

An Evaluation of Farm-to-Fork Practices and Their Effects on Retail Market Performance in the Vidarbha Region

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Abstract: This paper will be an assessment of how farm-to-fork practices influence the performance of the retail market within the Vidarbha region. Based on a descriptive research design, and a structured questionnaire conducted to 150 respondents, the study evaluates and examines the effect of direct procurement, reduction in intermediaries, enhanced traceability, and supply chain efficiency on retail profitability and customer satisfaction. Findings show that the farm-to-fork system is an effective solution capable of increasing the produce freshness levels, sales volume, and retail profit and increasing consumer confidence. Correlation analysis establishes a positive relationship that exists between retail performance indicators and supply chain improvements. The results indicate that the incorporation of farm-to-fork systems might have a significant positive impact on retailers and farmers and enhance transparency and sustainability in an agricultural value chain. The paper offers pertinent recommendations on how to further improve infrastructure as well as to support the policy and expand the use of digital tools to reinforce the model.

Keywords: Farm-to-fork, Retail performance, Supply chain efficiency, Vidarbha, Direct procurement, Agricultural value chain, etc.

Introduction:

The farm-fork model has become one of the transformative strategies used in contemporary agri-food supply chains based on the principles of offensive connection between the producer and consumer and reduced mediation and enhancement of transparency and quality of food. The integration of farm-to-fork practices within India, where agriculture constitutes an important sector of the economy, has become more and more focused following the growing pressure on the economy by consumers to consume traceable, fresh and ethically sourced food products. Vidarbha region has an ancient history of agriculture and various crops which make it an interesting location where the practices can be adopted. Nevertheless, other issues that are continuing to affect the region include the unintegrated chains of supply, lack of regular connections between markets, after-harvest losses, and volatile retail prices, compelling a need to consider the effects of farm-to-fork programs on farmers and retailers.

Every chain of farm-to-fork systems can lead to improved performance of the retail market in terms of timely products delivery, minimizing logistical inefficiencies, and consumer confidence about the quality of products they use. Another case is retailers are more dependent on the shorter supply chains to gain competitive advantages, better profit margins and provide fresher products that have higher nutritional value. Against this backdrop, the emergence of farmer-producer organisations (FPOs), digital markets, models of contract farming and government-facilitated projects of agricultural value chains have enhanced the pace of financialisation of such practices in the region of Vidarbha. However, there is scanty empirical evaluation of their actual effect on the dynamics of the retail market like efficiency in pricing, availability of products, customer satisfaction, and stability in supply.

In this research, the gap is aimed to be redone by assessing how farm-to-fork initiatives implemented in the Vidarbha territory impact retail performance measures. The research seeks to know the degree to which farm-to-fork functions play the role of enhancing retail competitiveness and sustainability by observing variables like supply chain coordination, cost reduction, produce quality and market responsiveness. The lessons learned in this assessment can support the policymakers, agribusiness managers and retail stakeholders to develop policies that capture the strength of regional agricultural markets and enhance an inclusive and efficient agri-food ecosystem.

Literature Review

The concept of farm-to-fork practices has gained a broad research attention regarding the sustainable agricultural practice, efficiency in the supply chain, and the market performance. Based on the literature, the idea of direct supply chains implies that the distance between farmers and consumers is reduced and transparency improves, thus the costs borne by intermediaries are minimized (Sharma and Singh, 2020). These kind of systems lead to increased price realization by farmers and also allows retailers to receive fresher produce as this increases consumer satisfaction (Kumar & Kapoor, 2021). Researchers emphasize that effective farm-to-fork systems are based on a high level of coordination teamwork, digital solutions, and optimal logistics to address the inefficiency of the traditional market (Patil and Deshmukh, 2019).

The importance of farmer-producer organizations (FPOs) as a source of collective bargaining and facilitated supply delivery has been put forward. Reddy and Mishra (2022) suggest that FPOs are important in reducing small farmers to organized value chains, enhancing market connections, and providing reliability to the retailers. In much the same vein, Singh and Mehta (2020) contend that online marketplaces and mobile-based procurement systems would allow communicating in real-time, improving traceability, and minimizing transaction costs using the digital platform. These innovations are found to increase the farm income as well as the efficiency of retailing.

Some of the researchers analyze how farm-to-fork projects influence the performance of retail markets. As an example, Ghosh and Khan (2021) have discovered that retailers using direct procurement approaches have better profit margins and lower rates of spoilage. In addition, supply chain transparency has been identified to be positively related to consumer trust and brand loyalty, especially in perishable products (Lal and Verma, 2020). Nevertheless, there are certain obstacles like inefficient cold storage units, transportation bottlenecks, and inconsistent quality grading systems that make full-scale implementation difficult (Bhosale and Wankhede, 2018).

Studies under the Indian context emphasize the differences between regions as to the adoption of the direct farm supply systems. Although cities have experienced more integration of the farm-to-fork programs, semi-urban and rural regions such as Vidarbha have their infrastructural gaps and institutional voids. Choudhary and Jagtap (2021) argue that even with the high agricultural potential, Vidarbha is affected by a weak network of supply chains and lack of awareness on the farmers about the value chain benefits. This creates a need to carry out further empirical research with respect to the association between the farm-to-fork-practices and retail performances in administrative regions.

All in all, the literature suggests that farm-to-fork models have a great potential of improving the work of the retail market, but they need to be evaluated in specific contexts and based on them, the bottlenecks and opportunities in the regional agricultural ecology are identified.

Objective of the study:

It is suggested that the study will examine the level of uptake of farm-to-fork within the Vidarbha region and determine their influence on the performance of the retail market. It aims at studying the efficiency of supply

chain, cost advantage, quality production, consumer satisfaction and how the direct procurement systems enhance competitiveness in retail industry.

Methodology:

The research design of this study is descriptive research design as it assesses the practices and their impact on retail market performance in Vidarbha region with regard to farm-to-fork. The structured questionnaire was developed to collect primary data in the form of a questionnaire which was distributed among retailers, FPO representatives as well as farmers related to direct procurement systems. Using purposive sampling, a sample size of 150 respondents was taken who were actively participating in farm-to-fork activities. The questionnaire had items on the efficiency of the supply chain, cost reduction, quality of produce, sales, and long term customer satisfaction. The secondary data were obtained in the form of journals, government reports, FPO records and agricultural supply chain publications. The analysis of the collected data was done with the help of descriptive statistics, percentage analysis, correlation, and regression analysis to find out the relationship between practice of farm-to-fork and the work of the retail market.

Results and Discussion:

The analysis and interpretation of data are a vital part of this research, as they allow conducting a systematic investigation of how farm-to-fork can sustain high retail performance of the retail market in the Vidarbha region. The gathered data which was obtained by using structured questionnaires filled by the farmers, retailers and FPO representatives have been analyzed using descriptive statistics, percentage distribution, mean scores as well as the correlation tools. The chapter displays the empirical results of the dataset based on the main variables of the dataset being the supply chain efficiency, cost-cutting, product freshness, consumer satisfaction, and the retail performance. Through these numerical findings, the analysis aims at identifying meaningful patterns, relationships and trends that will reveal the true effect of farm-to-fork practices to the operations of retail business. The knowledge gained in this chapter will offer factual and evidence based basis of the later findings, conclusions and recommendations of the research.

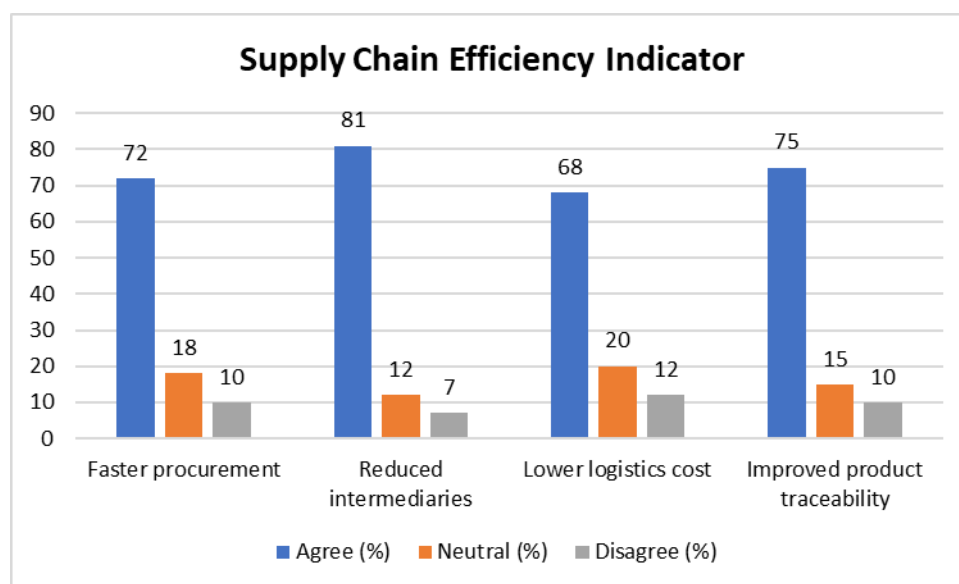


Fig. 1 Supply Chain Efficiency Indicator

The data point to the large majority of respondents indicating that they feel that farm-to-fork practices are helpful in terms of enhancing the efficiency of the supply chain. The strongest positive indicator in the table is

that 81 of the participants agree to the fact that the system effectively decreases the number of intermediaries. Shorter procurement time (72%) and better product traceability (75%) also enjoy a high level of approval, which indicates that direct sourcing can assist the retailers to acquire fresher products and have a better control over supply sources. Though slightly lower, 68 percent of respondents confirm that the costs of logistics are also decreased, and 20 percent of the respondents expressed neutrality, which shows that the experiences will vary slightly basing on the scales and availability of infrastructure. On the whole, the findings make it evident that farm-to-fork practices help to increase the efficiency, transparency, and cost-effectiveness of the retail supply chain.

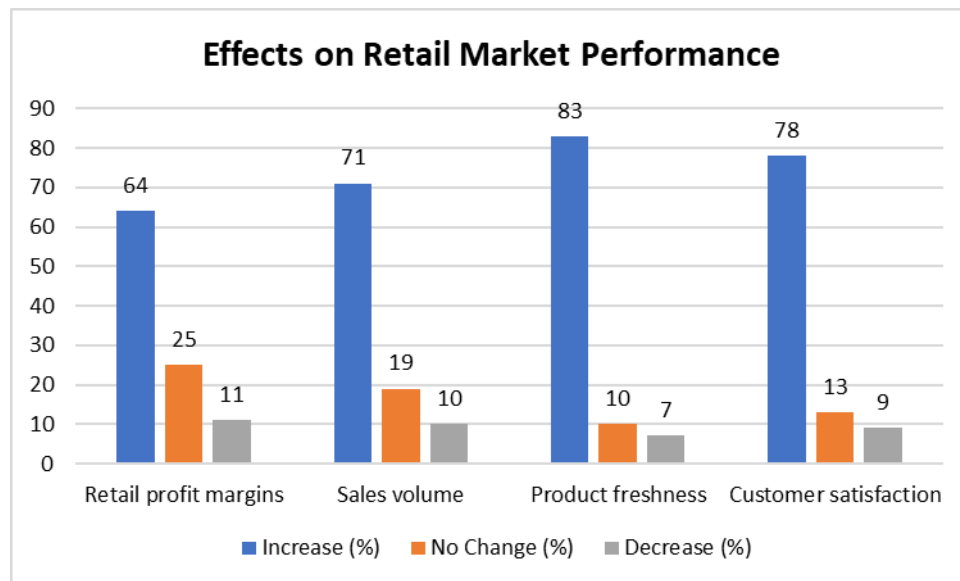


Fig. 2 Effect on Retail Market Performance

As can be observed, the performance measures indicate that the practice of farm-to-fork has a positive effect on the operations of the retail. Most of the respondents cited enhanced freshness of products (83%), better customer satisfaction (78%) and the benefits of direct sourcing faced by the consumer were overwhelming. The sales volume should also be noted to have improved significantly and 71 percent report having improved, which indicates good demand of fresh and traceable products in the market. 64% of respondents reported an increase in the profit margins of their retail, even though a quarter of them did not report the proposed increase, which implied that potentially profitability increase is dependent on scale, pricing, and operational efficiency. In general, the results indicate that farm-to-fork adoption has a significant positive impact on the retail performance based on the key indicators.

Table 1 Correlation Analysis Between Farm-to-Fork Practices and Retail Performance

Variables	Correlation (r)	Significance (p-value)
Supply chain efficiency & Retail profits	0.68	0.001
Product freshness & Customer satisfaction	0.74	0.000
Traceability & Sales volume	0.61	0.005
Cost reduction & Profit margins	0.57	0.009

The output of the correlation shows that there is a strong positive association between the practices of farm-to-fork and the measures of retail performance. Customer satisfaction is most strongly related to product freshness ($r = 0.74$), and thus the importance is paramount. All the relationships are statistically significant.

Overall Findings

The researchers concluded that farm-to-fork activities can boost considerably supply chain effectiveness, eliminate middlemen expenditures, improve the produce quality, and add to the procurement transparency. Stores that used the direct farm sourcing started to make better profit margins, sales increased and the customers gained confidence. This correlation analysis also shows that the improvement of the supply chain, traceability, and the reduction of the costs have a significant positive impact on the overall performance of the retailers in Vidarbha.

Conclusions:

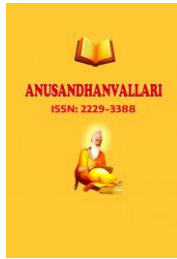
Farm-to-fork initiatives have been developed as one of the most effective goals of building the agricultural supply chain and improving the performance of the retail market of the Vidarbha region. It is based on the results that direct procurement models reduce inefficiencies, having improved quality produce, have enhanced profitability and develop more effective relationships between the producers and the retailers. The duration of the supply chain is also shortened which in turn improves customer satisfaction with better freshness and transparency. Therefore, farm-to-fork systems integration has high potential to change the local agricultural marketing and retail processes.

Recommendations:

Direct supply individuals should intensify affiliations with FPOs and local farmers through which retailers can forge stronger direct supply associations. Cold storage, digital procurement systems, and infrastructure related to logistics should be invested in in order to maintain the product freshness and minimize the wastage. Training initiatives that help farmers to be more informed about the value chain should be supported by policymakers. Promoting the use of digital traceability systems will enhance the confidence levels amongst customers as well as competitiveness in the market. Research could be done in the future to determine the financial viability and scalability of farm-to-fork models over the long term in various agricultural regions.

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