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Review Article

Implication of Open Innovation in Indian Food Processing SMEs to Increase their Annual Turnover

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Received: June 01, 2024; **Published:** June 13, 2024

Abstract

Open innovation, which combines external and internal ideas to improve technology and processes, offers considerable prospects for the Indian food processing industry, particularly small and medium-sized firms (SMEs). This paper looks at how Indian food processing SMEs might use open innovation to boost their annual turnover. It examines the unique obstacles that these SMEs confront, such as resource restrictions, technology gaps, market competitiveness, and regulatory barriers, as well as how open innovation might help to address these issues. The paper examines case studies of successful open innovation implementations in the Indian food processing sector to highlight the benefits of collaborating with research institutions, engaging with startups and technology providers, crowdsourcing ideas, and forming licensing agreements and joint ventures. It also discusses ways for fostering an innovative culture, creating collaborative networks, leveraging digital platforms, and investing in research and development. The importance of government funding and policies in supporting innovation is also emphasized. The findings imply that open innovation can greatly improve the innovation ability, operational efficiency, market reach, and competitive advantage of Indian food processing SMEs, resulting in improved yearly turnover and long-term growth.

Keywords: *Open Innovation; Food Processing Industry; SMEs in India; Yearly Turnover; Collaboration; Technology Adoption; Government Support*

Introduction

Open innovation is a concept that encourages firms to leverage both external and internal ideas to improve their technology and operations. The food processing industry, particularly small and medium-sized firms (SMEs) in India, stands to benefit tremendously from open innovation initiatives. This article investigates how Indian food processing SMEs might use open innovation to increase annual turnover.

The concept of open innovation

Chesbrough (2003) created the term "open innovation," which refers to the integration of external ideas and technologies into a company's own innovation processes. This method differs from the typical closed innovation model, in which corporations rely entirely

on internal resources. Partnerships, license agreements, collaborations with research institutes, and crowdsourcing ideas from external groups are all examples of open innovation [1].

The food processing industry of India

India's food processing industry is one of the world's largest, with a significant economic impact. It accounts for 32% of the total food market and 13% of India's exports. Despite its importance, the business confronts various obstacles, such as significant food waste, insufficient infrastructure, and a lack of innovation [2].

Indian food processing SMEs face resource constraints that limit their ability to invest in R&D (Kumar and Ali, 2010)

- Technological gaps: Many small and medium-sized enterprises (SMEs) do not have access to new technology that can improve productivity and product quality.
- Market rivalry: Intense rivalry from huge businesses and international players can impede the growth of small and medium-sized enterprises (SMEs).
- Regulatory challenges: Smaller businesses may find it difficult to comply with demanding food safety and quality laws [3].

Open innovation as a solution

Open innovation provides a solution for SMEs to overcome these problems by leveraging external knowledge and resources. The following sections look at how open innovation can be used to various parts of the food processing industry to increase SMEs' annual revenue.

Collaboration with research institutions

Collaboration with research institutes is one of the most effective strategies for SMEs to engage in open innovation. These collaborations may provide access to cutting-edge research and technology advances.

Real life examples

Amul

Amul, an Indian cooperative dairy corporation, engages with research organizations such as the National Dairy Research Institute (NDRI) to develop new product options. This collaboration resulted in the development of various new dairy products, increasing Amul's market share and profitability (Dairy India, 2018).

Benefits:

- Access to cutting-edge research and technologies.
- Development of new items.
- Improved product quality.
- Engaging with startups and technology providers.
- SMEs can also work with startups and technology suppliers to incorporate new technologies into their operations.

ITC limited

ITC limited, a prominent player in India's food processing business, has collaborated with a number of startups to improve its supply chain and manufacturing processes. For example, ITC worked with the company crop in technology solutions to develop a digital agriculture platform that improved crop monitoring and production predictions (ITC Ltd, 2020).

Benefits:

- Adoption of modern technology.
- Increased operating efficiency.
- Improved supply chain management.

Crowdsourcing ideas and solutions

Crowdsourcing is the process of collecting ideas, services, or material by asking contributions from a large number of individuals, usually over the internet. This method can be especially beneficial for product invention and problem solving.

Britannia industries

Britannia Industries, a renowned food manufacturer in India, initiated a crowdsourcing effort to solicit new product ideas from customers. This project led in the development of several successful items, including new biscuit and snack tastes, which expanded Britannia's global reach and revenues (Britannia Industries, 2019).

Benefits:

- Access to a varied set of ideas.
- Enhanced consumer involvement.
- Creation of market-driven products.

License agreements and joint ventures

Licensing and joint partnerships with other companies can help SMEs gain access to new markets and technologies.

Parle products

Parle products, a well-known Indian food firm, has engaged into a joint venture with a European company to launch a new line of premium cookies in India. This relationship enabled parle to tap into the European company's superior baking technology and experience, resulting in the successful introduction of a new product line (Parle Products, 2017).

Benefits:

- Access to innovative technologies.
- Entering new markets.
- Shared risks and resources.

Benefits of open innovation for SMEs

- Increased innovation capability: By leveraging external sources of information, SMEs can improve their innovation capabilities and develop new products more efficiently (Gassmann, Enkel, and Chesbrough, 2010).
- Cost-effective solutions: Open innovation can offer cost-effective solutions to innovation difficulties, easing the financial pressure on SMEs (Liechtenthaler, 2011).

- Enhanced competitive advantage: Open innovation can help SMEs remain competitive by keeping up with industry trends and technical improvements (West & Gallagher, 2006).
- Improved market reach: Collaborations and partnerships can expand into new markets and client groups, thus improving sales and turnover (Dodgson, Gann, & Salter, 2006).

Implementation strategies for open innovation

To successfully deploy open innovation, SMEs in India's food processing industry should examine the following measures:

- Building an innovative culture: It is critical to foster an environment that promotes innovation and is open to new ideas. Training programs, workshops, and staff incentives can all help to attain this goal.
- Creating collaborative networks: Networking with academic institutions, startups, technology suppliers, and other businesses can help with information exchange and collaboration (Lee, Park, Yoon, and Park, 2010).
- Using digital platforms: By leveraging digital platforms for crowdsourcing and cooperation, SMEs can interact with a larger pool of innovators and experts (Chesbrough and Brunswicker, 2014).
- Investing in R&D: While limited resources can be a concern, investing in R&D is critical for nurturing innovation. SMEs can obtain finance and assistance from government programs and private investors (Roper, Du, & Love, 2008).

Government support and policies

The Indian government has launched various efforts to encourage innovation in the food processing industry. The Pradhan Mantri Kisan SAMPADA Yojana and the Technology Upgradation Fund Scheme offer financial aid and incentives to encourage technology adoption and innovation (Ministry of Food Processing Industries, 2021). SMEs should actively seek out chances to improve their innovation capabilities [4-26].

Conclusion

Open innovation provides a big opportunity for Indian food processing SMEs to overcome inherent obstacles and increase annual revenue. SMEs can gain access to new technology, produce innovative products, and expand their market reach by working with research institutes, engaging with startups, crowdsourcing ideas, and forming strategic collaborations. While embracing open innovation necessitates a shift in mentality and strategic preparation, the potential rewards exceed the difficulties. As the Indian food processing industry grows, SMEs will need to leverage open innovation to remain competitive and achieve long-term success.

Bibliography

1. Bogers M., *et al*. "Open innovation: Research, practices, and policies". *California Management Review* 60.2 (2018): 5-16.
2. Sahdev SL., *et al*. "A study on impact of open innovation openness on the practices adopted by Indian food processing SMES on product innovation output". *Acta Innovations* 44 (2022): 45-63.
3. Singh RK., *et al*. "Applications of information and communication technology for sustainable growth of SMEs in India food industry". *Resources, Conservation and Recycling* 147 (2019): 10-18.
4. Andrade-Rojas MG., *et al*. "How information technology overcomes deficiencies for innovation in small and medium-sized enterprises: closed innovation vs. open innovation". *Information Systems Research* (2024).

5. Arcese G., *et al*. "Evidence and experience of open sustainability innovation practices in the food sector". *Sustainability* 7.7 (2015): 8067-8090.

6. Chaurasia SS., *et al*. "Open innovation for sustainability through creating shared value-role of knowledge management system, openness and organizational structure". *Journal of Knowledge Management* 24.10 (2020): 2491-2511.

7. Herstad SJ., *et al*. "Open innovation and globalisation: Theory, evidence and implications". *Vision: EraNet* 19.9 (2008): 1-96.

8. Jeong H., *et al*. "Does open innovation enhance a large firm's financial sustainability? A case of the Korean food industry". *Journal of Open Innovation: Technology, Market, and Complexity* 6.4 (2020): 101.

9. Khurana S., *et al*. "Evaluating critical factors to implement sustainable oriented innovation practices: An analysis of micro, small, and medium manufacturing enterprises". *Journal of Cleaner Production* 285 (2021): 125377.

10. Madhavan M., *et al*. "The precipitative effects of pandemic on open innovation of SMEs: a scientometrics and systematic review of Industry 4.0 and Industry 5.0". *Journal of Open Innovation: Technology, Market, and Complexity* 8.3 (2022): 152.

11. Mukherjee S and Chanda R. "Differential effects of trade openness on Indian manufacturing firms". *Economic Modelling* 61 (2017): 273-292.

12. Oduro S. "Exploring the barriers to SMEs' open innovation adoption in Ghana: A mixed research approach". *International Journal of Innovation Science* 12.1 (2020): 21-51.

13. Pellegrini L., *et al*. "Open innovation in the food and drink industry". *Journal of Agricultural and Food Industrial Organization* 12.1 (2014): 75-94.

14. Pereira V., *et al*. "An exploratory study into emerging market SMEs' involvement in the circular Economy: Evidence from India's indigenous Ayurveda industry". *Journal of Business Research* 142 (2022): 188-199.

15. Prasanna RPIR., *et al*. "Sustainability of SMEs in the competition: A systemic review on technological challenges and SME performance". *Journal of Open Innovation: Technology, Market, and Complexity* 5.4 (2019): 100.

16. Rahman H and Ramos I. "Challenges in adopting open innovation strategies in SMEs: An exploratory study in Portugal". In Proceedings of the Informing Science and Information Technology Education Conference, Informing Science Institute (2013): 431-448.

17. Rosli MM and Sidek S. "The Impact of innovation on the performance of small and medium manufacturing enterprises: Evidence from Malaysia". *Journal of Innovation Management in Small and Medium Enterprises* 1 (2013).

18. Sahdev SL., *et al*. "Factors contributing and promoting Open Innovation in Indian female-owned Food Processing SMEs-Prioritizing through the AHP technique". *Acta Innovations* 41 (2021): 28-41.

19. Singh D., *et al*. "Influence of technological innovation on performance of small manufacturing companies". *International Journal of Productivity and Performance Management* 66.7 (2017): 838-856.

20. Tang G., *et al*. "Impact of innovation culture, organization size and technological capability on the performance of SMEs: The case of China". *Sustainability* 12.4 (2020): 1355.

21. Tjahjadi B., *et al*. "The role of green innovation between green market orientation and business performance: Its implication for open innovation". *Journal of Open Innovation: Technology, Market, and Complexity* 6.4 (2020): 173.

22. Usman M., *et al*. "A systematic review of the literature on open innovation in SMEs". Researching Open Innovation in SMEs (2018): 3-35.

23. Vanhaverbeke W. "Managing open innovation in SMEs". Cambridge University Press (2017).

24. Vanhaverbeke W., *et al*. "Researching open innovation in SMEs". World Scientific (2018).

25. Venturelli A., *et al*. "A dynamic framework for sustainable open innovation in the food industry". *British Food Journal* 124.6 (2022): 1895-1911.

26. Yun JJ., *et al*. "Entrepreneurial cyclical dynamics of open innovation". *Journal of Evolutionary Economics* 28.5 (2018): 1151-1174.

Volume 19 Issue 7 July 2024