MSME and Sustainable Industrial Development- with reference to Dharwad District

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Abstract: Micro, Small, and Medium-Sized Enterprises (MSMEs) are essential to the Dharwad District's industrial growth. Local owners operate these businesses, which frequently run, contributing significantly to the region's economy. They promote innovation, entrepreneurship, and socioeconomic growth in addition to helping to create jobs. As per the UDYAM Aadhar registration, there are 23951 MSMEs in Dharwad district, of which 20682 account for micro-units, 3138 Small units and 131 Medium enterprises. India has strongly committed to sustainable development, including achieving SDG 9. Achieving Sustainable Development Goal 9 (SDG 9) is paramount in attaining sustainable industrial development. SDG 9 aims to establish resilient infrastructure, promote inclusive and sustainable industrialisation, and encourage innovation. Meeting SDG 9 can generate more employment opportunities, stimulate economic growth, and improve industrial productivity. Furthermore, it helps to significantly reduce the environmental impact of industrial activities. Micro, Small, and Medium Enterprises (MSMEs) are vital to sustainable industrial development. Inclusive and sustainable industrialisation can lead to the growth and development of MSMEs, job creation, increased productivity, and poverty reduction. The present study analyses MSMEs' development, growth, and effectiveness in Dharwad district. The number of units registered, employment, and investments from 2010-11 to 2019-20 are the metrics used to gauge growth. Further, the study explores the district's sustainable industrial development scope through the MSME sector.

Keywords: MSMEs, Dharwad District, Sustainable Industrial Development

Introduction

Micro, small, and medium-sized enterprises (MSMEs) are not just a sector of the economy, but a dynamic and innovative industry. Their unique characteristics, such as their pivotal role in economic advancement, substantial contribution to the GDP, and ability to generate revenue from exports at a low-cost investment, make them key players in reducing regional disparities. However, the most significant aspect of MSMEs is their contribution to industry growth in rural and semi-urban areas. This unique characteristic of MSMEs promotes equitable growth and is crucial in reducing regional disparities, a key aspect of sustainable development.

Part I
Concept of Sustainable Industrial Development

Sustainable development aims to link social, economic, and environmental goals. Integrated decision-making became crucial to maintaining the natural environment's regeneration capacity while meeting the population's economic and social needs. On January 1st, 2016, the United Nations unveiled the Sustainable Development Goals, a set of 17 objectives, 169 targets, and 232 indicators that must all be met by 2030. By embracing the UN's "Transforming our World: the 2030 Agenda for Sustainable Development," all member nations have pledged to accomplish the Sustainable Development Goals (SDGs) by 2030. Climate change, economic inequality, innovation, sustainable industrialisation, sustainable consumerism, peace, and justice are the new areas prioritised, and all goals are interrelated; achieving one goal helps resolve problems with other pursuits.

The balance between economic progress and environmental preservation is crucial for sustainable industrial development. Sustainable industrial planning aims to foster innovation and support Sustainable Development Goal 9 by minimising the adverse environmental impact while promoting economic and social advancement. This approach fosters economic growth and employment opportunities and reduces poverty by creating resilient and sustainable infrastructure and inclusive industrialisation.

By adopting sustainable industrial practices, countries can ensure their industrial growth is environmentally friendly and socially inclusive, leading to a more balanced and equitable society. Sustainable Development Goal 9 (SDGs) calls for developing resilient infrastructure, inclusive and sustainable industrialisation, and innovation.

Sustainable industrial development is associated with several benefits that can positively impact the economy, both socially and environmentally. Green industry achieves economic, social, and environmental benefits, contributing to sustainable industrial development.

Rationale of Sustainable Industrial Development

Micro, Small, and Medium-Sized Enterprises (MSMEs) are essential to sustainable industrial development, fostering economic growth while upholding social and environmental well-being. Due to their contribution to economic diversity, innovation, and job creation, MSMEs are crucial to economic progress. By implementing sustainable practices, they can reduce operating costs through resource efficiency, enhance resilience and competitiveness, and reduce the adverse impacts of pollution and waste on the environment. Sustainable MSMEs can stimulate regional economic growth by creating jobs, encouraging social inclusion, enhancing community well-being, and guaranteeing equitable growth. Sustainable practices additionally support MSMEs in meeting the increased consumer demand for eco-friendly goods and adhering to regulatory requirements, ensuring long-term viability. Therefore, integrating sustainability into MSME operations helps firms and improves economic stability and environmental health.

MSMEs An Approach to Sustainable Industrial Development

Micro, Small, and Medium-Sized Enterprises (MSMEs) have become critical players in economic growth and development, especially in emerging markets. MSMEs are acknowledged for creating jobs, encouraging entrepreneurship, and fostering innovation. Due to their ability to implement environmentally sustainable practices and technology, MSMEs have the potential to be a powerful tool for attaining sustainable industrial development. MSMEs are essential for sustaining sustainable development as they spur economic growth, generate employment, reduce poverty, and eradicate inequality.

MSMEs and Economic Sustainability

Micro, Small, and Medium-Sized Enterprises (MSMEs) are integral to resilience and economic sustainability. MSMEs show resilience to economic fluctuations by significantly contributing to the GDP regardless of their smaller size. Their broad spectrum of goods and services fulfils the demands of different market segments, fostering economic stability and success. MSMEs are associated with entrepreneurship and innovation because of their increased flexibility and adaptability, which enables them to react swiftly to changes in the market while assessing new concepts and adjusting to new technologies. MSMEs benefit from this innovation culture, fostering economic dynamism and competitiveness.

Furthermore, micro, small, and medium-sized enterprises support large-scale industries by offering the required supplies, promoting inclusive industrial expansion and contributing to the growth of auxiliary units through technological innovation in the production process. MSMEs are expanding their horizons into every economic domain, producing a vast array of goods and providing a variety of services to meet the needs of both domestic and foreign consumers.

The diverse operational capabilities possessed by MSMEs make them indispensable in achieving sustainable development goals. MSMEs integrate industrial, agricultural, and service sectors through their presence. Thus, MSMEs are vital to the sustainability of the economy because they foster innovation, entrepreneurship, income generation, and employment generation.

MSMEs and Social Sustainability

MSMEs are not just economic entities; they are social catalysts. MSMEs play a pivotal role in developing inclusive and resilient societies by creating employment opportunities. It is particularly crucial for women, youths, and marginalised community members, who gain exposure to diverse employment opportunities through MSMEs. MSMEs are instrumental in shaping a more equitable society by improving livelihoods, reducing poverty, and fostering social inclusion.

MSMEs offer economic involvement and entrepreneurship opportunities to marginalised groups, including women, minorities, and individuals with disabilities. It gives these communities access to resources, helps them become financially independent, and supports the socio-economic growth of their communities.

Also, MSMEs often strongly encourage them to engage in sustainable business practices due to their close connection to the community and sensitivity to its needs and concerns. Strong ties exist between MSMEs and their respective regions as firms employ local talent, procure raw materials locally, and serve regional markets.

MSMEs employ inclusive corporate strategies that prioritise both financial gains and social impact. These methods incorporate social objectives such as poverty alleviation, environmental sustainability, and community development into their primary economic plan. Thus, MSMEs' participation in corporate social responsibility (CSR) initiatives benefits their local communities through supporting healthcare, education, and environmental conservation programmes that improve social integration, community development, and local economic growth.

Furthermore, utilising MSMEs as a strategy for sustainable industrialisation helps to spread industries throughout rural and semi-urban areas, making it crucial for the growth of regional industry. It influences people since it provides job opportunities in urban and rural areas within their vicinity.

Expanding MSMEs in rural areas has driven infrastructure development and fostered community growth in small towns and other areas. Therefore, MSMEs are not just providers of reasonably priced goods and services but innovators and catalysts for sustainable regional and macro growth. They play a crucial role in fostering social sustainability through employment generation, promoting the empowerment of marginalised populations, skill development, inclusive business practices, preservation of cultural heritage, and responsiveness to community needs.

Investing in and enabling MSMEs to reach their development potential can significantly contribute to achieving the SDG targets, including those associated with SDG 8 (Promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all) and SDG 9 (Build resilient infrastructure, promote inclusive and sustainable industrialisation, and foster innovation).

MSMEs and Environment Sustainability

MSMEs tend to operate on a smaller scale, which can result in a more economical use of resources. Adopting new manufacturing processes, technology, and management approaches could affect how an enterprise utilises its resources. Their environmental sustainability can be enhanced by promoting resource-efficient methods and practices, such as water conservation initiatives, waste reduction plans, and energy-efficient devices.

MSMEs are not just about economic and social sustainability, they are also champions of environmental stewardship. They often serve as hubs of innovation and entrepreneurship, driving the adoption of eco-friendly products and green technologies. Many MSMEs are at the forefront of eco-innovation, designing environmentally friendly production techniques, harnessing renewable energy sources, and developing eco-friendly substitutes. Their commitment to environmental sustainability is not just commendable, it's inspiring.

MSMEs could reduce their adverse effects on the environment and accelerate the transition to a low-carbon economy by encouraging green innovation. MSMEs ' environmental management techniques differ significantly from impromptu and informal methods to over sophisticated environmental management systems. MSMEs can improve their environmental sustainability by reducing pollution, minimising environmental risks, putting eco-labelling programs into place, and following regulations.

MSMEs are essential for enhancing buyers and producers in supply networks, as they promote significant environmental benefits to promote sustainability along the supply chain. As MSMEs encourage environmentally friendly purchasing practices, advertise environmentally friendly goods and services, and evaluate the ecological attributes of their competitors, their supply chains can have a less detrimental effect on the environment.

Thus, effectively utilising MSMEs' potential for sustainable industrial development is vital. Providing MSMEs with the necessary resources and support is critical to optimise their potential for sustainable industrial development. It entails facilitating access to finance, technology, and training and instituting policies and regulations that promote sustainable

business practices. MSMEs ought to be recognised and provided support as they have the potential to be vital in driving sustainable industrial growth.

MSME and Sustainable Industrial Development

Sustainable industrial development is attainable more effectively by giving impetus to the growth of the MSME sector, as it plays a vital role in propelling economic growth. It ensures sustained livelihood, fair distribution of income and balanced regional development. Given their significant contributions to innovation, entrepreneurship, and job creation, MSMEs are crucial in promoting economic growth and development. MSMEs are essential to sustainable development because of their exceptional ability to incorporate environmentally friendly practices and technological development. By creating employment opportunities, they contribute to the economy thriving, which lowers inequality and poverty. Additionally, MSMEs can set an example for larger firms by adopting green practices quickly due to their adaptability and lower scale. MSMEs can reach their full potential and promote comprehensive and sustainable industrial development by addressing market access, regulatory assistance, capacity building, and financing availability.

MSMEs play a unique role in the sustainability of the economy, particularly in fostering innovation and entrepreneurship. They are not just job creators and income generators but also catalysts for community development, skill enhancement, and the preservation of cultural heritage. Their sensitivity to community needs and inclusive business practices further underlines their significance in promoting social sustainability. Moreover, MSMEs can enhance their environmental sustainability by adhering to environmental regulations, reducing pollution, managing environmental risks, and implementing eco-labelling programmes. As essential suppliers and customers in supply chains, their impact is far-reaching.

Policy support to MSMEs in Dharwad District

The State of Karnataka has placed several initiatives and plans to promote investments and upgrade infrastructure to satisfy the requirements of Sustainable Development Goal 9: Industry, Innovation, and Infrastructure. It will aid the State in promoting sustainable industrial growth. The following provides an outline of the policies and programmes put in place by the government to promote industrial growth and portray the State as investor-friendly:

1. Following the Centre’s National Manufacturing Policy, the State has established a Manufacturing Task Force Committee to enhance the manufacturing sector's economic contribution.
2. The State introduced the New Industrial Policy 2014–19, emphasising the growth of MSMEs. The Industrial Policy 2020-25 was enacted to accelerate industrial growth further.
3. The State has implemented policies promoting textile, aerospace, and retail trade sectors to achieve diversified industrial advancement. Additional initiatives include the Karnataka Mineral Policy, the NRI Policy, and the Karnataka Renewable Energy Policy.
4. The government aims to achieve regional industrial balance and increase employment by creating National Manufacturing and Investment Zones (NIMZs) and special economic zones.
5. Road connectivity for the industrial sector is improved by constructing two economic corridors: the Bengaluru-Mumbai Economic Corridor (BMEC) and the Chennai-Bengaluru-Chitradurga Industrial Corridor.
6. The State offers incentives and concessions to businesses to encourage technological transfer and advancement, aiming to enhance their competitiveness in the global market.
7. The Suvarna Kayaka Koshlya Abhivrudhi Yojane programme provides vocational training to educated unemployed youth, aligning their skills with industry requirements.
8. Based on the Dr Nanjundappa Committee Report, the government has identified regions for promoting industrial growth, focusing on MSMEs. It includes developing industrial estates with necessary infrastructure in backward areas.
9. The 39 backward talukas are given access to the Kaigarika Scheme, which supports infrastructure, skill development, entrepreneurship development, and marketing.
10. The Pradhan Mantri Gram Sadak Yojana aims to improve rural connectivity by constructing all-weather roads.
11. The Road Works of Economic Importance Scheme focuses on linking major industrial, agricultural, and commercial hubs.
12. To address electricity and solar energy issues as part of environmentally friendly measures, the government has developed the National Electricity Policy, National Bio Gas Manure and Management Programs, and Nutana Sora Belaku Yojane.

The state has emphasised bolstering the MSME sector to pace up the state's industrial growth. Developing an environment facilitating simple access to industrial facilities and financing for the MSME sector has been prioritised. The State has made ease of doing business a top priority and has encouraged start-ups to draw investors to the industrial sector.

Specifically, the State has given Special status to North Karnataka with measures for the dispersal of industries in this region; the Government of Karnataka, by providing extensive regional trunk infrastructure in the Dharwad district, explores the potential of the current road/rail freight movement (a strategic position in the BMEC corridor, approximately 500 km equi distant from Bengaluru and Mumbai), to enhance the current industrial growth and establish an investment destination for various categories of industries in the district with the proposed industrial development of the district.

The National Master Plan for multimodal connectivity, PM Gati Shakti, aim to address the infrastructure gaps needed for the Dharwad node and take them up for development to integrate the economic zones holistically.

Notably, Dharwad district boasts several esteemed academic institutions such as the University of Agricultural Sciences, IIT, and IIIT. These institutions can contribute to advancing research and development in the area, thereby paving the way for MSMEs to adopt innovative techniques in the district. Mummigatti and Belur's industrial locations play a crucial role in developing an industrial ecosystem in the area.

Micro, Small, and Medium Enterprises (MSMEs) are crucial in the Dharwad District's industrial development and help attain sustainable industrialisation. These enterprises are operated by local entrepreneurs and form an integral part of the region's economic fabric. The sector contributes to job creation and fosters innovation, entrepreneurship, and socio-economic development.

MSMEs in Dharwad district

Hubli-Dharwad is the second-largest industrial and commercial centre in Karnataka. According to UDYAM Aadhar registration, Dharwad district has 23951 MSMEs, of which 20682 are micro, 3138 small, and 131 medium-sized businesses. The district is a hub for auxiliary businesses and small-scale enterprises. The primary products produced by the small-scale industry in the Dharwad district are agricultural goods, engineering goods, machine tools, chemicals, pharmaceuticals, and industrial valves. These industries can meet most of the district's requirements.

Table 1

Growth of Micro, Small and Medium Enterprises in Dharwad District

Period 2010-11 to 2019-20

Year	Units (numbers)	Employment (Numbers)	Investments (in lakhs)
2010-11	1643	7306	17994.69
2011-12	1377	7036	16857.83
2012-13	1102	5274	11975.62
2013- 14	1850	8657	31833.79
2014- 15	2979	13839	38716.42
2015-16	2413	14030	37681.12
2016- 17	2651	13237	36277.82
2017- 18	2415	14263	37087.84
2018- 19	2380	17886	73003.41
2019- 20	1523	8260	13294.95
Total	20333	109788	314723.49
CAGR	4.93	8.79	8.56

Source- District Industries Centre, Dharwad, 2022

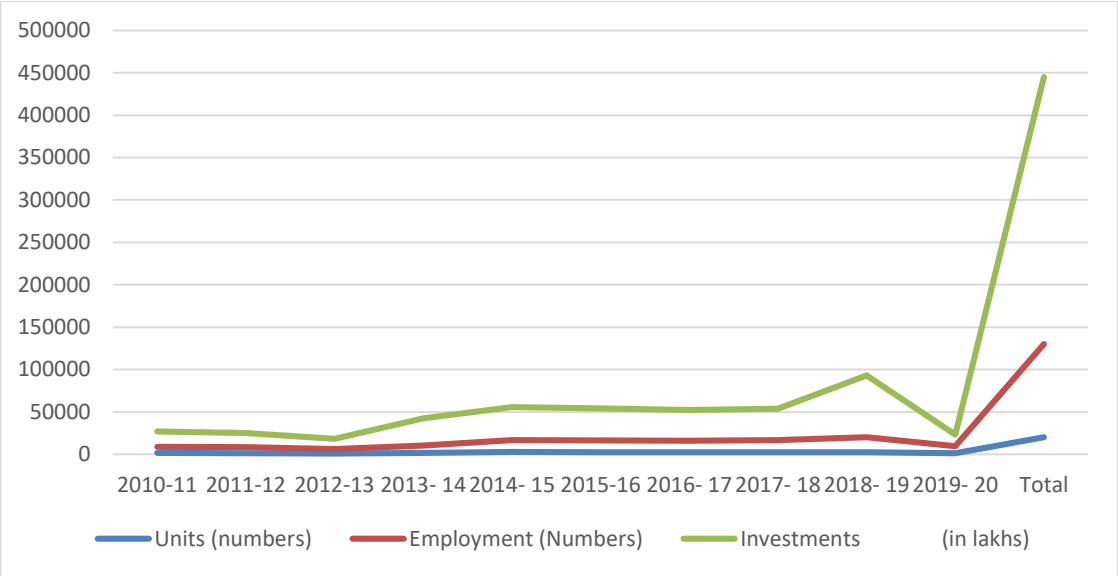

Table 1 presents data on the growth of MSMEs in Dharwad District over a decade, focusing on the number of units, employment generated, and investments made.

The observations of Table 1 are:

- The number of MSMEs fluctuated over the years, with significant variations. The highest number of units was registered in 2014-15, with 2,979 units, while the lowest registration of MSMEs in the district was in 2012-13, with 1,102 units. The total number of MSMEs in the study period accounts for 20,333 units. The CAGR for the number of units in Dharwad district is 4.93%.
- The employment generated by MSMEs also showed fluctuations, paralleling the number of units in the study period. MSMEs generated the highest employment in 2018-19, with 17,886, and the least employment opportunities provided by MSMEs in Dharwad District was in 2012-13, with 5,274 jobs. MSMEs generate a total of 109,788 employment over the study period. The CAGR for employment was 8.79%, indicating a strong growth trend in job creation.
- The investments in MSMEs in Dharwad District also saw significant variations, with notable ups and downs. The highest investment was visible in 2018-19, amounting to 73,003.41 lakhs. The lowest investment was in 2019-20, with 13,294.95 lakhs. The total investment in MSMEs in Dharwad District for the study period 2010-11 to 2019-20 accounts for 314,723.49 lakhs. The CAGR for investments was 8.56%, reflecting substantial growth in financial commitment to MSMEs.

The trends in growth of the MSME sector in Dharwad District depict that despite annual fluctuations, the overall growth trends for employment and investment are positive, with CAGRs of 8.79% and 8.56%, respectively. On average, the MSME sector has been expanding in terms of employment generation and financial investment. The data highlights the sector's potential for substantial economic impact, though the variability indicates sensitivity to broader economic factors. COVID-19 mainly impacted the decline of MSMEs in the district in 2019-20.

The growth of MSMEs can be attributed to the impetus given by the Government of Karnataka through various schemes and initiatives to promote the sector. The growth of infrastructure in the district, access to finance, marketing support and institutional support at the district level has fostered the environment for the growth of MSMEs in the Dharwad district.

Table 2

Classification of Micro, Small and Medium Enterprises in Dharwad District

Period 2010-11 to 2019-20

(units in Numbers)

Year	Micro		Small		Medium		Total	
	N	%	N	%	N	%	N	%
2010-11	1528	93.00	109	6.63	6	0.37	1643	100
2011-12	1267	92.01	106	7.70	4	0.29	1377	100
2012-13	1003	91.02	96	8.71	3	0.27	1102	100
2013- 14	1685	91.08	160	8.65	5	0.27	1850	100
2014- 15	2769	92.95	202	6.78	8	0.27	2979	100
2015-16	2120	87.86	281	11.65	12	0.50	2413	100
2016- 17	2362	89.10	275	10.37	14	0.53	2651	100
2017- 18	2120	87.78	285	11.80	10	0.41	2415	100
2018- 19	2031	85.34	340	14.29	9	0.38	2380	100
2019- 20	1450	95.21	69	4.53	4	0.26	1523	100
Total	18335	90.17	1923	9.46	75	0.37	20333	100

Source- District Industries Centre, Dharwad, 2022

Table 2 provides a breakdown of MSMEs in Dharwad District over a decade, based on the classification into micro, small, and medium enterprises. The key findings of the research on the distribution of MSMEs in Dharwad District over a decade, as presented in Table 2, are as follows:

- Micro enterprises constitute the largest share of MSMEs throughout the period. The percentage of micro-enterprises ranges from a high of 95.21% in 2019-20 to a low of 85.34% in 2018-19. Over the decade, 18,335 micro units were established in the district, making up 90.17% of the total MSMEs.
- Small enterprises show higher variability in their share than micro-enterprises. Small enterprise percentage varies from 4.53% in 2019-20 to 14.29% in 2018-19. Over the ten years, there were 1,923 small units, comprising 9.46% of the total MSMEs in Dharwad District.
- The share of medium enterprises remains relatively less stable, fluctuating between 0.26% and 0.53%. There were 75 medium enterprises in the district over the decade, accounting for 0.37% of the total MSMEs.

The findings underscore the overwhelming dominance of Micro Enterprises in the MSME sector in the Dharwad District. This finding suggests a strong preference or inclination towards establishing micro businesses, possibly due to lower entry barriers and investment requirements. The share of small enterprises shows notable fluctuations. However, the share of medium enterprises needs to be consistently higher and stable, indicating limited growth in medium-scale enterprises in the region. This trend signals a need for concerted efforts and innovative strategies to promote medium enterprises' development, which could significantly contribute to the region's economic landscape.

The classification data of MSMEs reveals the importance of micro, small, and medium-sized businesses (MSMEs) as the backbone of Dharwad district's economy. The data reveals a promising trend towards an increase in small and medium enterprises, underscoring their growing importance. Overall, table 2 indicates that micro-enterprises dominate the MSME sector in Dharwad and are highly sensitive to economic conditions. This distribution highlights the region's economic landscape, where micro-businesses are predominant. It also underscores potential areas for policy focus, presenting an opportunity for policymakers, economists, business analysts, and researchers to play a pivotal role in supporting the growth and sustainability of small and medium enterprises.

Table 3
Distribution of MSMEs in the district for 2007-2020: Social Category

Category	General		SC		ST		OBC		Minority		Others		Physically Challenged		Total	
Year	Nos	%	Nos	%	Nos	%	Nos	%	Nos	%	Nos	%	Nos	%	Nos	%
2010-11	727	29.46	452	18.31	139	5.63	822	33.03	58	2.36	268	10.86	2	0.08	2468	100
2011-12	381	23.18	242	14.73	138	8.40	525	31.96	58	3.53	297	18.08	2	0.12	1643	100
2012-13	515	37.40	138	10.02	85	6.18	492	35.72	26	1.89	121	8.79	0	0	1377	100
2013-14	566	51.37	77	6.98	46	4.17	384	34.85	2	0.18	27	2.45	0	0	1102	100
2014-15	716	38.70	137	7.41	69	3.74	777	42	20	1.08	130	7.02	1	0.05	1850	100
2015-16	1095	36.76	565	18.97	150	5.03	998	33.50	33	1.10	136	4.57	2	0.06	2979	100
2016-17	1181	48.95	238	9.86	109	4.52	885	36.67	0	0	0	0	0	0	2413	100
2017-18	1358	51.23	213	8.03	85	3.20	995	37.54	0	0	0	0	0	0	2651	100
2018-19	1215	50.31	238	9.86	87	3.60	875	36.23	0	0	0	0	0	0	2415	100
2019-20	1121	47.10	279	11.72	115	4.83	865	36.35	0	0	0	0	0	0	2380	100

Source- District Industries Centre, Dharwad, 2022

Table 3 illustrates the distribution of MSMEs by social category: general, scheduled castes (SC), scheduled tribes (ST), other backward classes (OBC), minority, and others in the Dharwad district from 2010–11 to 2019–20.

Table 3 provides a detailed picture of the distribution of MSMEs in Dharwad District across various social categories over a decade. The categories include General, Scheduled Castes (SC), Scheduled Tribes (ST), Other Backward Classes (OBC), Minority, Others, and Physically Challenged.

The table reveals some striking patterns in the distribution of MSMEs across social categories in Dharwad District over a decade:

- The General category consistently holds the lion's share of MSMEs each year, with its highest percentage reaching a staggering 51.37% in 2013-14 and its lowest dipping to 23.18% in 2011-12.
- The SC category's share in the MSME sector is dynamic, showcasing its entrepreneurial abilities with participation varying from a high of 18.97% in 2015-16 to a low of 6.98% in 2013-14.
- While consistently holding a smaller share than other categories, the ST category maintains a stable presence in the MSME sector. The highest percentage was 8.40% in 2011-12, and the lowest was 3.20% in 2017-18. This stability underscores the ST community's enduring contribution to the district's MSME landscape.
- OBCs, with a consistently large share of MSMEs, often second only to the General category, play a pivotal role in the MSME sector throughout the period. The highest percentage was 42% in 2014-15, and the lowest was 31.96% in 2011-12. Their substantial presence underscores their importance in the district's MSME sector.
- The Minority category's participation is generally minimal, with the highest percentage being 3.53% in 2011-12; post 2016-17 onwards, no data records are maintained.
- The "Others" category shows varied participation, with the highest percentage being 18.08% in 2011-12 and the lowest being 2.45% in 2013-14. The fluctuating share reflects the diverse composition of the MSME sector.
- The Physically Challenged consistently have negligible representation in the MSME sector. The highest recorded percentage is 0.12% in 2011-12, with many years showing 0%.

The distribution of MSMEs by social category in Dharwad District reveals a dominance of the General and OBC categories, with significant but fluctuating participation from SCs and consistently low participation from STs and minorities. Conversely, the variations in the SC and ST categories highlight fundamental issues that require interventions to ensure equitable progress. The minimal representation of physically challenged individuals highlights a need for targeted interventions to ensure inclusivity and equitable growth in the MSME sector. The overall trends suggest that with substantial participation from some groups, clear disparities have to be resolved to foster a more

inclusive entrepreneurial environment. This highlights the need for policies that can adapt to the changing landscape and support stability and growth across all social groups, as for the observed variations and trends.

Table 4
Distribution of MSMEs: Gender participation
Period 2010-11 to 2019-20

Year	Male	% share	Female	% share	Total	%
2010-11	1400	85.20	243	14.80	1643	100
2011-12	1042	75.67	335	24.33	1377	100
2012-13	874	79.31	228	20.69	1102	100
2013- 14	1422	76.86	428	23.14	1850	100
2014- 15	1971	66.16	1008	33.84	2979	100
2015-16	1828	75.75	585	24.25	2413	100
2016- 17	2125	80.15	526	19.85	2651	100
2017- 18	1841	76.23	574	23.77	2415	100
2018- 19	1716	72.10	664	27.90	2380	100
2019- 20	1134	74.45	389	25.55	1523	100

Source- District Industries Centre, Dharwad, 2022

Table 4, a crucial component, presents a comprehensive view of the gender participation in the Micro, Small, and Medium Enterprises (MSMEs) sector in the Dharwad district over a ten-year period, from 2010–11 to 2019–20, by illustrating the total number and percentage share of male and female entrepreneurs.

Throughout the period under study, male participation has consistently dominated the MSME sector, with the highest percentage share of male participants recorded at 85.20% in 2010-11, and the lowest at 66.16% in 2014-15. This persistent male dominance underscores the need for gender inclusivity and policy interventions to promote female entrepreneurship.

Female participation shows notable variation over the years. The highest percentage share of female ownership of MSMEs was 33.84% in 2014-15, and the lowest was 14.80% in 2010-11. This increase suggests that more women enter the MSME sector, possibly due to enhanced support mechanisms, empowerment initiatives, or changing socio-economic conditions.

The gender participation in MSMEs in Dharwad between 2010–11 and 2019–20 reveals a significant and growing proportion of female engagement, marking a positive shift despite the traditional dominance of male entrepreneurs. The upward trend in female participation, particularly in 2014-15, highlights positive changes towards gender inclusivity in the MSME sector. However, the overall dominance of male-owned MSMEs suggests that there are still significant gender disparities that have to be addressed to achieve more balanced and inclusive growth in the entrepreneurial landscape. The rising percentage of female participation indicates the MSME sector's progress toward gender inclusion. However, this trend towards gender inclusion is a positive development, but it requires sustained efforts and focused initiatives to ensure its continuation. Such a shift will lead to a more vibrant and equitable entrepreneurial environment and contribute to the region's economic growth.

Part II
Status of Sustainable Industrial Development in Dharwad District

MSMEs and Economic Sustainability in Dharwad District

The MSMEs in Dharwad District's s are resilient enough to endure economic fluctuations and produce a wide range of products and services. It supports economic stability and prosperity while catering to various market sectors. MSMEs are at the forefront of entrepreneurship and innovation because of their capacity to swiftly adapt to changes in the market by introducing new technologies. It offers a positive outlook for the district's financial future. As seen in Table 1, the

number of MSMEs fluctuated over the years, with significant variations. The CAGR for the number of units in Dharwad district is 4.93%. However, despite periodic fluctuations, the MSME sector's growth in Dharwad District demonstrates that overall growth patterns for investment and employment are strong, with CAGRs of 8.79% and 8.56%, respectively. The district has seen a consistent increase in the rate of investment in MSMEs and the creation of job opportunities within the MSME sector. The data highlights the sector's potential for substantial economic impact, though the variability indicates sensitivity to broader economic factors.

The findings in Table 2 underscore the overwhelming dominance of Micro Enterprises in the Dharwad District's MSME sector, making up a significant 90.17% of the total MSMEs. This prevalence indicates a strong preference for establishing microbusinesses, likely due to their lower startup costs and entry restrictions. The proportion of small businesses, at 9.46% of the total MSMEs, presents a noticeable variation. The limited growth in medium-scale businesses, constituting a mere 0.37% of the total MSMEs, underscores the trend in the growth rate of small and medium-sized businesses. Table 2 provides a comprehensive view of the MSME sector in Dharwad, revealing the high sensitivity of micro-enterprises to economic fluctuations. This distribution vividly depicts the region's economic landscape, where micro-businesses are the norm. It also highlights potential areas for policy focus, presenting an opportunity for policymakers, economists, business analysts, and researchers to play a pivotal and empowering role in supporting the growth and sustainability of small and medium enterprises.

Though economic sustainability is attained through MSMEs, volatility in the growth of MSMEs is visible in the study period. However, a positive trend is seen in employment generation and investment rates in the district.

MSMEs and Social Sustainability in Dharwad District

Table 3, presented above, details the Dharwad District's MSMEs distribution by social category. The findings of the table depict dominance of the general category, with a range of 45% to 50% ownership, and OBC, with 31% to 42%. The representation of the ST category, with less than 10% ownership of MSMEs, is at lower rates than the SC category, whose ownership ranges from 18.97 to 6.98%. The differences between the SC and ST categories draw attention to underlying problems that have to be addressed to guarantee equitable advancement.

Physically challenged entrepreneurs are underrepresented in the MSME sector, emphasising the need for focused interventions to promote inclusivity and fair growth. Overall trends indicate that to promote a more inclusive business environment; glaring gaps must be resolved with significant engagement from all categories.

Table 4, a crucial component that illustrates gender equality in economic activities, presents gender participation as entrepreneurs in the micro, small, and medium enterprises (MSMEs) sector in the Dharwad district. This data provides a stark overview of gender engagement in this sector, highlighting the existing gender disparities that need to be addressed.

Male ownership in the MSME sector has consistently outperformed female participation over the survey period, with the largest percentage share of male participants reported in 2010–11 (85.20%) and the lowest in 2014–15 (66.16%). The continued dominance of men underscores the need for gender inclusion and legislative actions to support and encourage female entrepreneurship.

There has been a noticeable shift in female engagement in MSMEs ownership. The proportion of female ownership of MSMEs ranged from 14.80% in 2010–11 to 33.84% in 2014–15. This translates to a significant increase in women-owned MSMEs, from 243 in 2010-11 to 1008 in 2014-15.

Over time, the percentage of female participants has seen a noticeable shift. The proportion of female ownership of MSMEs ranged from 14.80% in 2010–11 to 33.84% in 2014–15. The rise implies that more women are entering the MSME sector, which could be through improved support systems, initiatives for women's empowerment, or changing social and economic conditions. It's important to note that these changes may also be influenced by increased access to education and training for women, or the rise of industries more conducive to female entrepreneurship.

The observations of the findings on attaining social sustainability through MSMEs in the Dharwad district are significant. They present dominance of the General category and minorities, further representing the growth of MSMEs. Though female representation in MSMEs is showing a positive change, it is still dominated by Male entrepreneurs. The

overall dominance of male-owned MSMEs suggests that there are still significant gender disparities that need to be addressed to achieve more balanced and inclusive growth in the entrepreneurial landscape.

MSMEs and Environment Sustainability in Dharwad district

The district of Dharwad is a testament to the innovative practices of micro-enterprises. With their limited resources, these micro-enterprises are at the forefront of environmental sustainability. They implement lean manufacturing methods to reduce waste and optimise resource usage. By sourcing their raw materials locally, they significantly cut down on carbon emissions from logistics and transportation. Their strong community ties make them more aware of and involved in addressing local environmental issues, further enhancing their environmental impact.

The prevalence of microenterprises in Dharwad district is a beacon of hope for environmental sustainability. Their practices encourage resource efficiency and creativity and foster community involvement and adaptation to changing environmental norms.

Challenges hindering the growth of MSMEs in Dharwad district- in attaining Sustainable Industrial development

1. MSMEs in Dharwad District need more access to finance. Many small businesses need more collateral to secure loans or financial assistance due to their size, lack of collateral, or limited credit history.
2. Technology adoption is Another impediment hampering the sustainable growth of MSMEs in the district. The district's MSMEs are unable to grow sustainably due to outdated technologies. The Dharwad district's MSMEs suffer from technological backwardness, resulting in inefficient production processes, increased production costs, and a lack of market for the goods produced, thus impeding its growth and performance.
3. The availability of a skilled workforce is vital for the success of MSMEs. Many small firms need help finding competent and trained labour, hampering their growth potential. This can be due to lower pay packages offered to the workers. The attrition level of labour in the MSMEs sector is high, impacting the performance of the firms.
4. The absence of environmentally friendly practices significantly impacts the development of MSMEs. Due to their heavy reliance on natural resources, small and medium-sized businesses are severely threatened by the negative consequences of environmental deterioration.

Way forward-

1. To address the financial constraints on MSMEs, the government and financial institutions should strengthen institutional financial support by introducing specialised financial products and services tailored to the needs of MSMEs in the form of low-interest loans, grants, and financial literacy programs to help entrepreneurs manage their finances effectively.
2. By embracing digital tools and platforms, MSMEs can enhance their operational efficiency, improve productivity, and expand their reach to new markets. The government and industry associations must proactively promote digital literacy and provide training programmes to enable MSMEs to leverage technology effectively.
3. Thus, collaborative efforts between educational institutions, industry associations, and government bodies can provide solutions and further bridge this gap by providing vocational training programs to labourers and encouraging skill development initiatives to enhance the employability of people in the district. The MSMEs will benefit and empower youth with employable skills, increasing employment opportunities.
4. Furthermore, embracing environmentally friendly practices and adopting sustainable business models can contribute to MSMEs' long-term viability and success. By implementing energy-efficient processes, reducing waste, and promoting eco-friendly products, these enterprises can minimise their environmental impact and cater to the growing demand for sustainable products and services. The government can incentivise and support MSMEs adopting green practices by providing subsidies, tax benefits, and technical assistance.

Conclusion

It is essential to provide MSMEs full support to ensure sustainable industrial development in the Dharwad District. The district promotes MSMEs in their efforts to achieve sustainable industrial growth. Findings from data analysis indicate that, throughout ten years, micro firms constituted the majority of all enterprises in Dharwad. These enterprises stand out as the foundation of the district's economy, with 18,335 units. Small businesses have risen substantially during the period, with 1,923 units. In the last ten years, 75 units have been identified as medium-sized enterprises. Because of this perceived stability, medium-sized enterprises may be more resilient to shifts in the economy than smaller ones,

even though they might be fewer in number. Nonetheless, the industry has culminated in a notable increase in investment levels and opportunities for employment.

It is observed that there is a disparity in the MSME sector regarding entrepreneurship, with the General category dominating and OBC closely behind. The SC/ST category's relatively low participation challenges the district's social sustainability. While male entrepreneurs still dominate the sector, a gradual increase in the number of female entrepreneurs is observed over time. Therefore, measures must be taken to enhance social inclusivity by increasing the participation of all groups in the MSME sector. Environmental sustainability among MSMEs in the district should increase awareness among entrepreneurs about adopting environmentally friendly practices and adherence to policies through institutional assistance.

In conclusion, developing a more environmentally and socially conscious economy necessitates sustainable industrial development. It can create a more sustainable future where social progress and environmental preservation coexist with economic growth by incorporating sustainable practices and technologies, such as renewable energy sources, resource efficiency, and sustainable supply chains. Thus, sustainable industrial development can be attained by fostering support by providing access to finance and technology, creating a skilled workforce, and promoting environmentally friendly practices in the MSME sector in the Dharwad district. Empowering and nurturing MSMEs can create a thriving economy, generate employment opportunities, and foster a culture of innovation and sustainability in Dharwad District.

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