

Farmers' preferences for different brands and the challenges they have in finding high-quality tomato seeds: A review

Abstract

Factors such as farmers' brand preferences for different tomato seeds, their purchasing habits, the shifting practices of name farmers, and the difficulties they face in growing and marketing hybrid tomatoes in the Coimbatore district are all important to understand given the dominance of tomato farming. The primary data required for the study were obtained through in-person interviews using a pre-tested interview method. Secondary data on agriculture and other information related to the research topic were provided by the Tamil Nadu government. After gathering and processing the primary and secondary data, statistical analysis was carried out. The multi-dimensional scaling method was used to gauge the farmers' level of preference. The top four attributes selected by farmers were yield, stress tolerance, ease of availability, and brands from American seed firms such as Syngenta, Rasi, Mahyco, Namdhari, and Indo. The stress endurance of Indo American and Namdhari makes them appealing. In addition to the weak performance of farmers' desired attributes, the irregular execution of promotional campaigns is the cause of the significant fluctuations in the purchase of farmers' unstable brands. Every brand also has a particular USP for things like yield and cob filling (Syngenta), stress resistance (Rasi), quicker germination and early emergence (Mahyco), etc., and how dealers respond to various marketing campaigns seed companies run. Furthermore, there aren't many productivity differences in hybrid seeds, so farmers can choose to utilize several brands.

Keywords: Tomato seeds, Farmers Preference, Quality, Yield

Introduction

The most significant component of the financial system in developing nations such as India is the banking industry. Accelerating industrial development in a market economy requires a robust and well-functioning financial system. Bank loans are given

out, which increases demand for industrial goods. Since the banks were nationalised in 1969, the banking industry in India has continued to be regulated. It contributed to the growth of banking, particularly in rural areas, and expanded credit availability to small businesses, the agricultural sector, and the most vulnerable segments of society. Lastly, it accelerated potential borrowers' desire for bank loans by prioritizing lending to the most significant groups of society at a concessional rate of interest. Therefore, investment, output, employment, and economic growth would all be higher in an economy with a more efficient financial system.

Because they give various economic sectors the required credit, banks are vital to the modern economy. Banks have been tasked with overseeing financial inclusion, also known as priority sectors, in recent years. The areas of the Indian economy whose development is deemed crucial for economic growth are referred to as priority sectors; these sectors cannot be developed further without the support they require in order to accelerate economic growth. India's priority sectors are classified as exports, small-scale enterprises, and agriculture. As units designated as priority sectors, this lending means priority in the allocation of funds at concessional rates of interest, margins, etc. (Reddy, 2006). An essential component of advancing social justice, economic expansion, and decent work are micro, small, and medium-sized enterprises (MSME). MSMEs, despite their importance, suffer from three major challenges: low productivity, unfavorable working conditions, and heightened susceptibility to shocks related to the economy, politics, and environment. Particularly susceptible groups include women, young people employed in the informal economy, and entrepreneurs; they also confront additional obstacles.

With minimal capital investment, the MSME sector has grown to be a major engine of India's economy, encouraging entrepreneurship and generating a sizable number of job possibilities. It is essential to the nation's inclusive industrial growth since it supports big industries as auxiliary units. The number of MSMEs in the country is expected to grow from 6.3 crore, to ~ 7.5 crore in the coming times, growing at a projected CAGR of 2.5%. As of March 2024, The number of MSMEs registered on the Udyam portal, including the Udyam Assist Platform (UAP), has reached 4,00,42,875, The gross bank credit deployed to MSMEs under priority sector lending in October 2023

amounted to US\$ 279.18 billion, marking a 22.8% increase from the previous year and an 11.8% rise from September 2023, according to the latest RBI data on sectoral deployment.

In April 1957, the Government of India established the Khadi and Village Industries Commission (KVIC) as a statutory entity pursuant to the 'Khadi and Village Industries Commission Act of 1956', a parliamentary act. "Plan, promote, facilitate, organise and assist in the establishment and development of khadi and village industries in the rural areas in coordination with other agencies engaged in rural development wherever necessary". It assumed the responsibilities of the erstwhile All India Khadi and Village Industries Board in April 1957. Its six zonal offices are located in Delhi, Bhopal, Bengaluru, Kolkata, Mumbai, and Guwahati. Its main office is located in Mumbai. In addition to its zonal offices, it maintains offices in 28 states to carry out the execution of its several programs. One of the primary challenges faced by MSMEs in securing financing is the lack of a credit history. Unlike large companies, MSMEs do not have an established track record and hence find it difficult to secure loans from banks and other financial institutions. This lack of credit history makes MSMEs a risky investment for lenders, which makes it challenging for them to obtain financing. Priority Sector Lending role is assigned by the Reserve Bank of India to the banks for providing a specified portion of the bank lending to few specific sectors like agriculture and allied activities, micro- and small enterprises, education, housing for the poor, and other low-income groups and weaker sections.

Micro, Small and Medium Enterprise (MSME)

A crucial part of the nation's social and economic growth is played by MSME. The MSME sector supports entrepreneurship, which is frequently propelled by an individual's inventiveness and inventiveness. This industry accounts for 8% of the nation's GDP, 45% of manufactured goods produced, and 40% of export earnings. About 60 million people are employed by MSMEs through 26 million businesses. Compared to large-scale industries, MSMEs have a labor to capital ratio that is significantly greater and have had overall growth in the sector. Additionally, the MSMEs' geographic

dispersion is more uniform. MSMEs are crucial to achieving the country's goals of inclusive and equitable growth.

The size of the businesses, the range of goods and services offered, and the degree of technology used by the MSME sector in India are all rather varied. While highly creative and fast-growing businesses make up one end of the MSME spectrum, over 94% of MSMEs are unregistered, and many of the established businesses are in the unorganized or informal sector. In addition, the sector's growth potential, its crucial position in value chains and manufacturing, and the heterogeneity and unorganised structure of Indian MSMEs are significant factors that should be taken into account when formulating policies and implementing programmes (Annual report of MSME, 2008-09).

The Indian MSME Sector: An Overview

Based on preliminary estimates from the 4th All-India Census of MSMEs (2006–07), there are approximately 26 million entrepreneurs in India; 1.5 million of them are registered, and the other entrepreneurs are unregistered. According to the state-by-state breakdown of MSMEs, six states—Uttar Pradesh, Maharashtra, Tamil Nadu, West Bengal, Andhra Pradesh, and Karnataka—account for more over 55% of these businesses. Furthermore, women own roughly 7% of MSMEs, whereas proprietorships and partnerships account for more than 94% of MSMEs.

The nation's MSMEs produce more than 6,000 different goods. Food products (18.97%), textiles and ready-made clothing (14.05%), basic metals (8.81%), chemical and its products (7.55%), metal products (7.52%), machinery and equipments (6.35%), transport equipments (4.5%), rubber and plastic products (3.9%), furniture (2.62%), paper and paper products (2.03%), and leather and leather products (1.98%) are some of the major sub-sectors in terms of manufacturing output (Report of Prime Minister's Task Force on Micro, Small and Medium enterprises, 2010).

The government has placed a strong emphasis on the growth and development of the MSME sector because of its importance to the nation's social and economic development. It has occasionally taken a number of actions that have aided in the sector's expansion. The Micro, Small and Medium Enterprises Development Act, 2006, modifications to the Khadi and Village Industries Commission Act, and the introduction

of a package for the development of Micro and Small Enterprises (MSEs) are a few of the recent initiatives. Additionally, the government is introducing creative programs under the Prime Minister's Employment Generation Program (PMEGP) and the National Manufacturing Competitiveness Programme (NMCP).

In India, there are over ten institutes that focus on MSMEs. Associated Chamber of Commerce and Industry of India (ASSOCHAM), Federation of Indian Exporters Organization (FIEO), World Association for Small and Medium Enterprises (WASME), Federation of Associations of Small Industries of India (FASII), Small Industries Development Bank of India (SIDBI), Export Promotion Authorities, FICCI, Progress Harmony Development Chamber of Commerce and Industry (PHDCCI), State Infrastructure Corporation (SIC), Federation of Indian Chamber of Commerce and Industry (FICCI), and PHDCCI are a few of the notable ones. The following organizations are listed: National Institute of Small-Industry Extension Training (NISIET), National Backward Caste Finance Development Corporation, National Institute for Entrepreneurship and Small Business Development (NIESBUD), Laghu Udyog Bharti (LUB), Indian Council of Small Industries (ICSI), Indian Institute of Entrepreneurship (IIE), Small Entrepreneurs Promotion and Training Institute (SEPTI) (Ghatak, 2008).

Khadi and Village Industries Sector (KVI)

Hand spun wool, hand woven cotton, muslin, and silk types are all part of the khadi program. Seven major categories have been established for the village industries programs. These industries include those that are based on minerals, forests, agronomy and food processing, polymers and chemicals, biotechnology and rural engineering, hand-made paper and fiber, and services.

There were two new projects introduced in the khadi business. The first program, called the "work shed scheme for khadi artisans," offers support for building worksheds to provide a more comfortable working environment. By replacing outdated gear and equipment, this program increases the productivity and competitiveness of khadi industries and artisans, helping 200 khadi institutions become profit-driven, competitive, and market-driven businesses. "Strengthening of infrastructure of existing weak khadi

institutions and assistance for marketing infrastructure" was the name of the other program. According to the MSME Annual Report 2008–09, it calls for the renovation of thirty specific khadi sales outlets and offers support for the infrastructural upgrading of one hundred specific weak institutions.

Regardless of their location, size of operations, or initial investment in plant and machinery, all advances made to KVI sector units will fall under priority sector advances and be qualified for consideration under the sub-target (60%) of the small enterprises segment within the priority sector (IOB bank circulars, 2009).

Table 1. Performance of KVI

S.No	Year	Production (Rs. Crore)	Sales (Rs. Crore)	Employment (Lakh persons)
1	2000-01	6923.26	7955.10	60.07
2	2001-02	7551.52	8901.74	62.64
3	2002-03	8569.37	10193.34	66.45
4	2003-04	9681.77	11575.21	71.19
5	2004-05	10920.43	13105.19	76.78
6	2005-06	12383.84	15276.02	82.77
7	2006-07	14028.71	17562.40	88.92
8	2007-08	16677.71	21543.48	99.27
9	2008-09	17338.87	22748.19	103.91

(Source: Ministry of Agro Rural Industries, Govt. of India, 2008-09)

MSMEs Performance

The Office of the District Centre (MSME) estimated the performance of MSME sector with respect to various parameters like total number of MSMEs, fixed investment, employment and export. The data is incorporated in the following Table 1.2.

Table 2. Performance of MSMEs

S.No	Year	Total MSMEs (Lakh Numbers)	Fixed Investment (Rs. Crore)	Employment (Lakh Persons)	Export (Rs. Crore)
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1	1995-96	82.84	125750	197.93	36470
		(4.07)*	(1.58)	(3.42)	(25.46)
2	1996-97	86.21	130560	205.86	39248
		(4.07)	(3.82)	(4.00)	(7.62)
3	1997-98	89.71	133242	213.16	44442
		(4.07)	(2.05)	(3.55)	(13.23)
4	1998-99	93.36	135482	220.55	48979
		(4.07)	(1.68)	(3.46)	(10.21)
5	1999-00	97.15	139982	229.10	54200
		(4.07)	(3.32)	(3.88)	(10.66)
6	2000-01	101.1	146845	238.73	69797
		(4.07)	(4.90)	(4.21)	(28.78)
7	2001-02	105.21	154349	249.33	71244
		(4.07)	(5.11)	(4.44)	(2.07)
8	2002-03	109.49	162317	260.21	86013
		(4.07)	(5.16)	(4.36)	(20.73)
9	2003-04	113.95	170219	271.42	97644
		(4.07)	(4.87)	(4.31)	(13.52)
10	2004-05	118.59	178699	282.57	124417
		(4.07)	(4.98)	(4.11)	(27.42)
11	2005-06	123.42	188113	299.85	150242
		(4.07)	(5.27)	(4.44)	(20.76)
12	2006-07	128.44	213219	312.52	177600
		(4.07)	(8.68)	(4.23)	(24.54)

(* The figures in parenthesis are the per cent growth over the previous year).

(Source: “SSI Annual report for the year of 2008-2009”, Ministry of Small Scale Industries, Government of India 2008-09).

According to Table 1.2, which examines the size and importance of the MSME sector in the Indian economy, as of 2007 there were 128.44 lakhs micro and small businesses in India, up from 82.84 lakhs in 1995–96. The growth of MSMEs can also be

seen in fixed investment, employment, and export. 95 percent of all Indian industrial units are businesses, which is a startling percentage. When combined, they employ almost 8% of the 509 million people that make up the Indian labor force. This translates to a noteworthy 41 million people that work in this industry at this time. The MSME sector is a significant contributor to India's exports amounting to 40 per cent of the total share.

Table 3. Profile of firms in the SSI sector in India

S.No	Profile of Firms	Registered SSI	Unregistered SSI
1	Proprietary units (Percentage)	90.1	97.2
2	Per unit employment (Percentage)	4.6	2.1
3	Per unit fixed investment (Rs)	711,000	123,000
4	Employment generation per lakh Rs. of fixed investment	0.65	1.71
5	Units managed by women (Percentage)	11.08	10.66
6	Units managed by entrepreneurs from socially backward classes (Percentage)	51.45	55.62

(Source: "Final Results: Third All India Census of Small Scale Industries 2001-2002", Ministry of Small Scale Industries, Government of India, 2008-09)

While studying the MSME sector in India, it is also crucial to look into the health of firms because a significant number of firms both registered as well as the unregistered sectors are defined as 'sick'. Sickness is typically identified through yardstick such as

- a) Delay in repayment of loan over one year,
- b) Decline in net worth by 50 per cent and
- c) Decline in output in last three years.

When all yardsticks are taken into account, it can be seen that almost 14% of all units in the SSI sector were found to be either sick or in the process of becoming sick for 6.89% of unregistered units and 7.82% of registered units. There is considerable diversity

among the states, with West Bengal, Kerala, Maharashtra, Karnataka, and Andhra Pradesh having the highest percentage of sick units (60 percent).

According to units that have loans outstanding with institutional sources, such as banks and financial organizations, the percentage of sick people in the registered SSI sector is approximately 20%, while the percentage in the unregistered SSI sector is 10%. That amounts to almost 18% overall. In the recognized sector, the percentage of early illness indicated by a consistent drop in gross output was 11.5%, whereas in the unregistered sector, it was 7%. The two most often mentioned causes were "shortage of working capital" and "lack of demand." The reported causes of "sicknesses" are very comparable for both registered and unregistered enterprises, according to the disaggregated data on "health of units" in small-scale industries (Ravi, 2009).

Table 4. Sickness of units in the SSI sector in India

S.No	Reasons for Sickness	Registered SSI (Percentage)	Unregistered SSI (Percentage)
1	Lack of demand for finished goods	71.6	84.1
2	Shortage of working capital	48.0	47.1
3	Marketing problems	44.5	41.2
4	Power shortage	21.4	14.8
5	Non-availability of raw material	15.1	15.2
6	Equipment problems	10.6	12.9
7	Labour problems	7.4	5.1
8	Management problems	5.5	5.1

(Source: "Final Results: Third All India Census of Small Scale Industries 2001-2002", Ministry of SSI 2004).

Micro, Small and Medium Enterprises Development (MSMED) Act, 2006

The Indian government is giving this industry a lot of attention and implementing a number of legislative initiatives to improve the flow of credit to the MSME sector. The Micro, Small and Medium Enterprises Development Act of 2006 was passed by the Indian government in order to guarantee the MSME sector's orderly and seamless expansion. The act created the enlarged Micro, Small and Medium Enterprises Sector, which encompasses Micro, Small and Medium Manufacturing as well as Service Enterprises, to replace the notion of the tiny/small scale industries sector. The MSMED Act was the result of consultations with more than 300 Indian industrial groups, government agencies, and other stakeholders. Numerous long-standing objectives of the government and MSME sector stakeholders are achieved by the act (RBI circular, 2007).

Bank Finance to MSMEs

Since credit is the lifeblood of business, both banks and non-bank financial institutions have begun to offer long- and short-term financing to MSMEs across a range of industries in addition to huge corporations. Apart from project financing and extended loans, banks also offer other services including working capital financing and overdraft options. Based on the company's creditworthiness, cash flows from suppliers and customers, net worth, and volume of business, banks offer these facilities. Banks and non-bank financial institutions support MSME growth by offering a range of financing options, including project finance, working capital finance, term loans, and more (Seshasayee, 2006).

Priority Sector Lending

Banks guarantee credit to the small-scale sector as part of their priority sector lending. According to the government's mandate, banks must make sure that a specific percentage (currently 40%) of their total loan goes to priority industries. Among these sectors are export, small enterprises, and agriculture. Small industries are qualified for this designated credit since they are included in this list.

Table 5. The Outstanding credit to the MSME sector

S.No	As on March 31	Public Sector (Rs. Crore)	Private Sector (Rs. Crore)	Foreign Banks (Rs. Crore)
1	2007	1,02,550 (24.40)	13,136 (26.05)	11,637 (38.04)
2	2008	1,51,137 (47.38)	46,912 (257.12)	15,489 (33.10)
3	2009 P	1,91,307 (26.58)	47,916 (2.14)	18,138 (17.10)

P: Provisional.

Note: Figures in parenthesis indicate the percentage growth as compared to the previous year.

(Source: "Report on trend and progress of Banking in India", Reserve Bank of India (RBI), 2008-09).

Public sector banks are the main provider of institutional loans to the MSME sector. Additionally, credit is given to this industry by foreign banks with operations in India as well as private sector banks, both established and emerging.

hybrid cotton seeds from the farmers in the sample. The findings showed that the main obstacles include low-quality seeds, picking issues, rising cultivation costs, a lack of labor, unfavorable soil and agroclimatic conditions, lack of a stable pricing, delays in availability, and lack of a financing facility. These studies have shown a connection between consumer perceptions of risk and food dangers. In the context of consumer purchasing behavior, the perceived risk theory has also verified a connection between customer risk perception and behavior. However, a relationship between food risks, risk perception, and purchasing behavior is still unknown.

Conclusion:

It is clear that other factors, such as the best labeling and packaging, prompt delivery, longer credit terms, and a higher dealers' margin, are equally important and may be the main promotion-related factors to take into account in order to get consistent performance. Farmers' preferences, business perceptions, and brand performance are significant aspects of dealers' preferences. They even have a big impact on the success of

well-known brands. Better product promotion will come from making greater use of promotional events like retailer meetings, advertisements, posters, and banners. In addition to trials and demos, free sample distribution must be taken into account while evaluating the goods' potential in the particular field. It has been shown that, in spite of dealer pressure, farmer counsel, and historical evidence, advertising campaigns and demonstrations are the most crucial elements that need to be strengthened with adequate money.

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Reference:

Agriculture today, year book, 2016. Pp: 202-205.

Aneja, R. 2017. Trends and export competitiveness of major horticulture crops in India. Asian J

Hort 12:111-116. DOI: 10.15740/HAS/TAJH/12.1/111-116

- Barrett, C. B., & Lentz, E. C. (2016). Hunger and food insecurity. In D. Brady & L. M. Burton (Eds.), *The Oxford Handbook of Social Science of Poverty*. Oxford University Press.
- Basu, K. (2010). *The economics of foodgrain management in India*. Ministry of Finance. Government of India.
- Behera, T.K., P.M/ Singh, Jyoti Devi, Hiranmoy Das and Bhuvaneshwari, S. 2023. Vegetables for meeting Sustainable Development Goal. *Indian Horticulture*, 68(2):4-5
- Coomes, O. T., McGuire, S. J., Garine, E., Caillon, S., McKey, D., Demeulenaere, E., Jarvis, D., Aistara, G., Barnaud, A., Clouvel, P., Emperaire, L., Louafi, S., Martin, P., Massol, F., Pautasso, M., Violon, C., & Wencélius, J. (2015). Farmer seed networks make a limited contribution to agriculture? Four common misconceptions. *Food Policy*, 56, 41–50.
- De, P and Iyengar, K. 2014. *Book on Developing economic corridors in South Asia*. Pp. 45-62. Asian Development Bank, Manila, Philippines
- Dreze, J., & Sen A. (1989). *Hunger and public action*. United Nations University World Institute for Development Economics Research (UNU-WIDER) and Clarendon Press, Oxford
- FAO, ECA & AUC. (2020). *Africa regional overview of food security and nutrition 2019: Containing the damage of economic slowdowns and downturns to food security in Africa*. Accra: Food and Agriculture Organization of the United Nations, Economic Commission for Africa, African Union Commission. <https://doi.org/10.4060/CA7343EN>.
- Gnanasekaran, A and S. Vijayalakshmi. 2014. An Economic Analysis of Tomato Cultivation in Dindigul District of Tamil Nadu. *International Journal of Science and Research*. 3(12): 995-997
- Gulati, A, Gujral J., & Nandakumar T. (2012). *National food security bill challenges and options*, Discussion paper No. 2, Commission for agricultural costs and prices, Government of India

Latha, I. 2018. Vegetable growing: status, future, and issues in India. *Review of Research*, 7(10): 1-8

Nagesh Kumar, M. V., Bharathi, Y and Pradeep, T. 2018. Indian Seed Sector - Challenges And Opportunities. *The J. Res. PJTSAU* 46(4)1-12

Panda, M. (2024). Evolution of India's Policy Response to Hunger, Nutrition, and Food Security Since Independence. In: Dev, S.M., Ganesh-Kumar, A., Pandey, V.L. (eds) *Achieving Zero Hunger in India. India Studies in Business and Economics*. Springer, Singapore.
https://doi.org/10.1007/978-981-99-4413-2_2

Planning Commission (2009). Report of the expert group to review the methodology for estimation of poverty. New Delhi: Government of India

Planning Commission (2013). Press Note on Poverty Estimates, 2011–12. Press Information Bureau, Government of India 22 July 2013

Planning Commission (2014). Report of the Expert Group to Review the Methodology for Estimation of Poverty. New Delhi: Government of India

Pranav, U, Parminder, K and Amit, G. 2023. Dynamics of Indian Vegetables Trade with South-Asia: Growth, Composition and Direction. *Journal of Agricultural Development and Policy*, 33 (1): 68-77

Radhakrishna, R. (2005). Food and nutrition security for the poor in India. *Economic and Political Weekly*, 40(18), April

Ravallion, M. (1997). Famines and economics. *Journal of Economic Literature*, 35, 1205–1242.

Schreinemachers, P., Howard, J., Turner, M. 2021. Africa's evolving vegetable seed sector: status, policy options and lessons from Asia. *Food Sec.* **13**, 511–523 (2021).
<https://doi.org/10.1007/s12571-021-01146-y>

Sen, A. (1981). *Poverty and Famines*. Clarendon Press.

Strauss, J., & Thomas, D. (1998). Health, nutrition, and economic development. *Journal of Economic Literature*, 36(2), 766–817.

Sukhatme, P. V. (1978). Assessment of adequacy of diets at different income levels. *Economic and Political Weekly*, 13(31/33), 1373–1384.

Sukhatme, P. V. (1981). On measurement of poverty. *Economic and Political Weekly*, 16(32), 1318– 1324.

Webb, P., Coates, J., Frongillo, E. A., Rogers, B. L., Swindale, A., & Bilinsky, P. (2006). Measuring household food insecurity: Why it's so important and yet so difficult to do. *The Journal of Nutrition*, 136, 1404S-1408S.

World Bank (2016). *Poverty and shared prosperity 2016: Taking on Inequality*. Washington, DC: World Bank

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