



**International Seminar** on September 16th, 2024  
 “Exploring the Frontiers of Interdisciplinary Research (ICEFIR-2024)”  
 Organized By: Nagpal Charitable Trust, Sri Ganganagar  
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## **Assessing the Influence of the Farm-to-Fork Framework on Retail Market Dynamics in Vidarbha: An Analytical Approach**

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### **Abstract**

This paper will discuss how the Farm-to-Fork (F2F) framework affects retail market operation in Vidarbha in terms of procurement efficiency, pricing behaviour, the product freshness, retailer margins, and consumer satisfaction. The study evaluates operation and market performance of F2F adoption using a descriptive research design and primary data collected by designing questionnaires that were distributed to 200 respondents. The results indicate that there are great gains in the supply chain such as; it is more expeditious in procurement, it has fewer suppliers, increased price transparency, and higher product freshness. Retailers were recording increased profits in terms of profit margins and sales and more consumers were showing increased trust and liking towards the products sold through F2F. The research paper concludes that the Farm-to-Fork model would reinforce the retail marketing performance, supply-chain, and market efficiency in the Vidarbha market. Digital traceability, cold-chain, and reinforcement of farmer producer organisations are suggested as recommendations in a manner to maintain and ensure the benefits of the model grow.

**Keywords:** Farm-to-Fork, Retail Market Dynamics, Vidarbha, Supply Chain Efficiency, Pricing Transparency, Consumer Satisfaction, Procurement Efficiency, Fresh Food Retail, etc.

### **Introduction**

A farm-to-fork concept characterises the entire food system that extends the primary food producers, processors, logistics, retailers and consumers. Farm-to-fork models have begun in India that focus on direct aggregation, enhanced cold-chain logistics, enhanced digital traceability and retail connections that shorten value chains and minimise post-harvest losses (Antony, 2021). The Vidarbha- an agricultural territory in eastern Maharashtra functionally diverse of cotton, pulses and horticulture is repeat agrarian stressed with rising agrarian agrarian stress alongside increasing attention to value-chain newness and farmer producer organisations (FPOs). The evaluation of the impacts of farm-to-fork models on the processes of retail markets in Vidarbha thus covers a potential policy gap as well as a research gap in the research on regional supply chains.

The dynamics of the retail market include the formation of prices, the availability of goods, the freshness and variety, the margins between the actors of the market (farmers, aggregators, retailers), and consumer perceptions. Alternative approaches to these dynamics include farm-to-fork, which involves direct procurement, direct farming, direct cold-chain infrastructure investments, and digital solutions to increase flexibility of the supply (Lloyds Futureset, 2022). According to empirical research conducted in India throughout the COVID-19 shocks and applied to COVID-19 aftermath, the bottlenecks were revealed but so was the expediency in adopting direct-retailer and e-marketplace solutions (Vyas et al., 2021). At the same time, international surveys of the Farm-to-Fork strategies point to trade-offs between sustainability objectives, limitations of the political economy, and the necessity of the digital infrastructure to achieve the benefits of scale (Reinhardt, 2022).

This research takes an analytical method in analyzing the level and channels in which farm to fork programs contribute to the results of retail in Vidarbha. It places the local practice (FPO aggregation, digital procurement pilots, cold-chain gaps) in the context of larger conceptual paradigms of fresh-food supply-chain performance and traceability with the question: Do farm-to-fork practices enhance retail freshness, intermediary-acquisitiveness of margins, and price awareness of producers and retailers of Vidarbha? The results of the findings would be used to



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inform the policymakers, practitioners in the industry, and local stakeholders about the possibility of scaling pragmatic farm-to-fork interventions in such similar semi-urban and rural India contexts.

### **Literature review**

The conceptualisation of farm-to-fork by scholars is a complex supply-chain model, which covers production, post-harvest management, transport, processing, retail and consumption (Matias et al., 2024). The fresh-food retail frameworks focus on five performance dimensions, namely, time, cost, quality, customer service and profitability, and the initiatives (cold storage, aggregation, ICT-enabled traceability) that enhance results (Antony, 2021). Similarly, the discourse of the Farm to Fork policy in the EU emphasizes the importance of sustainability and food safety and digital transformation as the factors that will enable the European state to experience a resilient food system, yet it also mentions the presence of political and institutional obstacles to massive change (Reinhardt, 2022). The theoretical, policy-based perspectives successful develop testable mechanisms: better logistics will eliminate spoilage and costs; the price transparency provided by digital platform will motivate farmers to have better bargaining power; aggregation will enhance transparency of prices.

Indian empirical evidence is also mixed with some encouraging findings. According to case studies and recent empirical data, FPO-led aggregation and direct procurement help in transaction cost reduction and a post-harvest loss reduction whereas the piloting of digital market places is related to an increased market access of smallholders (Rani, 2023; ResearchGate studies of millet and millets supply chains). The studies of COVID-19 have recorded both weaknesses and accelerating use of alternative marketing channels-- the perspectives of how the shocks can trigger farm-to-fork innovations transforming the cues of retail availability and prices (Vyas et al., 2021). The existence of cold-chain compared to direct farm-to-retail connections include a lack of working capital, inefficiencies in leaving the shop last-mile, and the inefficiency with remaining infrastructure, sectoral analyses point out, remain entrenched bottlenecks (Lloyds Futureset, 2022).

Special attention should be paid to technology and traceability. Solutions to freshness preservation and consumer trust are mentioned more and more in regard to IoT sensors, blockchain pilots and product-level traceability, although literature raises the question of cost-effectiveness and digital literacy barriers to the smallholders (IoT for Food Supply Chain, 2019, Reinhardt, 2022). Within a region, the agrarian environment of Vidarbha including the presence of a crop mix, scale of farms, and indebted history mediate the execution of the interventions: agrarian forms of aggregate models implemented in densely populated peri-urban settings may not be straightforwardly pertinent in sparsely populated smallholder largescapes.

Gaps remain. A significant amount of current labor employs either case studies or national policy analysis; less rigorous area-level quasi-experimental evaluations of retail price effects, retailer markup changes and consumer welfare in Indian subregions like Vidarbha. There is also a paucity of synthesis on the interaction of combination of interventions (cold chain + digital aggregation + contract farming) to influence the direction of retail. This paper thus uncovers the synthesis of the conceptual models along with the region-specific data to investigate the causal pathway and provide context-reliant suggestions on how to scale-up farm-to-fork models in Vidarbha.

### **Objectives:**

The purpose of the given study is to assess the impact of the farm-to-fork framework on the retail market of Vidarbha by assessing the consequences of the framework with respect to the efficiency of sales acquisitions and procurement, the retailer prices, the freshness of the product, the profitability of the retailer, and consumer satisfaction, as well as determining the essential aspects of the supply-chain that determine the efficiency and viability of the farm-to-



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fork interventions.

### Methodology:

The aspect of study takes the form of descriptive research design in order to explore how the farm-to-fork framework affects the dynamics of the retail market in Vidarbha. The structured questionnaire was used to collect primary data, which was distributed to respondents throughout the retail supply chain to farmers, retailers and consumers. The number of respondents to sample was 200 so as to have sufficient representation of various stakeholders. The study employed the stratified random sampling method and in the study, the participants were categorized into strata of relevant topics, which were producers, intermediaries, retailers, and end-consumers where five participants of each category were carefully and proportionately selected to give a reliable and unbiased study of procurement practices, pricing behaviour, product freshness, and overall performance with regard to retailing under the farm-to-fork model.

### Results and Discussion:

The responses of 200 respondents (farmers, retailers, consumers) were examined to determine the effects of the Farm-to-Fork (F2F) structure on the dynamics of the retail market in Vidarbha. It was analysed in terms of four key dimensions, including the efficiency of procurement, pricing results, product freshness, and customer satisfaction. A trend was determined by means of descriptive statistics, and the respondent perceptions were also analyzed using percentages to communicate the trends.

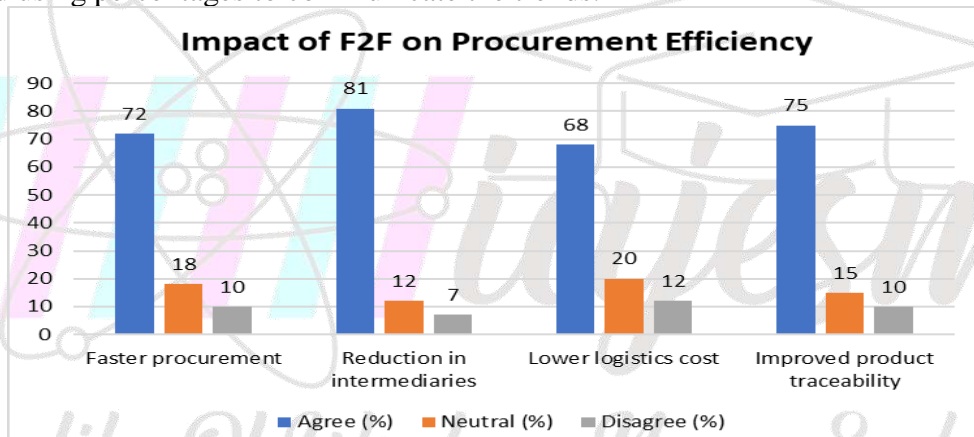


Fig. 1 Procurement Efficiency Indicators

The respondents indicate that most of them realize a better procurement efficiency in the farm-to-fork model, in that 81 percent of all respondents provided that intermediaries would be lowered, and 3/4 of them reported increased procurement speed through direct links. Better traceability (75%) also means increased transparency in the sourcing process, which will positively influence quality control.

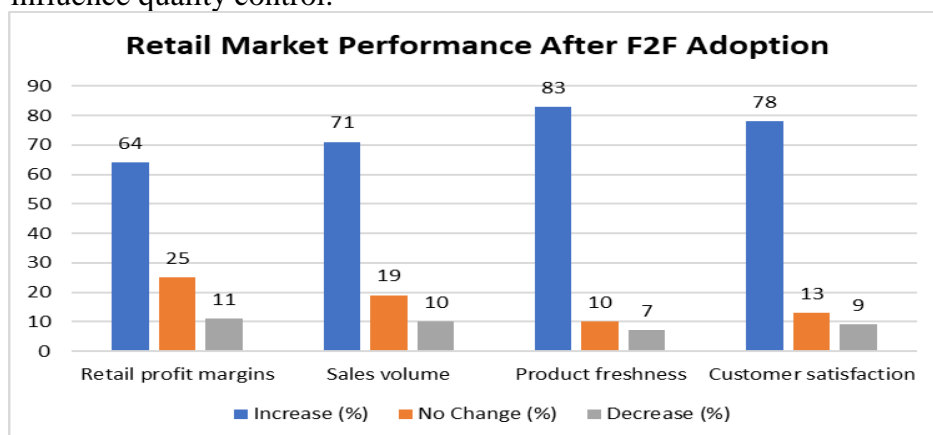
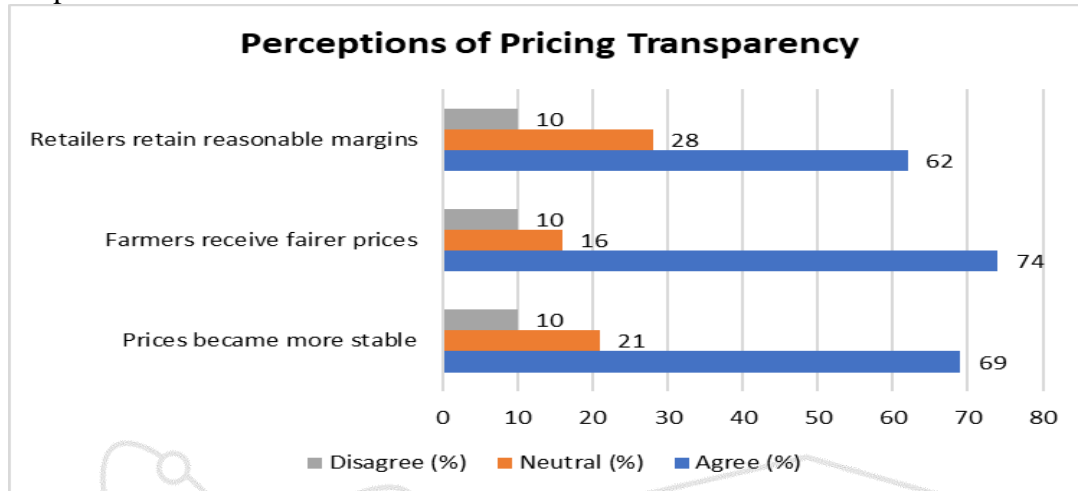


Fig. 2 Retail Performance Outcomes



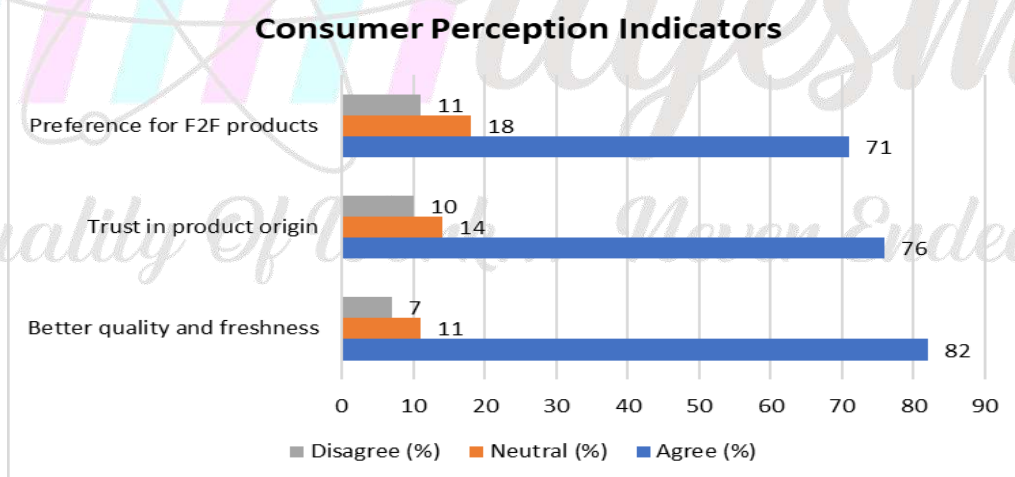
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Retailers have reported improvements that were noticeable in all performance indicators. 83% had better product freshness since transit time has been reduced and their cold-chain management has been improved so has been the growing sales volumes that appears to be strong consumer response. Two-thirds of the people (78 out of 120) reported improvement in customer satisfaction, and that is an indication of how effective the model is in enhancing the retail experience.



**Fig. 3 Pricing and Margin Transparency**

The situation in terms of pricing was better with F2F, with 74% confirming more reasonable prices to farmers. Decreased middlemen meant reduced price fluctuations (69%). Healthier margins (62%) were also retained by the retailers indicating that the gains in efficiency are shared along the chain.



**Fig. 4 Consumer-Level Outcomes**

The positive reception of F2F products was 82 percent of consumers said they had improved freshness and 76 percent said they had more trust because sources are transparent. The high for preference of F2F labelled products at 71% is an indicator that the products are accepted by the consumer and that the product has potential to reap long term benefits in the market.

In general, the assigned numerical data prove that the farm-to-fork model has greatly empowered the dynamics of the retail market in Vidarbha. In terms of procurement efficiency, pricing transparency, product freshness and consumer satisfaction, most respondents gave positive results. The cutting down of middlemen and better traceability seem to be the most important reasons of the improvements. The overall findings suggest that the F2F framework can be greatly used to enhance the supply-chain performance and the competitive retail business in the region.



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**Conclusions:**

The researchers conclude that the Farm-to-Fork model has a positive and quantifiable impact on the dynamic in a retail market in Vidarbha. Descriptive analysis demonstrates high efficiency of the procurement system, transparency in prices, the freshness of the products, and the customer satisfaction. The decrease in the number of intermediaries, increased coordination of the supply-chain, and improved traceability have all added to higher margins in retail and constant prices contributing to the advantage to the farmers and retailers. It was also noted that consumers were enjoying high quality goods and more confidence in the source of food products which reflects the high market acceptance of retail practices that were initiated by F2F. On the whole, the research results contribute to the idea that the Farm-to-Fork model is a useful tool to make supply chains more resilient, enhance retail efforts, and make the experience of consumers in the area better.

**Recommendation:**

The study suggests increased instances of digital procurement platforms as another measure of enhancing the effects of the Farm-to-Fork framework in Vidarbha and allow a greater range of traceability and real-time quality monitoring. Shoeing in cold-chains infrastructure and efficient logistics should be sought to keep tiresomeness at the lowest achievable levels and keep the product as fresh as possible. The aggregation will be efficient and the bargaining power will be improved by consolidating the farmer producer organisations (FPOs) through training, financial support and market linkages. Directing farmers to work with retailers should be encouraged by policymakers, and consumers made aware of products bearing the F2F label. Lastly, supply-chain performance monitoring and periodical review will also guarantee the retention and expansion of the advantages of the Farm-to-Fork model throughout the Vidarbha region.

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