023d).

(c) Mission Organic Value Chain Development for North Eastern Region (MOVCDNER): This scheme promotes organic farming and market linkages in the North-East states of India (Ministry of Agriculture, 2021). It is a mission exclusively dedicated to the States of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura since 2015-16 realizing the potential of the region and implemented by the respective State Level Executive Committee (SLEC) executed through a designated state Lead Agency in the form of state "Organic Commodity Board" or "Organic Mission". It has as significantly brought revolution for organic farming in the North-East region of India (Darjee, 2023e).

(d) Organic e-commerce Platforms: The government has launched several policies and initiatives to support various e-commerce platforms and facilitate the sale of organic products, mainly comprising Jaivik Kheti Portal and National Agricultural Market (e-NAM).

Accordingly, it can be considered that the Government of India has introduced necessary policies and programs to promote organic farming and support the sale of organic products through government supported e-commerce platforms. While the PKVY promotes organic farming through a cluster-based approach with certification assistance and marketing support; the NPOP sets standards for organic production and certification; but MOVCDNER promotes organic farming and market linkages in the North-East states only. Additionally, the government supported e-commerce platforms facilitates the sale of organic products.

The policies and initiatives undertaken by the government significantly promotes the farming and marketing of organic products, which can be listed but not limited to those furnished here-below:-

(a) Enhanced Market Access: The platforms provide organic farmers with wider market access, connecting them directly with consumers and reducing the role of intermediaries (Reddy & Rao, 2019).

(b) Financial Support and Incentives: The government schemes provide financial support and incentives to organic farmers, encouraging the adoption of organic practices and participation in e-commerce platforms (Kumar et al., 2021).

(c) Awareness and Training Programs: The various programs aim to raise awareness about the benefits of organic products and provide training to farmers on using digital platforms effectively (Ministry of Agriculture, 2021).

(d) Quality Assurance and Certification: The government initiatives ensure quality assurance and certification of organic products, enhancing consumer trust and marketability (Ministry of Commerce and Industry, 2021).

The government's policies and initiatives significantly helped to promote the farming and marketing of organic products through various measures. These include enhanced market access for organic farmers by connecting them directly with consumers and reducing intermediaries, financial support and incentives to encourage organic practices and participation in e-commerce platforms, awareness and training programs to educate farmers on the benefits of organic products and the use of digital platforms, and quality assurance and certification initiatives to enhance consumer trust and the marketability of organic products.

These policies and initiatives played crucial role in supporting e-commerce platforms for organic products providing necessary infrastructure, financial support and training, enabling organic farmers to leverage e-commerce for better market access and profitability.

7. Analysis of Current E-commerce Landscape for Organic Products in India

The launch of the Digital India Initiative in 2015 has transformed India into a digitally empowered society and knowledge economy (Ministry of Electronics and Information Technology, 2015). It provides the necessary digital infrastructure to support e-commerce growth. Whereas, the government's support to e-commerce platforms enhanced market access for organic products. Those e-commerce platform dealing with marketing of the organic products either directly or indirectly comprised of, but not limited to those listed here-below:-

(a) e-NAM (National Agriculture Market): The e-NAM was launched as a pan-India electronic trading portal by the Ministry of Agriculture, Government of India. This initiative integrates and unified agricultural markets across India through a digital platform, enhancing the marketing of agricultural products including organic goods (Ministry of Agriculture, 2022). Primarily being a platform for agricultural commodities, but it also included organic products, enabling farmers to access a larger market and get better prices (Ministry of Agriculture, 2021).

(b) GeM (Government e-Marketplace): The GeM facilitates online procurement of goods and services required by various government departments and organizations (Ministry of Commerce and Industry, 2021). It includes a category for organic products, promoting their use in government offices and institutions.

(c) TRIFED (Tribal Cooperative Marketing Development Federation of India): The TRIFED's online platform offering markets for organic products produced by tribal communities, ensuring fair prices and market reach (TRIFED, 2022).

(d) Jaivik Kheti Portal: It connects organic farmers directly with consumers thereby promoting the sale of organic products (Jaivik Kheti, 2022).

These identified government supported e-commerce platforms have distinct structures, features, and functionalities designed to promote organic product marketing is furnished in the Table-1 placed below.

Table -1: Structure, Features and Functionalities of Govt. supported E-commerce Platforms

e-Commerce Platforms	Comparative view of their structure, features and functionalities		
	Structure	Features	Functionalities
1. e-NAM	e-NAM connects physical wholesale markets through an online platform	Real-time price discovery, transparent auction processes, and quality assaying of products.	Facilitates better price realization for farmers and provides information on produce arrival and prices (Ministry of Agriculture, 2022)
2. GeM	Centralized online platform for government procurement.	User-friendly interface, product comparison, and secure payment gateways.	Ensures procurement transparency and efficiency, promotes organic product categories (Ministry of Commerce and Industry, 2021).
3. TRIFED	Online marketplace for tribal products.	Showcases a wide range of organic and natural products, including food items and handicrafts.	Enhances market access for tribal producers, ensures fair trade practices (TRIFED, 2022).
4. Jaivik Kheti Portal	National Online user -friendly platform and e-marketplace for buyer and seller of organic products of India. It facilitates growth and	Provides comprehensive database of organic products together with organic farming techniques, benefits, certifications and a network of Government bodies, industry experts	Easy registration and profile management for different types of users. It has user-friendly navigation with categorized sections and sub-sections. It has mobile-friendly interface for on-the-go access with interactive tool for farm management and productivity analysis.

	adoption of organic farming practices.	and other stakeholders.	
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Amongst all platforms mentioned above, the Jaivik Kheti portal (<https://jaivikkheti.in>) is an integrated national platform designed to promote organic farming in India and exclusively dedicated to marketing of organic products. Besides, it serves as a unified information and comprehensive service gateway for various stakeholders of agricultural sector such as farmers, buyers, government agencies, and certification bodies. It facilitates the growth and adoption of organic farming practices by providing a comprehensive, user-friendly platform for information, commerce, and community engagement. The concise account of key structural components, features and functionalities of the Jaivik Kheti portal comprised of, but not limited to those furnished in the Table-2 placed here-below.

Table -2: Key Structure, Features and Functionalities of the Jaivik Kheti Portal

Sr	Structure	Features	Functionalities
1	Homepage: The homepage provides a general overview of the portal, highlighting its mission and objectives. It includes links to various sections such as buyer and seller registration, product listing, and information resources.	Interactive Marketplace: Facilitates direct interaction between organic farmers and buyers, ensuring transparency and fair pricing.	User-Friendly Interface: The portal is designed to be intuitive and easy to navigate, with a multilingual interface to cater to users from different regions.
2	User Registration and Login: Cater a dedicated section for user registration and login for different types of users (farmers, buyers, certifiers) with tailored registration forms and login functionalities.	Organic Certification: Caters information and support for obtaining organic certification, including a list of accredited certifying bodies and certification processes.	Real-Time Updates: Regularly updates on market prices, new product listings, and policy changes affecting the organic farming sector.
3	Product Listing and Marketplace: A unique platform where organic products are listed by registered farmers or sellers. The buyers can browse and purchase these products.	Knowledge Sharing: Provides access to a wealth of information on organic farming techniques, pest management, soil health, and sustainable agriculture practices.	E-commerce Integration: Secures payment gateways and transaction tracking for smooth and reliable trade of organic products.
4	Resource Center: It has a comprehensive library of resources comprising articles, research papers, guidelines, and best practices related to organic farming.	Government Schemes and Subsidies: Contains information on various government schemes, subsidies, and financial assistance available for organic farming.	Mobile Accessibility: Optimized for mobile devices to ensure accessibility for farmers and buyers on the go.
5	Support and Help Desk: Provides assistance and support through frequently asked questions (FAQs), contact forms, and a dedicated helpdesk for resolving user queries.	Event Updates: Section dedicated for notifications and updates on workshops, training programs, seminars, and other events related to organic farming.	Feedback Mechanism: Enables users to provide feedback on their experiences, helping to improve the portal's services and functionalities (Ministry of Agriculture, 2021)

In addition to those discussed above, the physical marketplaces supported by the government such as Organic Mandis are extensively utilized by the farmers to sell their organic products directly to consumers, which also has online presence, extending their reach to a larger audience (Ministry of Agriculture, 2021). All these platforms collectively provide essential services such as market integration, price transparency and secure transactions, which are crucial for the effective marketing of organic products.

However, the current e-commerce landscape for organic products in India becomes incomplete without mention of key private players in the market. Alongside government supported e-commerce platform, several private players in the market dealing with organic products wholly or/and partially can be broadly divided

into two categories as mainstream e-commerce giants and dedicated organic marketplaces, some notable ones picked up for ready references are furnished in the Table-3 placed here-below:-

Table -3: Key Non-Government Players in the Market for Organic Product in India

Sr	Name	Description
Mainstream E-commerce Giants		
1	Amazon India www.amazon.in	Amazon India offers a wide range of organic products across various categories, including beauty, personal care, and home essentials. These products are designed to meet the growing demand for eco-friendly and sustainable options among Indian consumers. 'Amazon Pantry' and 'Amazon Fresh' sections include a substantial range of organic products. The platform's extensive reach and customer base provide significant visibility for organic brands (Amazon India, 2024).
2	Flipkart www.flipkart.com	Flipkart, one of India's leading e-commerce platforms, offers a variety of organic products across multiple categories. These include organic foods, personal care items, and household products. Its logistics and delivery network ensure efficient distribution across the country (Flipkart, 2022).
3	BigBasket (A TATA enterprise) www.bigbasket.com	BigBasket, one of India's leading online grocery platforms, has successfully capitalized on the growing demand for organic products. The company offers a wide range of organic fruits, vegetables, dairy products, and pantry staples, sourced from certified organic farms (BigBasket, 2024).
Dedicated Organic Marketplaces		
4	Live Organic www.liveorganic.co.in	Live Organic is an Indian online marketplace dedicated to offering a wide range of organic and sustainable food products primarily to customers of Delhi-NCR region including Gurgaon and Noida. The platform provides customers with access to high-quality, certified organic items, including fruits, vegetables, spices, dairy products, cold-pressed oils, nuts, and various grains (Live Organic, 2024).
5	Organic Tattva www.organictattva.com	Organic Tattva offers 100% certified organic products in collaboration with around 9,000 farmers across various Indian states, employing sustainable farming practices that ensure their products natural, pesticide-free and traceable to specific regions (Organic Tattva, 2024).
6	Patanjali Ayurved www.patanjaliayurved.net	Patanjali Ayurved Limited, established in 2006, is dedicated to producing high-quality herbomineral preparations and marketing of several organic products with strict adherence to Good Manufacturing Practices and Total Quality Management (Patanjali Ayurved, 2024).
7	Farm2Kitchen www.farmstokitchen.com	Known for its farm-to-table approach, Farm2Kitchen, an online platform is dedicated to delivering variety of fresh organic products comprising vegetables, fruits, eggs and meats directly from local farms to consumers' homes with emphasis on sustainable farming practices and transparency ensuring high standards of quality and freshness (Farm to Kitchen, 2024).
8	24 Mantra Organic www.sresta.com	Sresta Natural Bioproducts Pvt. Ltd. is India's leading organic food company which produces and supplies a wide range of organic food products comprising organic grains, pulses, spices, oils, sugar, snacks etc. under the brand name "24 Mantra Organic". The company has strong presence in the domestic and global organic food market.
9	Organic India www.organicindia.com	Organic India is a well-known brand that specializes in organic health and wellness products. The company has embraced e-commerce to reach a wider audience, offering its products on its website and through online marketplaces like Amazon and Flipkart. Organic India's commitment to quality and sustainability has helped it build a loyal customer base (Sharma & Singh, 2020). Their key products include Tulsi-based teas, Moringa powder, and herbal supplements like Ashwagandha and Turmeric, prepared using certified organic ingredients through Ayurvedic traditions, which aimed at promoting holistic health (Organic India, 2024).

10	Farmizen www.farmizen.com	Farmizen is an innovative online platform that connects consumers directly with organic farmers. The platform allows consumers to lease a small plot of land and grow their own organic produce, which is then delivered to their doorstep. This unique approach not only provides consumers with fresh, organic produce but also supports local farmers (Pandey & Singh, 2019).
11	I Say Organic www.isayorganic.com	I Say Organic is one of e-commerce platform in India, exclusively dedicated to offering wide range of fresh, certified organic produce, groceries, and other organic goods. The platform is playing a significant role in connecting consumers with organic farmers, ensuring that all products are ethically sourced and free from harmful chemicals (I Say Organic. (2024).

In addition to those mentioned above, several e-commerce platform and brands name of organic products exists in the country, which have joined hands with government supported platforms in marketing of organic production. Accordingly, they collectively forms and describes the e-commerce landscape of organic products in India at present.

8. Outcome and Impact of the Government-Supported E-commerce Platforms

The impact of the government-supported e-commerce platforms on organic product in India could be categorized primarily in three parts, namely (a) impact on the market of organic products; (b) impact on the livelihood of the farmers engaged in organic farming; and (c) impact on the consumers of organic products.

(a) Impact of the Government-Supported E-commerce Platforms on Market of Organic Products: In connection with the market, the impact of the government supported e-commerce platform could be listed but not limited to those furnished here-below:-

- i. **Increased Visibility and Reach:** The Government-supported e-commerce platforms have increased the visibility and reach of organic products. By providing a centralized marketplace, these platforms make it easier for consumers to find and purchase organic products (IBEF, 2021).
- ii. **Enhanced Trust and Credibility:** The certification schemes and quality standards set by the government enhances the trust and credibility of organic products. The consumers are more likely to purchase certified organic products, knowing they meet stringent quality standards (NABARD, 2020).
- iii. **Support for Small Farmers:** The e-commerce platforms supported by the government provide small farmers with access to larger markets and better prices. This support helps small farmers increase their income and invest in sustainable farming practices (FICCI, 2020).

(b) Impact of the Government-Supported E-commerce Platforms on the Livelihood of Farmers of Organic Products: The government-supported e-commerce platforms provide several benefits to organic farmers. It's impact on the livelihood of farmers engaged in the organic farming could be listed but not limited to those furnished here-below:-

- i. **Enhanced & Improved Access to Market:** The e-commerce platforms have significantly enhanced access to market for organic farmers enabling them to reach a wider customer base (Ministry of Agriculture, 2021). The platforms like eNAM and TRIFED connect farmers directly with consumers and institutional buyers, reducing the role of intermediaries and ensuring better prices (Ministry of Agriculture, 2022). The farmers could realize better price on reduced dependency on intermediaries (Reddy & Rao, 2019).
- ii. **Enabled Income Stability:** The participation in e-commerce has led to more stable incomes for organic farmers due to direct access to markets and better pricing (Kumar et al., 2021). The government support through platforms like e-NAM has provided a reliable sales channel, reducing income volatility (Ministry of Agriculture, 2022).
- iii. **Financial Incentives and Support:** The government initiatives provide financial support and incentives for organic farming, encouraging farmers to adopt sustainable practices (Kumar et al., 2021).
- iv. **Training and Capacity Building:** The training programs and digital literacy initiatives have empowered farmers to utilize e-commerce platforms effectively (Ministry of Commerce and Industry, 2021). The programs aimed at enhancing digital literacy and marketing skills among farmers help them leverage e-commerce platforms effectively (Ministry of Agriculture, 2021). Consequently, the farmers have gained skills in online marketing, product listing and customer engagement (Reddy & Rao, 2019).

(c) Impact of the Government-Supported E-commerce Platforms on the Customers of Organic Products: The government supported e-commerce platform have benefited the customer of organic products in several ways and impacted changes in their behavior and satisfaction levels as follows:-

- i. **Access to Quality Organic Products:** The government-supported platforms ensure that consumers have access to certified organic products, enhancing trust and quality assurance (Ministry of Commerce and Industry, 2021).
- ii. **Competitive Pricing:** Direct transactions between farmers and consumers often result in more competitive pricing for organic products (Reddy & Rao, 2019).
- iii. **Increased Awareness:** These platforms also play a role in educating consumers about the benefits of organic products, promoting healthier and more sustainable consumption patterns (TRIFED, 2022).
- iv. **Impact on the Purchasing Behavior:** The consumers are increasingly turning to e-commerce platforms for purchasing organic products due to convenience, variety, and availability (Kumar & Singh, 2021). The growing awareness of health benefits associated with organic products has driven demand for organic products (Ministry of Agriculture, 2021).
- v. **Impact on the Customer Satisfaction Levels:** The user-friendly interfaces, secure payment options, and reliable delivery services contribute to positive shopping experiences (Ministry of Commerce and Industry, 2021). The surveys indicate high levels of consumer satisfaction with the quality and authenticity of organic products purchased online (Reddy & Rao, 2019).

The government-supported e-commerce platforms made positive impact on both organic farmers and consumers. On one hand, the farmers are getting benefited from enhanced market access, stable incomes and capacity-building initiatives. On other hand, the consumers have shown increased interest in purchasing organic products online, driven by convenience and quality assurance. However, the success of government-supported e-commerce platforms on market reach can be measured from the number of registered users, geographic coverage and the volume of transactions. Whereas, based on market reach, sales and user satisfaction, the government-supported e-commerce platforms is evaluated on these parameters as furnished in the Table-4 placed here-below.

Table -4: Evaluation of the Government-Supported E-commerce Platforms

e-commerce platform	Review under three major determinants and parameters		
	Market Reach	Sales	User Satisfaction
1. e-NAM	e-NAM has expanded to over 1,000 markets across India, integrating farmers from various regions (Ministry of Agriculture, 2022).	Reports indicate a steady increase in the transaction volume of organic products (Ministry of Agriculture, 2022).	Farmers have reported high satisfaction levels due to transparent pricing and ease of access (Reddy & Rao, 2019).
2. GeM	GeM has facilitated the procurement of organic products by government institutions, increasing market access for organic producers (Ministry of Commerce and Industry, 2021).	The platform has seen a significant rise in the procurement of organic products by various government bodies (Ministry of Commerce and Industry, 2021).	Government purchasers have expressed satisfaction with the platform's efficiency and product range (Kumar et al., 2021).
3. TRIFED	TRIFED's online platform has reached numerous tribal communities, promoting their organic products (TRIFED, 2022).	TRIFED's platform has recorded substantial sales growth, benefiting tribal producers (TRIFED, 2022).	Tribal producers have highlighted its significant role in improving their livelihoods through better market access (TRIFED, 2022).

The evaluation of government-supported e-commerce platforms reveals significant successes in terms of market reach, sales growth and user satisfaction. These platforms have provided substantial benefits to both organic farmers and consumers, enhancing market access, ensuring better pricing and promoting sustainable agricultural practices. However, a comparative analysis between government supported and non-government supported e-commerce platform reveals a wider perspective on performance and impact as depicted in the Table-5 placed here-below.

Table-5: Comparative Analysis of the Government-Supported/Not supported E-commerce Platforms

Parameters	Comparative Analysis between	
	Government-supported platforms	Non-government supported platforms

1. Market Reach	i. Significant market reach, especially in rural areas, due to government backing and extensive network (Ministry of Agriculture, 2022). ii. Focus on integrating small-scale farmers and promoting regional products (Ministry of Commerce and Industry, 2021).	i. Wider market reach due to robust infrastructure and extensive logistics networks. ii. Strong brand recognition and consumer trust, leading to higher traffic and sales (Kumar et al., 2021).
2. Sales Performance	i. Moderate sales growth with a focus on transparency and fair pricing for farmers (Reddy & Rao, 2019). ii. Often face challenges related to scale and efficiency compared to private platforms.	i. High sales volume and rapid growth due to aggressive marketing strategies and customer-centric policies (Kumar et al., 2021). ii. Extensive product range and competitive pricing attract a larger consumer base.
3. User Satisfaction	i. High satisfaction among farmers due to direct market access and reduced intermediaries (Ministry of Agriculture, 2022). ii. Consumers appreciate the authenticity and quality assurance of organic products but may face issues with user interface and delivery times.	i. High consumer satisfaction due to seamless shopping experience, reliable delivery, and diverse payment options. ii. Farmers face challenges related to stringent quality checks and competitive pricing pressures.
4. Impact on Organic Farmers and Consumers	i. Positive impact on farmers' livelihoods through better market access and income stability (Reddy & Rao, 2019). ii. Consumers benefit from access to certified organic products, promoting healthier choices (Ministry of Commerce and Industry, 2021).	i. Significant income opportunities for farmers who meet quality standards and can scale production (Kumar et al., 2021). ii. Consumers enjoy the convenience and variety of organic products available online.
5. Best Practices	i. Robust logistics and supply chain management ensure timely delivery and product quality. ii. Advanced technology and data analytics provide personalized shopping experiences and efficient inventory management. iii. Comprehensive customer support and return policies enhance consumer trust and satisfaction.	i. Emphasis on transparency and fair trade practices ensures equitable benefits for farmers. ii. Initiatives focused on regional and small-scale farmers promote inclusivity and sustainable agriculture (Ministry of Agriculture, 2022).
6. Areas for Improvement	i. Enhance digital infrastructure and user interface to improve accessibility and user experience (Ministry of Commerce and Industry, 2021). ii. Invest in advanced logistics and supply chain solutions to compete with private platforms in terms of efficiency and reliability. iii. Implement targeted marketing strategies to increase consumer awareness and demand for organic products.	i. Foster more inclusive policies to support small-scale and regional farmers, ensuring fair trade and pricing. ii. Enhance collaboration with government initiatives to leverage support for organic certification and quality assurance (Kumar et al., 2021).

The comparative analysis highlights the strengths and weaknesses of both government-supported and non-government supported e-commerce platforms. While private platforms excel in logistics, technology and consumer satisfaction, the government-supported platforms emphasize transparency, inclusivity and support for small-scale farmers.

9. Future Potential and Opportunities

The Government of India initiatives in promotion of e-commerce platforms for organic products represents a significant shift towards sustainable agricultural practices and its marketing. The future potential of these initiatives lies in the expansion of market accessibility for small and medium-scale organic farmers, who often face challenges in reaching a broader audience. The e-commerce platforms can help the farmers to bypass traditional supply chain limitations thereby increasing their market reach and profitability. Additionally, the government's support for the e-commerce platforms could stimulate innovation in organic farming practices by encouraging the use of advanced technologies for precision farming and transparency of supply chain system. These advancements could lead to increased productivity, better resource management, and ultimately, more sustainable agricultural practices in India. Moreover, the integration of digital payment systems and logistics services within these platforms can further enhance the efficiency of organic product distribution. This not only streamlines the supply chain but also ensures traceability and authenticity, which are crucial for building consumer trust in organic products. As consumer demand for organic products grows, the e-commerce platforms can also serve as a model for other emerging markets, fostering global trade opportunities for Indian organic products.

The future potential and opportunities relating to organic products and its marketing through government supported e-commerce platform could be listed but not limited to the followings:-

(a) Government Initiatives: The Government of India has been promoting organic farming through various schemes, policies and initiatives aimed to increase the area under organic cultivation and provide support for certification and marketing. The continued government support for organic agriculture through schemes for financial incentives, training, certification, development of supply chain infrastructure and support for marketing could enhance participation of farmers in organic farming and production. It will help increase the supply of organic products and boost consumer confidence in the market (Gupta & Singh, 2020).

(b) Technological Advancements: The advancements in technology, such as blockchain, can enhance transparency and traceability in the organic supply chain. The e-commerce platforms are increasingly leveraging technology to provide detailed information about the sourcing and quality of products (PwC, 2021). The technological advancements in e-commerce, supply chain management and logistics are likely to improve the efficiency and accessibility of online markets for organic products (Yadav & Srivastava, 2019).

(c) Expansion into New Categories: While the organic food segment is well-established, there is significant potential for growth in other categories such as personal care, textiles, and home care products. The e-commerce platforms are likely to expand their offerings to cater to these emerging demands (Euromonitor, 2021).

(d) Export Opportunities: India has the potential to become a major exporter of organic products, given its diverse agro-climatic conditions and rich biodiversity. Expanding into international markets can provide Indian organic producers with new growth opportunities and contribute to the country's economic development (Sharma & Singh, 2020).

(e) Increasing Consumer Awareness: The future of online markets for organic products in India looks promising subject to provision for increasing consumer awareness. As more consumers become aware of the benefits of organic products, the demand for these goods is also expected to grow further (Sharma et al., 2020).

10. Identification of Challenges and Limitations Faced by Government-Supported Platforms

The government-supported e-commerce platforms for organic products faces several challenges and limitations hindering their effectiveness and growth. The challenges and limitations promises of limited digital literacy, infrastructure constraints, quality control issues, logistical challenges, market competition, awareness and trust deficits, and financial constraints. In addition to different challenges identified, the recommendation for overcoming such challenges and limitations are listed, but not limited to those furnished in the Table-6 placed here-below.

Table-6: Challenges and Limitations faced by the Government-Supported Platforms & Recommendations

Category	Challenges	Recommendations
Technical Challenges		

1. Digital Infrastructure	1. Rural and remote areas often suffer from unreliable internet access, making it difficult for farmers to engage consistently with e-commerce platforms. 2. Limited internet connectivity and low bandwidth hinder the efficient functioning of e-commerce platforms. 3. These constraints restrict the functionality and reach of online markets for organic products. 4. Inadequate digital infrastructure in rural areas limits access to e-commerce platforms for many organic farmers (Ministry of Electronics and Information Technology, 2019).	Increase funding for digital infrastructure development in rural areas to improve internet connectivity and access to e-commerce platforms (Ministry of Electronics and Information Technology, 2019).
2. Digital Literacy	1. One of the primary challenges is the limited digital literacy among farmers, particularly in rural areas. 2. Digital literacy is essential for farmers to list their products, manage orders, and communicate with customers, but the gap in skills often leads to underutilization of these platforms. 3. A significant portion of the farmer population, particularly in rural areas, lacks the digital literacy required to navigate and utilize e-commerce platforms effectively. 4. This gap in digital skills limits the participation of these farmers in the online marketplace and access a broader consumer base.	Expand training programs to enhance the digital literacy and e-commerce capabilities of organic farmers, ensuring they can effectively utilize these platforms (Ministry of Agriculture, 2021).
3. Platform Features	The user interface and functionality of e-commerce platforms are often not user-friendly for both farmers and consumers (Ministry of Commerce and Industry, 2021).	Enhance the platform features to make them more user-friendly and accessible for both farmers and consumers.
4. Integration with Payment Systems	Limited payment options are available for transactions thereby limiting preferences of different consumer segments.	Integrate secure and diverse payment options to facilitate smooth and reliable transactions, catering to the preferences of different consumer segments (Ministry of Commerce and Industry, 2021).
Supply Chain and Logistical Challenges		
5. Supply Chain Management & Distribution Networks	1 The organic supply chain in India is still developing, with challenges in sourcing, certification, and distribution. Ensuring the integrity of organic products from farm to table requires robust logistics and quality control mechanisms (NABARD, 2020). 2 Additionally, inadequate logistics and supply chain management often leads to delays, increased costs and inefficiencies in delivery of organic products (Ministry of Agriculture, 2021). 3 These logistical issues can deter both farmers and consumers from using e-commerce platforms for organic products.	1. Strengthen distribution networks to ensure efficient delivery of organic products. 2. Develop robust supply chain logistics and cold storage facilities to ensure the timely and safe delivery of organic products (Ministry of Agriculture, 2020).
Policy & Regulatory Challenges		
6. Regulatory Compliance	Complex regulatory requirements for organic certification create barriers for	Simplify regulatory requirements for organic certification to reduce barriers

	farmers (Ministry of Commerce and Industry, 2021).	for organic farmers (Ministry of Commerce and Industry, 2021).
7. Policy Implementation	Inconsistent enforcement of regulations leads to confusion and non-compliance. Besides, lack of coordination between different government agencies creates obstacles for seamless operations.	Improve coordination between government agencies to facilitate seamless policy implementation.
8. Policy Gaps	- Existing policies do not adequately address the specific needs of organic farmers using e-commerce platforms (Ministry of Commerce and Industry, 2021). - Gaps between policy formulation and implementation result in ineffective support for e-commerce platforms.	Develop integrated policies that align the interests of various stakeholders in the organic product supply chain, promoting collaboration and efficiency.
Market-Related Challenges		
9. Market Awareness	- Limited consumer awareness about the benefits of organic products reduces market demand. - Insufficient marketing efforts by e-commerce platforms to promote organic products.	Increase consumer awareness through targeted marketing campaigns promoting organic products.
10. Price Sensitivity	Organic products tend to be more expensive than conventional alternatives due to higher production costs and certification fees. This price premium can be a barrier for wider adoption among price-sensitive Indian consumers (Singh, 2020).	Implement pricing strategies to make organic products more competitive and stable.
11. Market Competition	The government-supported platforms face intense competition from established private e-commerce giants, which often offer more attractive terms and greater convenience to consumers and farmers. This competition can overshadow the visibility and appeal of government platforms.	
12. Consumer Trust and Product Authenticity	- Ensuring the consistent quality and proper certification of organic products across diverse regions is a significant challenge (Ministry of Commerce and Industry, 2021). - Building awareness and trust among consumers regarding the benefits and authenticity of organic products available on government-supported platforms is challenging (ASSOCHAM, 2021). - There is lack of awareness among consumers about the benefits of organic products and the reliability of government-supported e-commerce platforms (Ministry of Agriculture, 2021).	- Educate consumers about the certification and authenticity of organic products to build trust and drive demand (Ministry of Agriculture, 2021). - Establishing robust quality control mechanisms and certification processes can ensure the authenticity and consistency of organic products. This will enhance consumer trust and marketability (Ministry of Commerce and Industry, 2021).
13. Collaboration and Partnerships	There is lack of collaboration between the government agencies, e-commerce platforms, and organic farming associations required for concerted market penetration	Foster collaboration between government agencies, e-commerce platforms, and organic farming associations to create a cohesive ecosystem that supports market penetration (Ministry of Commerce and Industry, 2021).

14. Strategies for Better Market Penetration	While awareness about organic products is growing, it remains limited to urban areas and higher-income groups. There is a need for greater outreach to expand the market to rural and semi-urban regions (FICCI, 2020).	Develop strategies that focus on promoting organic products at the local and regional levels, leveraging regional e-commerce platforms to cater to specific market needs (Ministry of Agriculture, 2021).
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Addressing these challenges requires a multifaceted approach that includes enhancing digital literacy, improving infrastructure, strengthening quality control, optimizing logistics, forming strategic partnerships, launching consumer awareness campaigns and increasing funding and support under different schemes relating to organic farming and meeting of products. The subsidies and incentives for organic farmers to adopt e-commerce platforms can ensure them to participate effectively. By implementing these recommendations, the government can significantly improve the effectiveness and scalability of its e-commerce platforms, ultimately promoting the growth of the organic product market in India.

11. Conclusion

The e-commerce market for organic products in India is at a nascent stage but growing rapidly. Driven by increasing consumer awareness and demand for health and sustainability, several e-commerce platforms have emerged to cater to this niche. While challenges such as supply chain issues, high costs of production and limited awareness persist, the future looks promising with supportive government policies and technological advancements. The continued growth of this market will depend on addressing these challenges and leveraging opportunities to expand the reach and availability of organic products.

The government-supported e-commerce platforms and initiatives have not only played a crucial role but significantly facilitated the marketing of organic products in India. The policies have provided essential infrastructure, financial support and training hereby facilitating market access and promoting sustainable agricultural practices. These platforms have demonstrated success in terms of market reach, sales and user satisfaction thereby providing substantial benefits to both organic farmers and consumers. It has positively impacted the livelihood of organic farmers by providing better market access and income stability.

The consumers on other hand have shown favorable behavior and satisfaction on online purchases through these platforms which provided trust and credibility of organic products. While these platforms have made significant progress, there is room for improvement in terms of policies and regulations gaps, infrastructure, logistics, technological usages and market strategies.

Besides, government-supported e-commerce platforms face challenges in competing with private platforms in terms of scale, efficiency, and user experience. Addressing these challenges requires enhanced digital infrastructure, improved logistical support, streamlined regulations, and effective market development strategies. The continued efforts to address existing challenges will enhance the effectiveness of e-commerce platforms while further improvement will enhance their effectiveness and contribute to the growth of organic products market and enhance support to the livelihoods of organic farmers in India.

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