

Changing Pattern of Employment in Granite Industry – A Macro Level Study in Khammam District

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Abstract

The granite industry plays a significant role in Telangana's industrial economy, contributing substantially to export earnings and employment generation. Khammam district, known for its rich deposits of black and pink granite, has emerged as a major cluster for quarrying and processing activities. The present study analyses the employment structure, trends, and challenges of the granite industry in Khammam district at a micro level. The study has been used the primary and as well as secondary data. Primary data has been collected from the 60 sample granite factories along with field observations and the secondary data has been gathered from official reports of the state and central governments and a well as the profiles of the granite industry etc. This study has made an effort to identify some of the issues relating to the granite industry with the help of secondary data. The study observed the all the granite units applying from the surrounding areas of Khammam urban and rural. Khammam district has good number of granite units due to the availability of raw material. The data was collected from small scale granite units with relation to some of the aspects, number of units, workers, nature of works, skilled and unskilled nature of granite units etc have been taken. The secondary data consisted of the published reports based on granite quarries kept in view. The study identifies changes in employment patterns within the duration period of 2015 to 2024 around 10 years composition of different granite units.

Keywords: Employment, wages, skill, raw-material, quarries, small scale, labour welfare

Introduction:

The granite industry has its own or natural role in the overall development of industrial sector and as well as in the overall economic development of global countries. It has the one of the key roles playing in creation of infrastructure, construction, and even exporting the valuable finished and raw-material and earning the significant share of foreign exchange in addition to creation of millions of jobs to skilled and unskilled labours. In many constructions activities granite is widely used in buildings, monuments, flooring, kitchen countertops, and decorative architecture. Its economic, industrial, and social importance extends across multiple levels. At the global level, the granite industry contributes considerably to the global natural stone market. The countries like China, India, Brazil and Italy are dominating in producing and usage and even exporting. The international demand for granite is gradually increasing by rapid urbanization, luxury housing trends, and infrastructural development in all

over the world. Global level, the granite industry has been creating millions of jobs for the skilled, unskilled and other marketing segments too, mainly in quarrying, processing, transportation, and design industries. In addition to these facts the granite sector is essential for developing countries, due to itself generates valuable foreign exchange through exports. Environmental sustainability has also become a focus globally, with the industry moving toward eco-friendly quarrying and waste management practices.

The Indian Granite industry is gradually growing after the globalization and in the recent years it is very familiar that Indian granite industry has been treating land mark for global granites. The growth trends of the granite industry show strong probable for the future. Because of the Indian stones are gaining the demand from all over the world especially 20.0 percent of exports alone to America and 18.0 percent to China these nations are conventionally consider as the super power. On the other hand, Indian stones are relatively more quality and shades but at the same time comparatively lower the prices, as such India holds a major share of the global market. In 2023, the global granite market was valued at approximately \$18.5 billion and is projected to rise up-to \$23.3 billion by 2032, and the compound growth rate be estimated as 2.3 percent, on the other side granite demand is raised to 4.1 percent in the recent 2023-24 and expected growth rate is 6.2 percent by the end of 2033-34 season as per the granite export data. At present 1,283 Indian exporters had supplied granite to 3,245 international buyers, totaling 55.9K in exports. India's primary exporting countries are USA, China, Japan, and France, highlighting the country's strong global presence. The government's "Make in India" initiative is further boosting the industry by promoting manufacturing and export-oriented growth. By initiation of ongoing policy support by the governments, rising international demand, and expanding production capacity, India's granite sector is balancing to make a significant contribution to the national economy.

The granite industry mainly concentrated particularly in Telangana, Andhra Pradesh, Tamil Nadu, and Karnataka at state level. These states possess rich granite reserves of different colors and qualities, such as black, pink, and galaxy varieties that are internationally famous. In Telangana state Khammam and Karimnagar districts are landmark for "Black Galaxy" granite on the other hand Chimakurthy, Warangal and even Karimnagar regions producing the export quality mainly to China, Europe and USA. The industry contributes significantly to state revenue through royalties, taxes, and export duties. It also provides employment to local populations along with migrated workers from various states, and supports ancillary industries and sector like transport tool fabrication and construction sector too. In states like Telangana, the granite sector has helped promote industrialization in rural areas, as it led arrest the migration from rural to urban centers.

Review of Literature:

S. Torrejón Pérez (2025) Indian employment changed during 2011-12 to 2019-20, showing that employment growth trends are biased towards lower medium and high paid jobs rather than middle and above medium class rather than white collar the employment opportunities in India sifting towards U-shaped divergence. Indian Granite Industry Portal (2021), stated that in the South Indian granite quarries a large share of working operations are under risky nature these works are mainly temporary, lot of workers are indebted to contractors working conditions are almost in the dark cities, child labour and women also working in this industry. Indian environment Portal (2023) it was observed that, problems of the granite workers are in artificial problems because of the granite industry managements are syndicating nature in the providing the employment nature as per the study observation. Timesofindia,

Samdani (2025), an interesting news from the granite industry of Karimnagar in 2021 a major share of granite unskilled workers has lost their livelihood because of China stopped its imports from Indian Granite, this was not only effect on Karimnagar locations but also other areas of southern Indian states. Jayalakshmi M. K. (2025) that granite industry in Andhra Pradesh facing the shortage of labour, because of the availability of local labour is scarcity and migrated labour is too cost to the manufacture finished granites. Dr. Ramakant Dixit (2025), the study has been observed in Rajasthan stone industry that granite workers are almost informal, they are not link to the direct to owners of the granite factories they are third party workers this process is continuing since the years in Indian granite industry. Vasu Jalari and Dr. M. Devarajulu (2013), the granite industry in Andhra Pradesh (Chittoor district), the labour related issues are at mighty level, mainly bonded, more working hours, insecure, informal way of appointment. As the result the manpower has been shifting to the alternative source of employment because of, they were ignored since the decades. The review of literature on issues of granite works by the different sources, they find the many issues with relating to labour problems at micro level and macro level, but the changing pattern of employment is not highlighted, this study made an effort to study of changing pattern of employment in the granite industry of Telangana in Khammam district based on the published data sources.

Research Problem:

The granite industry is more risky nature relatively than other industries, the nature of works are very danger to the unskilled labours, the working natures are quarrying mainly done by the machinery and operating by the skilled labour, processing mainly cutting, polishing and finishing are mainly labour required area and the transport and marketing mainly loading and unloading are labour are depending on workforce. Even though they are facing the number of economic, social and health issues while in the working. On the other hand, the employment pattern is not stable for the workers because of many of the workers are appointed by third party sources. On the other hand, a majority of granite owners are giving to more importance to capital and modern technology as such the working labours are displaced by the machines, in these backdrops this study made an effort to identify the changing pattern of employment in granite industry a micro level during the 10 years how the employment has been displaced by the machinery is the main objective of the study.

Methodology and Objectives

The data base for the study purely used the secondary data. The secondary data gathered from district Industrial Centers (DIC) and ministry of quarrying and mining through online mode. The data mainly on the nature of granite units, employment trends during the period of study as adopted 2015 to 2024 given as 10 years duration. In between these study points how the granite units in the surrounding area of Khammam and the rural mandals of Nelakondapalli, Thirumalaipalem, Mudhigonda and Kamepalli are the core areas to the granite industry. The study used the simple average and percentage tables and those were derived from the main source of data and the study has makeover requirement of the research article. The study has been adopted the mainly Two objective to study the nature of employment of granite industry of Khammam district and to examine the employment trends during the study period of 2015 to 2024 of 10 years period. Results and Discussion as given in the following paragraphs with the help of derived 6 tables are as follow.

Table 1
Overview of Granite Industry Units in Khammam District in 2015

Type of Unit	No. of Units (Approx.)	Percentage
Quarrying Units	180	25.0
Slab Cutting Units	340	47.2
Tile Manufacturing Units	150	20.8
Export Agencies & Traders	50	6.9
Total Units	720	100.0

Source: District Industries Centre (DIC), Khammam & local industry estimates, 2024.

Table – 1 presents the structure of Khammam district’s granite industry in 2015, highlighting its dominant operational segments. Slab-cutting units formed the largest share, accounting for nearly half of all establishments, indicating a strong mid-stream processing base. Quarrying operations constituted one-fourth of total units, reflecting the district’s substantial primary extraction activity. Tile-manufacturing units made up about one-fifth, suggesting the presence of value-addition but at a relatively smaller scale compared to slab processing. Export agencies and traders represented a modest proportion, illustrating limited direct international market interface despite significant production capacity. Overall, the data portrays a sector focused primarily on extraction and slab processing, with comparatively lower representation in finished-product manufacturing and export-oriented functions.

Table 2
Employment Trends in Granite Industry in Khammam
During 2015–2024

Year	No. of Units	Employment	Remarks
2015	720	45000	Industry peak period
2018	650	42000	Demand decline begins
2020	500	28000	COVID lockdown impact
2022	420	33000	Partial recovery
2024	400	36200	Current estimate

Source: District Industries Centre (DIC), Khammam & local industry estimates, 2024.

Table – 2 depicts on the overall employment trends of the granite units in Khammam district. The employment has been gradually dropping since its peak level to present situation. It is a trajectory of employment and operational strength within Khammam’s granite industry, offering insight into its cyclical dynamics and structural vulnerabilities. In 2015, the industry operated at its peak with 720 units employing approximately 45,000 workers, reflecting high market demand and robust production linkages. However, by 2018 both the number of units and employment figures began to contract, indicating early signs of market saturation and declining external demand. The most significant shock occurred in 2020 during the COVID-19 lockdowns, when the number of functioning units fell to 500

and employment dropped sharply to 28,000. This period underscores the industry’s sensitivity to global supply chain disruptions and mobility restrictions.

A gradual rebound is visible in 2022, where employment rose to 33,000 despite the number of units further declining. This suggests consolidation within the sector, with surviving firms expanding their workforce or stabilizing operations. By 2024, the industry comprises 400 units employing around 36,200 workers, pointing to an evolving structure marked by fewer but relatively more resilient enterprises. Overall, the data highlights long-term challenges such as fluctuating demand, external shocks, and structural downsizing, while also showing signs of adaptive recovery—key considerations for policy intervention and sectoral sustainability analysis in a doctoral research context.

Table 3
Distribution of Employment in Granite Industry (2024)

Worker Category	No. of Workers	Percentage	Nature of Work
Skilled Workers	8,200	22.0	Polishing, cutting, machine operations
Semi-skilled Workers	12,800	35.0	Loading, measuring, finishing, transport
Unskilled Workers	15,200	43.0	Lifting, cleaning, quarry support
Total Employment	36,200	100%	—

Source: District Industries Centre (DIC), Khammam & local industry estimates, 2024.

Table 3 provides a clear picture of the labour composition within Khammam’s granite industry in 2024, revealing its heavy dependence on physically intensive and low-skilled work. Unskilled workers form the largest segment, accounting for 43% (15,200 workers). Their main activities of work lifting, cleaning, and quarry support indicate that much of the industry still relies on manual labour, especially in quarrying operations where mechanisation remains limited. Semi-skilled workers constitute 35% (12,800 workers), performing tasks such as loading, measuring, finishing, and transport. This category bridges manual and machine-assisted processes, reflecting the transitional nature of production practices. Skilled workers represent only 22.0 (8,200) workers, yet they handle technically demanding tasks like cutting, polishing, and operating machinery. Their relatively smaller proportion highlights a skill-gap within the industry and indicates potential constraints in technological advancement, productivity enhancement, and quality control. Overall, the distribution suggests a labour-intensive structure with limited upskilling, pointing to opportunities for vocational training, mechanisation, and improved safety standards—critical considerations for policy formulation and industry modernization in a research context.

Table – 4
Annual & Overall Changes in Granite Units and Employment in Granite Industry of Khammam During 2015–2024

Year	Operating Units	Reduction	Percent	Employment	Reduction	Percent
2015	720	—	0	45,000	—	0
2018	650	-70	-9.7	42,000	-3,000	-6.6
2020	500	-150	-23	28,000	-14,000	33.3

2022	420	-80	-16	33,000	+5,000	17.86
2024	400	-20	-4.7	36,200	+3,200	9.7
During the Period	the	320	-44.12	During the Period	8800	19.2

Source: District Industries Centre (DIC), Khammam & local industry estimates, 2024.

Table-4 presents a decade-long quantitative assessment of changes in operating granite units and employment levels in Khammam district. The data captures both annual fluctuations and long-term transformations, providing a clear picture of how external market forces and internal industry dynamics shaped the sector from 2015 to 2024. In 2015, the granite industry was at its strongest, with 720 operating units and a workforce of 45,000. This peak period reflects high export demand, favorable market conditions, and widespread operational activity across quarries, slab-cutting units, and tile manufacturing units. From this baseline, the sector began to exhibit early signs of decline by 2018. Operating units reduced by 70 (-9.7) percent, while employment dropped by 3,000 workers (-6.6) percent. The decline during this period can be attributed to reduced domestic and international demand, intensified competition, and rising operational costs.

The most significant contraction occurred during the 2018–2020 period. Operating units decreased from 650 to 500, reflecting a steep reduction of 150 units (-23) percent. Employment witnessed an even sharper fall of 14,000 workers, equivalent to a 33.3 percent decline. These losses are directly linked to the COVID-19 pandemic, which severely disrupted production processes, export channels, and labour availability. Restrictions and lockdowns led to temporary closures of many units, and large-scale migration of workers further deepened employment losses. A partial recovery is evident between 2020 and 2022. Although units continued to decline by 80 (-16) percent, employment increased by 5,000 (17.86) percent. This deviation is suggested that surviving units consolidated operations and rehired workers as the industry stabilized post-pandemic periods. Demand recovery, improved logistics, and gradual reopening supported this positive shift.

By 2024, the number of operating units fell slightly to 400 (-4.7) percent, but employment rose further to 36,200 (9.7) percent. This indicates increased operational efficiency, stronger labour absorption by existing granite units, and renewed market confidence despite a smaller industrial base. Over the entire 2015–2024 period, the industry lost 320 units (-44.12) percent and 8,800 workers (-19.2) percent. This long-term reduction reflects structural downsizing, market fluctuations, and flexibility through consolidation rather than expansion.

Major Findings:

Significant decline in granite units: The number of operating units decreased from 720 in 2015 to 400 in 2024, marking a 44.0 percent reduction. This indicates structural contraction due to market slowdown, rising costs, and pandemic-induced disruptions. Overall employment decline with partial recovery: Workforce levels fell from 45,000 to 36,200 during the decade, reflecting a 19.0 percent reduction. While employment plummeted sharply in 2020, moderate recovery occurred after 2022 as surviving units expanded their labour intake. High dependence on unskilled labour: In 2024, 43.0 percent of workers belonged to the unskilled category, confirming that the industry remains labour-intensive with limited mechanisation in quarrying and support work. Shift toward consolidation: Even as the number of

units decreased, employment increased between 2020 and 2024, indicating that fewer but stronger units absorbed a larger share of the workforce. Impact of external shocks: COVID-19 created the greatest disruption, leading to mass layoffs and closure of small units. Demand fluctuations and export instability also shaped workforce patterns. Skill imbalance: Only 22.0 percent of workers were skilled, revealing a persistent skill gap affecting productivity and technological adoption.

Conclusion:

The study reveals that the granite industry in Khammam has undergone substantial structural changes over the last decade, driven by both market pressures and external shocks. While 2015 marked a period of peak activity, subsequent years witnessed a contraction in operating units and employment, most severely during the COVID-19 pandemic. However, the recovery phase post-2020 shows resilience, with consolidation among larger units and partial restoration of employment levels. Despite this, the sector remains dominated by unskilled labour and continues to face challenges related to mechanisation, skill shortages, and unstable demand. Addressing these gaps is essential for sustainable growth and improved labour welfare. Skill development programmes to enhance the availability of trained cutting and polishing workers. The granite units have to adopt the safe and semi-mechanized technologies to reduce disadvantageous situation while in the working locations. To provide the healthy environments it must be strengthen labour regulations to ensure job security for informal and contract workers. By the formulation of better policy for modernization, export diversification and re survival of small-scale granite units

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