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Trends and Growth in Ceramics Industry: A Comparative Study Between India and China

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Abstract

Ceramic industry of India is a booming sector and acquires the growth potential of both domestic and local markets. In this scenario, Indian ceramics sector is facing major challenges from Chinese ceramic products both in manufacturing and exporting fronts. Therefore, analysing the industry specific environment of ceramic sector and making a cross country analysis between Indian and Chinese ceramics sector is of significant importance to the policy makers to boost this sector. To address this issue, the paper makes an attempt to make a comparative analysis using various parameters between the Indian and Chinese ceramics sector. Further SWOT analysis and cluster comparisons have also been conducted to understand the present scenario of this sector. Based on the analysis and discussions suitable conclusions have been done.

Keywords: Ceramics, Production, Export, Cluster, Government

1. Background

Ceramics sector is a diverse industry that produces many classes of products like sanitary ware (wash basins, sinks, toilet bowls etc.), ceramic and ceramic ware products, electrical insulators, semiconductors, capacitors, protecting wire tubes, resistors, inductors, circuit protection devices, refractories, tiles, ceramic ware, etc.

It is thought of that the future of the ceramic sector is coupled with the continued economic growth and sustainable industrial development. In globalscenario, the ceramic trade has witnessed a series of important changes over the century resulting in significant increase in demand for prime quality ceramic merchandise within the globalized arena.

India is emerging as the major manufacturer and supplier of ceramic products after China which is the largest producer and supplier in the world. According to CARE Industry Research, 2020, the Indian exports of ceramic tiles increased by 31% from 1,078 million USD in FY 2019 to 1,414 million USD in FY2020 and the imports of ceramic tiles decreased by 15% from 47.8 million USD in FY 2019 to 40.5 million USD in FY 2020.On the other hand, the value of ceramics exports from China totaled $ 25 billion in 2020, amounted to 0.969% of total exports from China.

In this context, it is significant to empirically understand the differences between the Indian and Chinese ceramic industry along with the policy measures initiated to support the sector, that is, to make a cross country analysis between Indian and Chinese ceramic sector.

2. Literature Review

Biswas (2019) empirically analysed the relation between capital structure and profitability of eight selected ceramic companies during the period of 10 years from 2008 to 2017 using the parameters Return on Equity (ROE), current ratio, debt-equity ratio and degree financial leverage. The findings revealed mixed results, that a few of the sample ceramic companies depicted positive and a few depicted negative correlations between ROE and the ratios of capital structure. **Islam &Ganguly (2019)** explored the factors considered under the utility of loan services provided by the public sector banks which impacts the capital formation of MSMEs of Purba and PaschimMedinipur districts of West Bengal. Their findings indicated that loans sanctioned by public sector banks to the MSMEs are creating financial support to the entrepreneurs but not directly aiding in capital formation.

Das (2019) identified that the ceramic clusters in Morbi, Gujarat emerged to be major ceramics producers and effectiveness of collective strategies of both the industry and the state towards technological up gradation, product diversification and external orientation has led to such outcomes. With high level of automation and the state's efforts has resulted in lowering of costs, creating jobs and accessing newer markets both in the domestic and global spheres.

Hazra& Barman (2018) observed that the people involved in this industry are suffering badly and are leaving their job of hereditary pottery business and are struggling with different occupations.

Paul (2018) pointed out that Government of India and West Bengal have taken some initiatives through various five year plans to rejuvenate the pottery industries of Bankura and clay models of Nadia but is not sufficient but the Tufanganj I block area is completely neglected and did not received any benefits on behalf of the policy makers. **Almamari (2017)** identified that competition from imported pottery and the negative impacts on local markets has become a pressing issue in Oman and suggested some significant strategies to reduce the harmful consequences of imported pottery on the Omani pottery market through minimum foreign intervention and implementing societal and structural changes in the business practices.

Biswas&Pandey (2016) indicates that the glass clusters are operating in Increasing Returns to Scale (IRS) and suggested that increased application of improved technologies will raise the productivity significantly and in turn will increase the output of the cluster. **Mukherjee (2015)** studied the nature of chemical industry in different states of India and identified the chemical industries of India are facing several constraints like scarcity of some raw materials, lack of power and scarcity of skilled personnel.

Pal & Pal (2015) pointed that portion of the finished products of terracotta pottery industries of Panchmura village in Bankura are being exported and the domestic market is also expanding due to the uniqueness of such products and increasing interest of the buyers of such terracotta products. **Maiti (2014)** analysed the CGCRI's intervention in technology up gradation in traditional ceramics industries along with special emphasis on innovative approaches on cluster development programme in the Small and Medium Enterprises (SMEs) sector in India.

Kasemi (2014) observed problems and prospects of development of pottery industry and policies for development in the district of Cooch Behar, West Bengal. The major problems identified are irregular supply of raw material, unstructured financial support system, poor bargaining power, high middlemen margins, poor management, etc. **Amendolaet. al. (2010)** examined the Italian ceramics sector and the related dynamic business environment which affected the international competitive scenario which was rapidly creating barriers to the entry in the market of the emergent competitors. Further the researchers concluded that the sector will show its potentials in the future with increased volumes of production and will achieve sustainability through internationalization.

Oliver, et. al. (2008) pointed out that the basic knowledge to successfully compete in domestic and global markets is locally procured along with a combination of global knowledge learnt or acquired through operations in other countries. **Maiti (2003)** revealed

that the trend in international manufacturing and marketing of traditional ceramic products is positive but in Indian context, the sector needs focused restructuring and technological adoptions to become sustainable manufacturer.

3. Research Gap

On the basis of extensive review of available literatures, it is evident that over the years, numerous attempts have been initiated by the researchers and academicians across the globe to examine the different aspects of MSMEs including the ceramics and pottery but majority of them are inclinedtowardspinpointing of the general problems and prospects of such MSMEs. It is found that no such conclusivehas been done which attempts to make a cross country analysis of the Indian ceramics sector with the Chinese ceramics sector, which is believed to be having a huge socio-economic significance.

4. Research Objectives

Based on the research gap following research objectives has been identified:

- To make a cross county analysis between Indian and Chinese ceramics sector.
- To understand the present problems and opportunities of the ceramics sectors of India and China.
- To make a comparative analysis between major ceramics clusters operating in India and China.

5. Research Methodology

The present study is descriptive and empirical in nature. Various national and international reports, research papers and government websites have been consulted to make a cross country analysis between Indian and Chinese ceramic sector. On the basis of detailed analysis and in depth study, cross country analysis has been conducted on the basis of certain selected parameters which includes production, consumption, export, import and government support. Further to understand the present problems and opportunities of the ceramics sectors of India and China, Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis have been done and in order to analyse the cluster performance, a comparative analysis has been done between major ceramics clusters operating in India and China. On the basis of the analysis and discussions suitable conclusions have been drawn.

6. Cross Country Analysis between Indian and Chinese Ceramic Sector

The ceramic business in India began about a century ago, and it has grown to become an industry since then. Over the years, the sector has been rapidly modernising, with new developments contributing to long-term improvements in product profile, quality, and design,

allowing it to emerge as a global leader. On the other hand, China has established itself as the world leader in ceramic sector due to its sectorial advantages and is witnessing substantial growth over the years. The following parameters which has been identified to make a cross country analysis and are discussed below:

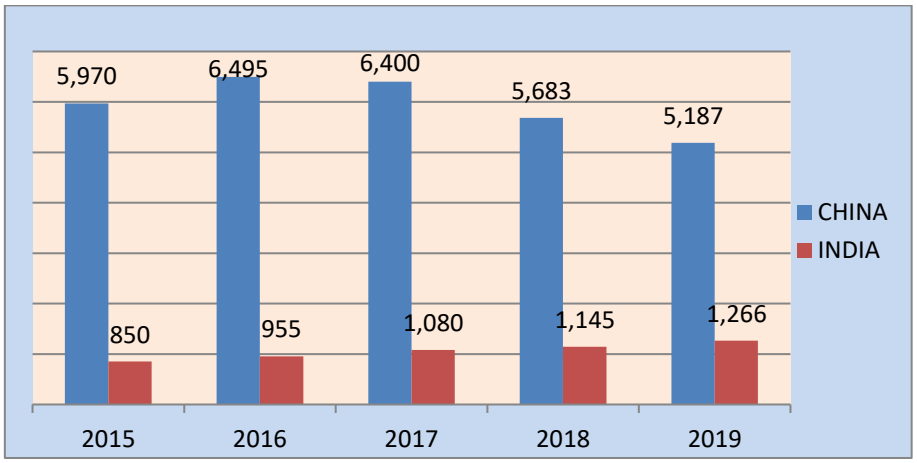
6.1 Ceramic Tiles Production

Through exporting high-quality ceramic products, India's ceramics sector has grown to become a key manufacturer and supplier in the home market and a prominent competitor in the global market, accounting for 7 per cent of global ceramics production in 2019(Status Quo and Outlook, 2022).

Although there are some significant firms functioning within the ceramics sector in India, small and medium enterprises (SMEs) account for quite half the entire ceramics market.From FY13 to FY17, the organised sector, which accounts for more than half of the ceramics industry, expanded at a compounded Annual Growth Rate (CAGR) of 7.7 per cent in Indian context. However, for the unorganised sector, the road ahead is difficult and perilous. Many international businesses are driven to enter the Indian ceramics sector, despite the demographic advantage and growing prospects of the building sector, in order to capture the opportunity to leverage their investments.

After China, India is the world's second-largest producer of ceramic tiles and third largest overall ceramics products manufacturer in the world which is shown in the figure below:

Figure 1: Ceramic tiles manufactured by China and India (in million square metres)



Source: Data collected from Status Quo and Outlook 2022: Indian Ceramics Industry and CARE Industry Research, 2020 and compiled by the researchers

From the above figure it is evident that the average production of ceramic tiles by China is 5,024 million square metres (CARE Industry Research, 2020)which is significantly high as compared to India whose average production is 768 million square metres. India sustained its

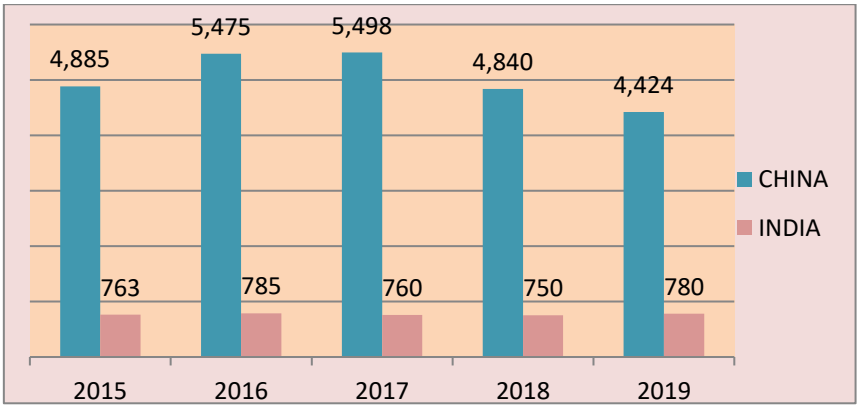
position as the second largest tile producer in the world in 2019 with an increase in production from 1,145 million square metres to 1,266 million square metres, that is, 10.6 per cent growth from 2018 to 2019.The Indian ceramic sector has increased exports in response to a drop in domestic demand. Moreover, the tiles production by India has grown at aCAGR of 2.18 per cent from 2015 to 2019 which is a positive indicator as compared to Chinese production which has declined at a CAGR of 10.42 per cent over the same period.

On the other hand, following an 11 per cent drop in 2018, China, the world's largest manufacturer, consumer, and exporter of ceramic tiles, witnessed a second severe downturn in production and consumption in 2019. Despite the fact that the Chinese industry and market are difficult to assess due to huge disparities in available data, various estimations indicate that Chinese production declined in 2019 to 5,187 million square metres, decreased by 8.7 per cent on 2018.

6.2 Domestic consumption of Ceramic tiles

The domestic consumption of China is anticipated to be 4,424 million square metres, accounting for 41% of global production whereas the domestic consumption of India is 780 million square metres in 2019 reckoning approximately 7 per cent of global production which is shown in the figure below:

Figure 2: Domestic consumption of Ceramic tiles by China and India (in million square metres)



Source: Data collected from Status Quo and Outlook 2022: Indian Ceramics Industry and CARE Industry Research, 2020and compiled by the researchers

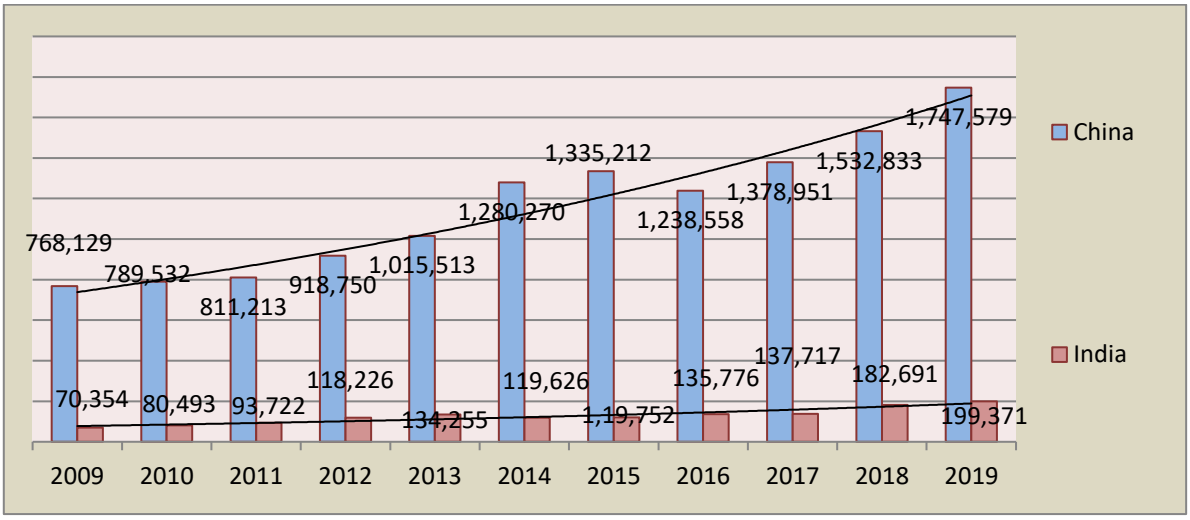
In 2017 and 2018 the domestic tile demand has been negatively hit by the economic recession in India. The domestic consumption declined from 785 million square metres in 2016 to 760 million square metres in 2017 and to 750 million square metres in 2018, that is, decline of -1.3 per cent, yet there are numerous variables that are already fuelling a comeback in consumption.

The government's investments in infrastructure and residential construction are the most important factors, including a programme to develop and create world-class smart cities which has contributed to the boosting of domestic consumption in 2019 to 780 million square metres from 750 million square metres.

It is expected that various government initiatives such as Housing for All by 2022, Rural Housing Fund initiatives and the new real estate regulatory and development act (RERA), urbanisation, rising family disposable income, and favourable demographic profile are all factors that will assist drive up demand for ceramic tiles in India.In contrast to that the Chinese consumption of ceramic tiles has decreased from 5498 million square metres in 2017 to 4424 million square metres in 2019.

6.3 Ceramic exports

Figure 3: Ceramic exports by China and India (in tons)



Source: Data collected from https://www.intracen.org/*and CARE Industry Research, 2020 and compiled by the researchers*

Since decades China is the leading manufacturer and exporter of ceramics products. It is evident that total ceramics exports by China in the year 2009 were 7.68 lakh tons which increased to 17.47 lakh tons in 2019 with a Compound Annual Growth rate (CAGR) of 8.6 per cent year on year from 2009 to 2019. Whereas total ceramics exports by India was 70,354 tons in 2009 which increased to 1,99,371 tons in 2019 with a CAGR of 11 per centyear on year from 2009 to 2019. India is the third largest exporter of ceramics products in the world exporting 6.9per cent of the total ceramics export after China which exports 60.6per cent and Mexico with 11.7per cent share.

Domestic consumption which increased by 4% to 780 million square meters in the 2019 was not as significant as increase in exports in driving the growth. Following a 20% gain in 2018

(274 million square meters), India grew by another 31.4 percent in 2019 (360 million square meters), making it the world's third largest exporter after China and Spain.Although being the third largest exporter of ceramics products the difference from China in both in terms of average export and percentage of total ceramics export is quite high. The average ceramics export is 11,65,140 tons from China and1,26,544 tons from India.

Chinese tile shipments fell for the sixth year in a row, from 854 million square meters to 779 million square meters with a decline of -8.8%, accounting for 27.5 percent of global exports. The exports of Chinese tiles to Asia decreased by 39 million square meters to 477.6 million square meters in 2019 owing mostly to contractions in the three main overseas markets for Chinese tiles, namely the Philippines, South Korea, and Indonesia. Due to the imposition of tariffs on Chinese imports into the United States in the fourth quarter of 2019, sales in North America fell from 80.5 to 54 million square meters with a fall of -33%.

This resulted in an initial contraction in 2019, down 36% from 64 million to 40 million square meters, followed by China's full withdrawal from the US market in the first half of 2020.In context of the Chinese domestic market, the price of ceramic tiles has increased from € 4.1 to € 4.7 /square meters as well as in case of the export economy the price of ceramic tiles has increased from € 4.35 to € 5 /square meters, that is, the average selling price of Chinese tiles grew by 15%. Thus despite of lower volumes export sales increased by 3.7% to over 3,895 million euros from 2015 to 2019.

In spite of fact that India is far behind China in term of production and exports, Indian ceramic industry has shown a positive expansion in the recent years and this expansion has been fuelled in part by the opportunity to reclaim market share previously held by China in nations and areas where antidumping charges on Chinese ceramic tiles were imposed (EU, Brazil, Taiwan, Chile, Vietnam and South Korea, amongst others).The implementation of antidumping charges on Chinese tile imports, as well as tax reform aimed at preventing unfair competition (Goods and Service Tax and e-waybill rules), will benefit the most well-organized ceramic businesses in India.

It is expected that both Indian and Chinese exports will continue to develop and expand into new markets, but China will face the same difficulties and constraints that the Indian ceramic sector as a whole does.

The economic climate in Morbi area of Gujarat, which accounts for 75 per cent all Indian ceramic exports, has steadily improved recent years especially due part to the formation of joint ventures between local small and medium-sized unorganized businesses and bigger, well-established Indian ceramic enterprises.This has been made possible by continuous

technological investments in the Morbi district over the last five years, with the goal of modernizing factories, increasing production capacity, and improving product quality, including that of the most innovative products like large slabs, all while maintaining the lowest production costs of any exporter country.

About ten years ago, the start of sanitary ware production in Morbi also benefited from the existence of a mature ceramic tile manufacturing group. In many cases, ceramic tile manufacturers began to produce toilets themselves. According to data from the Morbi Ceramics Association, there are currently 76 sanitary ware production units in operation with an installed capacity of between 100,000 and 400,000 pieces per year.Following the lead of the ceramic tile industry, rapid expansion in sanitary ware production has been centered in Gujarat, which has grown to a production capacity of over 30 million pieces per year, accounting for roughly 75 per cent of the country's total output in just a few years making India the world's second largest sanitary ware producer after China, with an installed capacity of more than 40 million pieces per year.

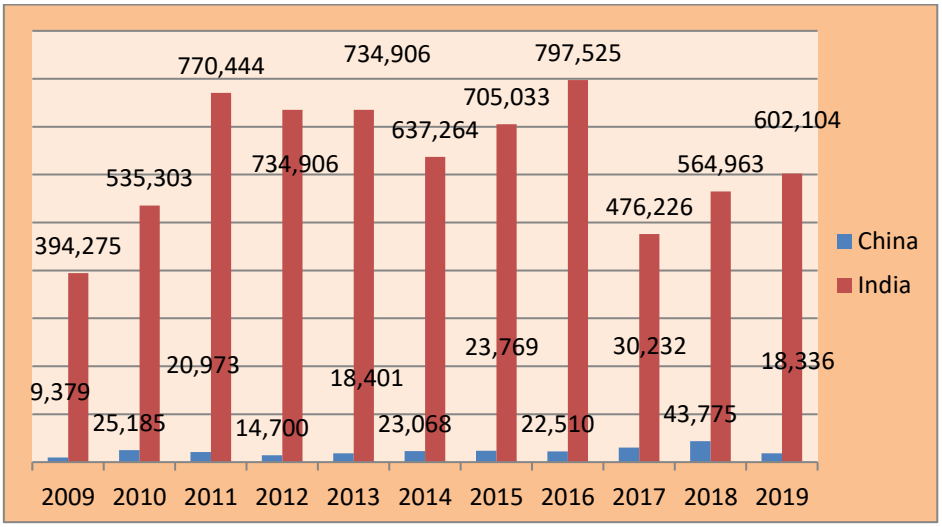
Apart from Morbi, the Thangadhcluster in Gujarat, which originated as ceramic cluster since 1990s, today includes around 220 small and mid-sized businesses that employ a major percentage of the town's 43,000 residents. The total yearly output is estimated to be in the range of 14-16 million pieces of sanitary ware, with the top 15 businesses producing 40% of the total.

The ceramic clusters of Morbi and Thangadh, two tiny towns about 100 km apart and around 200 miles from the provincial seat of Gandhi Nagar, are two of Gujarat's most dynamic sanitary ware producing centers. Their closeness to roads, seaports, and airports, as well as the availability of native clay in Gujarat and neighboring province Rajasthan, are key factors in their industrial development. These benefits are bolstered by the features of industrial clusters, which make it easier to share resources, expertise, infrastructure, logistics, and suppliers, resulting in highly efficient and cost-effective networks and production centers.

Because of the customer assistance given by various offices and representatives of European equipment manufacturers, notably in Morbi, the sanitary ware makers in Morbi and Thangadh have an excellent and quickly growing level of technology. Many local business owners attend international ceramic exhibitions on a regular basis and are up to date on the newest technologies.

6.4 Ceramic imports

Figure 4: Ceramic imports by China and India (in USD)



Source: Data collected from https://www.intracen.org/*and CARE Industry Research, 2020 and compiled by the researchers*

Import of ceramics products both by China and India has increased at a CAGR of 48.84 per cent and 34.51 per cent respectively on a year on year basis from 2009 to 2019. The average ceramic products imported by India is USD 6,32,086 which is significantly more than the average ceramic products imported by China amounting to USD 22,757 during 2009 to 2019. As of 2019 India imported 1.9 per cent of the total ceramic imports and is the 10th largest importer of ceramics products. On the other hand, China imported 0.03 per cent of the world ceramic imports.

6.5 Government Support

In context of India, Ministry of Micro, Small and Medium enterprises has initiated various policy measures to support the ceramic clusters development and for enhancing the productivity and competitiveness of such clusters underMicro and Small Enterprises – Cluster Development Programme (MSE – CDP). Moreover Public Private Partnership (PPP) model is also proposed by the Department of Industrial Policy and Promotion (DIPP) named as Industrial Infrastructure Up gradation Scheme (IIUS) to increase the competitiveness among the domestic firms. Ministry of Small Scale Industries (SSI) has launched Credit Linked Capital Subsidy Scheme (CLCSS) to provide technological up gradation and capital support to the ceramic clusters and units.

Apart from these schemes, Government of Gujarat has also collaborated with United Nations Industrial Development Organisation (UNIDO) to support the Morbi ceramic cluster for modernization and restructuring. Moreover, to protect the domestic ceramic units from

imports, especially from Chinese ceramic imports, Government of India imposed anti-dumping duty of 0.85 EURO per kilogram on ceramic products imported from China for a period of five years from June 2017 to May 2022. Along with it, Good and Services Tax (GST) on ceramic products has been lowered from 28 per cent to 18 per cent in the FY 2019 – 2020 to boost domestic consumption.

On the other hand, Government of China has is continuously improving its financial and technical support along with export promotion schemes. It is expected that in the coming two years, the Government of China will invest approximately $150 billion into the ceramic industry, especially supporting the initiatives to increase the production of high-quality electronic conductors and refectories which in turn will support the electronic devises industry also.

The Chinese government has issued a series of policies to encourage the development of China's industrial ceramic manufacturing industry. With the implementation of the "13th Five-Year Plan" for the new materials industry and the Made in China 2025, the scale Chinese industrial ceramic manufacturing has steadily increased over the years.

6.6 SWOT Analysis

To understand the present problems and opportunities of the ceramics sectors of India and China SWOT analysis has been conducted which is represented in the table below:

Table 1: SWOT Analysis

	India	**China**
Strength	• Long history of Terracotta and Pottery items. • Low cost labour availability, • Significant demand in domestic market.	• Significant demand in domestic and international market, • Long History of Ceramic Culture, • Large Scale and Low Cost production, • Highly modernized technology.
Weakness	• Lack of process and product standardization, • Mixed quality products, • Lack of research and development and internationalization.	• The quality of the ceramic products is mixed, especially the Indian tiles are considered to be more superior to the Chinese ones in the international market.
Opportunity	• Increasing domestic and foreign demand.	• Increasing domestic and foreign demand, • Entry in WTO.

Threat	• Increased competition from China and Italy. • Dumping threats from China.	• Threats of antidumping and trade barriers from other nations.

Source: Collected from Status Quo and Outlook 2022 and CARE Industry Research, 2020 and compiled by the researchers

6.7 Cluster Comparisons

Comparative analysis between major ceramics clusters operating in India and China is depicted in the table below:

Table 2: Cluster Comparisons

	India	**China**
Major Clusters	Morbi, Thangadh, Khurja and VriddhachalamClusters	Foshan, Chancheng, Nanzhuang and ShiwanClusters
Paradigm	Large scale production and cost reduction with energy efficiency.	Economies of scale and customized production.
Competitive advantage	Emerging domestic market	Sophisticated technology and lower cost of production.
Distribution	Mainly through intermediaries.	Direct selling and through intermediaries.
Industrial structure	Mostly MSMEs with few privately owned corporations.	Mostly independent SMEs.
Internationalization strategy	MSMEs mostly cater domestic demand, big firms caters both domestic and international demand.	Firms caterboth domestic and international market.

Source: Collected from Status Quo and Outlook 2022: Indian Ceramics Industry and CARE Industry Research, 2020and compiled by the researchers

7. Conclusion and Recommendations

On the basis of the above analysis and discussion it can be concluded that both India and China are in a strategically competitive position in the global ceramic business. In context of volume of trades India is far behind China but Indian ceramic products are in no way inferior to the Chinese one in terms of quality, durability and design and have significant future growth potential due to the increase in domestic and foreign demands of Indian ceramic products.

It is important to mention that in the recent years, the entire world has experienced a drastic change in the Global Supply Chains (GSCs) which resulted into systematic shifts in dependence on China for ceramic supplies towards other countries, especially the US and European Union heading towards India for ceramic supplies in 2019 (CARE Industry Research, 2020).

With reference to the SWOT analysis as well as cluster comparisons, it is evident that there is urgent need for government intervention to the ceramics sector so that the sector could compete globally, especially created through China.

It is the right time to take prompt and effective initiatives by the policy makers to support the ceramic sector so that they can utilize the opportunity created in the world and to more eminent ceramic supplier in the global arena.

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