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SOCIO-ECONOMIC CONDITIONS OF RED STONE QUARRY WORKERS OF IN MONSOON SEASON – A STUDY IN KANNUR DISTRICT, KERALA

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Abstract

The monsoon season significantly impacts the socio-economic environment of quarry workers by presenting a multitude of challenges to their livelihoods and overall well-being. This paper unveils the nuanced dynamics surrounding quarry labour during the monsoon, seeking to uncover the intersecting factors that shape workers' experiences and vulnerabilities. Through a comprehensive analysis of demographic profiles, income fluctuations, work conditions, andsocioeconomic effects on families, the researcher aims to illuminate the complex realities faced by quarry workers in the monsoon season. Study uses quantitative method to investigate the social implications of the monsoon season, including how it affects social cohesiveness, family well-being, and support systems within the community. The findings showed the concerns of safety and security measures, seasonal unemployment and economic constraints which need to be addressed to promote resilience and equity among quarry workers amidst climatic uncertainties. Authors conclude by highlighting the critical need for focused interventions to support quarry workers in the face of environmental adversity and adding a deeper understanding of the socio-economic dynamics in the workplace during the monsoon season.

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Introduction

Quarries play a pivotal role in shaping our constructed environment, supplying essential raw materials such as crushed rock and gravel that form the backbone of our infrastructure, buildings, and roadways. Beyond their economic contributions, quarries influence community growth,

environmental landscapes, and social structures. While the economic benefits of quarry operations are undeniable creating jobs for skilled and unskilled labourers and generating local revenue there are broader implications that require attention. By providing a regular supply of needed raw materials, quarries help sustain ongoing construction projects and reduce dependence on limited resources. Innovative restoration techniques can transform damaged quarries into vibrant ecosystems, thereby supporting long-term growth. However, ensuring long-term viability in this sector calls for strong community engagement and careful quarry management. This research specifically aimed to assess the income levels and working conditions of quarry workers throughout the year, with an emphasis on the socio-economic challenges faced during the monsoon season. Seasonal variations, particularly the monsoon, drastically affect quarry operations, leading to reduced work hours, safety risks, and income instability, which in turn impacts the livelihoods of workers and their families. By evaluating these conditions, the study highlights the vulnerabilities of quarry workers during adverse weather conditions and identifies the broader social and economic effects on their households. Additionally, the emphasis on routine maintenance of equipment, strict compliance with safety standards, and the implementation of comprehensive worker protection measures underscores the critical importance of ensuring safe and efficient quarry operations. The research provides insights into the socio-economic conditions of quarry workers, particularly during the monsoon season, and proposes suitable interventions to enhance their quality of life.

Review of Literature

Kumar Veerendra and colleagues (2020) highlight the mining industry as one of the earliest human pursuits, providing crucial resources for modern society. However, the socio-economic conditions of mining workers are often precarious, and they face numerous hazards in their work environment. Quarry workers, in particular, endure dangerous working conditions. Those in the mining industry typically live and work in challenging environments, often in remote or underdeveloped areas. The work is physically demanding and hazardous, with low wages, job insecurity, limited access to healthcare, education, and inadequate housing. Daliak Nadila et al. (2019) recommend that both the government and the quarry industry develop strategic plans aimed at improving worker welfare and enhancing competitiveness through legal reforms. The importance of worker competitiveness in the mining sector calls for a comprehensive financial support plan. This includes outlining the key components of financial aid, securing additional funding, evaluating models to sustain funding, and designing a long-term strategy for human resource development in the mining industry. Botha Doretta et.al (2018) found the socio-

economic effects of mine closures. Paying special attention to how mine workers' dependency on their jobs at a mine affects their capacity to support themselves. Existing literature review highlights the need to research the socio-economic conditions of quarry workers particularly in regional levels and focus on broader socio-economic conditions that intersect with the wellbeing. Hence the current paper attempts to evaluate the socio-economic situation throughout the monsoon season and suggest measures for the welfare of the quarry workers.

Materials and Methods

A questionnaire prepared in the light of objectives of the study was used to collect primary data. Convenient sampling method was applied to recruit fifty quarry workers from Kannur district of Kerla. This approach involves selecting participants according to their feasibility and availability. Collected data was analysed in the SPSS Programme (version 15) and data was explained through graphs and tables using simple frequencies and percentages. Informed consent was obtained from all those who are involved in the study and researcher prioritised maintaining the confidentiality of the participant's data.

Results and Discussion

Table No.1 Demographic profile of the participants

SI.NO	Characteristics	Frequency	Percent
1	**Age of the Respondents**		
	a) 18-25 years	7	14
	b) 25-35 years	19	38
	c) 35-45 years	14	28
	d) 45-55 years	10	20
	Total	50	100
2	**Gender of the Respondents**		
	a) Male	47	94
	b) Female	3	6
	Total	50	100
3	**Education of the Respondents**		
	a) Primary	18	36
	b) Highschool	28	56

	c) Higher Secondary	3	6
	d) Degree	1	2
	Total	50	100

Most of the quarry workers were in the age group of 25 to 35 years. One can also observe that fewer respondents are 45-55 years old. As quarry work involves heavy manual work only young people can resist the burden of this physical work. A total of 94% were male and only 6% were female. These findings corroborate the conclusions of Aliyyu Abiola Abdulraheem et. al (2023) stating, the quarry and construction industries have a strong male predominance. A little over half of total (56%) completed high school, and a significant portion (36%) had primary education. Interestingly, the literacy rate was 100%. This finding aligns with the high literacy rate in the state of Kerala where this study was undertaken.

Table No.2 Working Conditions

SI NO.	Socio-economic Conditions	Frequency	Percent
1	**Satisfaction of salary**		
	a) Yes	50	100
	b) No	0	0
	Total	50	100
2	**Minimum Working hours**		
	8 Hours	50	100
3	**Frequency of respondents who got injured during work**		
	a) Sometimes	7	14
	b) Often	4	8
	c) Never	39	78
	Total	50	100
4	**Safety gear used during work**		
	a) Boots	4	8
	b) Gloves	8	16
	c) Safety goggles	8	16

	d) Nil	30	60
	Total	50	100
5	**Source of safe drinking water**		
	a) Carrying by themselves	3	6
	b) Water Purifier	47	94
	Total	50	100
6	**Availability of functional toilets**		
	a) Yes	0	0
	b) No	50	100
	Total	50	100

Results indicate the positive aspects like universal satisfaction with salaries and consistent work schedules, it also reveals areas for improvement in safety. On the positive side, all employees reported satisfaction with their income, and 100% worked an 8-hour shift. Furthermore, a high percentage (78%) rarely experienced any injuries on the work site. Alhaji Aliyu (2007) found that a significant number of quarry workers face injuries in work at the quarry industry. However, a concerning results have emerged regarding usage of safety gear. A significant portion (60%) of employees admitted to not utilizing safety gear, potentially indicating a gap in safety protocols, training, or availability of safety measures. A significant finding has been that of lack of access to basic sanitation facilities like functional toilets. Unavailability of functional restroom facilities underscores a critical gap in workplace infrastructure, potentially leading to discomfort, health risks, and reduced productivity for employees. Priya Dutta et.al (2021), states that stone workers face a risk of heat-related illness, particularly during the summer months. This suggests the work environment might be susceptible to weather conditions, and further investigation is needed to identify specific challenges and explore potential mitigation strategies. Results emphasize the need to address safety concerns and explore solutions to minimize the impact of weather on work activities. All participants had access to safe drinking water as the employers had installed water purifiers. This best practice can be implemented by other Quarry sectors.

Table No.3 Availability of Work During Monsoon

Availability of Work	Frequency	Percent
Daily	5	10
Often	4	8

Sometimes	32	64
Never	9	18
TOTAL	50	100

It was found that the monsoon season significantly disrupted the quarry operations, impacting the well-being of a large portion of the workforce. A substantial majority (82%) of respondents had to completely stop the work and 64% could continue work only sometimes. During the monsoon season, seasonal unemployment within the quarry sector can plunge workers into financial instability, causing stress and hindering their ability to meet their family's needs.

Table No. 4 Fulfilment of Family Needs During Monsoon

Fulfilment of family needs during monsoon	**Frequency**	**Percent**
Always	13	26
Often	24	48
Sometimes	13	26
Total	50	100

Participants who could fulfil the needs of the family during monsoon were only 26%. However, the remaining participants voiced their financial struggles, indicating that they had to compromise other necessities. Due to unavailability of work in monsoon the participants had faced difficulties which negatively influenced the family dynamics and wellbeing of all. Further the authors present the other variables that can explain the financial condition of the participants.

Table No. 5 Respondents Debt Status During the Monsoon

Respondents' debt status	**Frequency**	**Percent**
Sometimes	17	34
Often	14	28
Never	19	38
Total	50	100

Majority of respondents experienced financial stress during the monsoon season, with a combined 62% borrowing money either sometimes or often. This data could reflect broader economic challenges or seasonal impacts on financial stability. Understanding the reasons behind this borrowing behavior might be useful for addressing financial planning and support during such periods. According to H.V Nagesh (2016), quarry workers undergo financial constraints due to which they have to borrow money from others. The study indicates that a high number of the

respondents occasionally borrowed money during monsoon. This shows a significant dependence on quarry owners and other money lending sources to handle financial difficulties. Findings indicate the need for generating alternate measures like temporary job, financial security policies etc.

Table No. 6 Financial Assistance from the Employer

Financial assistance from the employer	Frequency	Percent
Daily	2	4
Sometimes	36	72
Often	6	12
Never	6	12
Total	50	100

The assistance given by the employer to the workers during difficult times shows a positive environment in the workplace. Results showed that 72% of the respondents sometimes got assistance from their employer to balance their financial condition and another 12% of the respondents often got assistance from the employer. It is also noted that 12% did not get any assistance from the employer. There is a need to evaluate the degree and effectiveness of the assistance provided by the employer.

Table No. 7 Respondents Status of Loan

Loan	Frequency	Percent
Yes	15	30
No	35	70
Total	50	100

Results highlight the significant rate of respondents (30%) who have taken loan to balance their financial needs When probed further it was found that Banks (24%) and SHG's (6%) were the sources of loan.

Recommendations and Conclusion

Monsoon season in red stone quarries brings a wave of hardship for daily wage workers. A study has shown that there is a lack of infrastructure and a poor adherence to safety procedures, which puts the health and well-being of red stone quarry workers at danger. A major concern is seasonal

unemployment during the monsoon, which makes it difficult for families to meet their basic needs. This financial instability is exacerbated by psychological effects and social isolation, creating a cycle of distress that intensifies during the rainy season.

The study proposes a multi-pronged approach to improve the situation. Implementing social security policies like unemployment benefits can act as a safety net. Additionally, skill development programs in construction, vocational training can equip workers with new income streams and long-term financial security. Furthermore, improved working conditions with adequate safety measures, healthcare access, and support networks are crucial. These combined efforts can create a more equitable and sustainable work environment. Acknowledging the human cost of red stone production and taking action are not only social responsibilities but also crucial for the industry's long-term success and the well-being of its workers.

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