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STUDYING THE SOCIO-DEMOGRAPHIC CHARACTERISTICS OF MINE WORKERS OF JODHPUR DIVISION IN RAJASTHAN IN THE POST-PANDEMIC SCENARIO

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ABSTRACT:

The COVID-19 pandemic has triggered multiple economic shocks impacting every sector and mining sector cannot be an exception. Mining is one of the major occupations in Rajasthan, which contributes significantly to the state economy, despite being regarded as a dangerous occupation considering its health effects. While the majority of the past research studies have focused on the diseases occurring due to mining activities, the present research highlights the socio-demographic characteristics of workers in the mining sector of Jodhpur division, along with identifying the major social problems of the mine workers. Analysing and discussing the major characteristics of socio-demographic profile of mine workers in the post-pandemic period, the research identified three major social problems – illiteracy, marriages before the legal age, and elderly workers, significantly present among the mine workers that needs to be resolved.

KEYWORDS:

SOCIO-DEMOGRAPHIC PROFILE, MINING SECTOR, POST-COVID PERIOD, JODHPUR.

INTRODUCTION:

COVID-19, possibly the most devastating health epidemic, developed into an unprecedented social and economic global crisis shortly after its origin in Wuhan, China. The global pandemic has triggered multiple economic shocks. Considering the supply aspect, lockdowns have disrupted global supply chains due to factors such as sudden factory closures and transport suspensions. Considering the demand aspect, closure of non-essential economic activities and restrictions on the movement of people has reduced consumption significantly. All of these aspects have led to massive capital outflows from emerging markets, falling exports and incomes, plummeting investor confidence, and plunging commodity prices, creating the perfect storm for a looming deflationary economic crisis. Every sector has been affected by the adverse consequences of the COVID-19 pandemic, and the mining sector is no exception.

The significance of mining activities has significantly enhanced in order to meet emerging infrastructure demands for metals and minerals (NIMH Report, 2011). Even though mining is a hazardous occupation, it has been considered as one of the major occupations in Rajasthan and involves a large workforce, and is expected to grow in the near future (Cho & Lee, 1978). Even, the mining sector is a major economic activity which contributes significantly to the economy of Rajasthan, providing job opportunities to around 2.5 million people and contributing 9.5% to the state GDP.

Although a lot of research has been done in Jodhpur division (covering six districts: Jaisalmer, Barmer, Jodhpur, Jalore, Sirohi, and Pali) to bring mine workers into focus, the majority of the research has focused on the diseases occurring due to mining activities (Singh et al., 2006).

Further, past research has shown that workers involved in various mining activities, especially men, are exposedto high levels of silica dust over a long period of time, and they die very early from silicosis (Murlidhar, 2015; NIMH Report, 2011). There is a lack of research highlighting the socio-demographic characteristics of workers involved in mining activities in the Jodhpur division. Therefore, the current study attempts to analyse the socio-demographic characteristics of workers in the mines of the Jodhpur division and identify their social problems.

METHODOLOGY:

A cross-sectional descriptive study was conducted in the Jodhpur division of Rajasthan between January 2022 and June 2022. The study was conducted in the residential areas of the mine workers. The purpose of the study was informed and explained to all identified mine owners. All mine workers present during the investigation were included and their informed consent was also obtained. Data on selected socio-demographic variables (gender, age, educational status, marital status, marital age, occupational age, work experience, etc.) of workers were collected using a semi-structured questionnaire. The necessary approvals for this study were obtained from the ethical committee. Collected data were analysed using the software program - IBM SPSS (v. 23.0). Inferences were drawn using appropriate descriptive and inferential statistical tools. A p-value < 0.05 was considered statistically significant.

FINDINGS AND DISCUSSIONS:

The fundamental socio-demographic characteristics of the data were examined with the help of descriptive statistics, which provides a powerful summary to enable comparison

among the different groups.

TABLE 1 – CURRENT AGE OF MINE WORKERS

Current Age (in years)	Male Workers (n=844)		Female Workers (n=216)		Total Workers (N=1060)		*p*-value
	Count	%	Count	%	Count	%	
Below 30	109	12.9	14	6.5	123	11.6	.137
30-39	196	23.2	56	25.9	252	23.8	
40-49	246	29.1	69	31.9	315	29.7	
50 & above	293	34.7	77	35.6	370	34.9	
Mean & SD	43.78±10.99		44.97±9.88		44.03±10.78		.043
Age Range	46 (17-63)		38 (20-58)		46 (17-63)		

A total of 1060 workers engaged in the mining sector of Jodhpur division participated in the present study, of which the majority (79.6%) were male workers and balance 216 workers (20.4%) were female. Other research studies on mine workers conducted in Rajasthan also observed a majority of male workers. The study of Raghav et al. (2020) observed 78.7% male mine workers; the study of Mohamed et al. (2017) observed 92.5% male mine workers. A majority of 370 mine workers (34.9%) belonged to the age group 50 years and above, followed by 315 mine workers (29.7%) belonging to the age group 40-49, 252 (23.8%) belonging to the age group 30-39, and 123 (11.6%) belonging to the age group of below 30 years (Table-1). The average current age of female workers (44.97 years) was found to be significantly higher than the average current age of male workers (43.78 years old). The study by Raghav et al. (2020) also observed a significant higher average age of female workers (39.16 years) as compared to that of male workers (37.62 years).

TABLE 2 – EDUCATIONAL STATUS OF MINE WORKERS

Educational Status	Male Workers (n=844)		Female Workers (n=216)		Total Workers (N=1060)		*p*-value
	Count	%	Count	%	Count	%	
Uneducated	366	43.4	128	59.3	494	46.6	<.001
Up to Class VI	209	24.8	52	24.1	261	24.6	
Up to Class X	144	17.1	27	12.5	171	16.1	
Up to Class XII	88	10.4	9	4.2	97	9.2	
Graduate or above	37	4.4	--	---	37	3.5	

Out of the total of 1060 mine workers, 494 (46.6%) were uneducated, 261 (24.6%) had primary & middle school education, 171 (16.1%) had secondary education, 97 (9.2%) has higher secondary education, and 37 (3.5%) were graduated or post-graduated. Higher level of uneducated mine workers was also reported by the study of Yadav et al. (2011). The results summarized in Table-2 confirm that the illiteracy rate was found to be significantly higher among female workers (59.3%) as compared to that of male workers (43.4%).Raghav et al. (2020) observed similarly indicating a significantly higher proportion of uneducated female workers as compared to that of male workers.

TABLE 3 – AGE OF MINE WORKERS AT THE TIME OF THEIR MARRIAGE

Marital Age	Male Workers (n=844)		Female Workers (n=216)		Total Workers (N=1060)		*p*-value
	Count	%	Count	%	Count	%	
Before Legal Age	106	12.6	47	21.8	153	14.4	<.001
After Legal Age	738	87.4	169	78.2	907	85.6	

The results summarised in Table-3 highlights that 153 mine workers (14.4%) got married before attending their legal age (for female 18 years and for male 21 years). Though marriage before attending the legal age is against law in India since 1929, still such marriages are prevalent in some regions of the country. Further, marriage before the legal age was found to be significantly high among female mine workers (47, 21.8%) as compared to male mine workers (106, 12.6%). Raghav et al. (2020) also observed similarly in their study indicating that 13.22% of the workers got married before attending their legal age, which was found to be significantly higher among female mine workers.

TABLE 4 – MARITAL STATUS OF MINE WORKERS

Marital Status	Male Workers (n=844)		Female Workers (n=216)		Total Workers (N=1060)		*p*-value
	Count	%	Count	%	Count	%	
Unmarried	53	6.3	2	0.9	55	5.2	<.001
Married	738	87.4	193	89.4	931	87.8	
Divorced	12	1.4	4	1.8	16	1.5	
Widowed	41	4.9	17	7.9	58	5.5	

The Table-4 depicts the marital status of mine workers. Out of the total 1060 mine workers who participated in the study, 931 workers (87.8%) were married, rest 58 (5.5%) were widowed, 55 (5.2%) were unmarried, and 16 (1.5%) were divorced. The majority of mine workers were married. This may be supported by the fact that workers started working in mines because of a lack of employment opportunities in other sectors to meet their post-marriage financial needs, or because they had several children in their family to support. In addition, the proportion of unmarried male workers and the proportion of female widowed workers wasfound to be significantly higher. The study of Raghav et al. (2020) indicated similar findings.

TABLE 5 – AGE OF MINE WORKERS AT THE TIME OF JOINING THE MINE

Age at the time of joining the mining job	Male Workers (n=844)		Female Workers (n=216)		Total Workers (N=1060)		*p*-value
	Count	%	Count	%	Count	%	
Below 30	170	20.1	36	16.7	206	19.4	.114
30-39	331	39.2	85	39.4	416	39.3	
40-49	205	24.3	63	29.2	268	25.3	
50 & above	138	16.4	32	14.8	170	16.0	
Mean & SD	38.65±10.37		39.19±9.85		38.76±10.27		<.033
Age Range	39 (15-54)		36 (19-55)		40 (15-55)		

As shown in Table-5, out of 1060 mine workers participated in the study, 416 workers (39.3%) joined the mining job in the age group 30-39, while 268 workers (25.3%) joined mines in the age group 40-49, 206 workers (19.4%) joined at the age lower than 30 years, and 170 workers (16%) joined mines at the age of 50 years or above. The average age of joining the mines for female workers (39.19 years) was found to be significantly higher than that of male workers (38.65 years). The study of Raghav et al. (2020) observed similarly indicating that the average age of joining the mines for female workers (24.59 years) was found to be significantly higher than that of

male workers (20.33 years). The workers joined the mines at the lowest age of 15 years and at the highest age of 55 years.

TABLE 6 – MINING WORK EXPERIENCE OF MINE WORKERS

Mine Working Experience	Male Workers (n=844)		Female Workers (n=216)		Total Workers (N=1060)		*p*-value
	Count	%	Count	%	Count	%	
0-5 years	93	11.0	68	31.5	161	15.2	.014
5-10 years	168	19.9	102	47.2	270	25.5	
10-15 years	324	38.4	31	14.4	355	33.5	
Above 15 years	259	30.7	15	6.9	274	25.8	
Mean & SD	12.40±5.38		7.44±4.54		11.39±5.59		<.001

As shown in Table-6, 161 workers (15.2%) had an experience of less than 5 years, 270 workers (25.5%) had 5-10 years of experience, 355 workers (33.5%) had 10-15 years of experience, and 274 workers (25.8%) had over 15 years of experience working in mines. The mean working experience of male mine workers (12.4 years) was found to be significantly higher than the mean working experience of female mine workers (7.44 years). The study of Raghav et al. (2020) observed similar finding indicating a significantly higher working experience of male mine workers (17.29 years) as compared to that of female mine workers (14.57 years).

CONCLUSION:

This study was conducted in the residential areas of the mine workers of the Jodhpur division of Rajasthan, covering six districts: Jaisalmer, Barmer, Jodhpur, Jalore, Sirohi, and Pali, with the aim of assessing the socio-demographic characteristics of workers engaged in the mining activities in Jodhpur division and identifying their social problems.

The study found that the majority of the workers in the mine were men. A significantly high mean age was observed among female mine workers as compared to that the mean age of male workers. The study observed a significantly higher proportion of uneducated female mine workers as compared to that of male mine workers. In addition, female mine workers were significantly more likely to be married before legal age than male mine workers. Most of the mine workers were married, the proportion of unmarried male mine workers was significantly higher than that of female mine workers, and the proportion of widowed female mine workers was significantly higher than that of male mine workers. Similarly, a significantly higher average age of joining the mines was observed among female mine workers as compared to that of male mine workers.A significantly higher average work experience was observed among male mine workers as compared to that of female mine workers.

The study identified three major social problems for workers working in mines. First, the illiteracy among the mine workers was found to be significantly higher. Second, the research observed that marriages before the legal age among mine workers are prevalent in Jodhpur division. Third, more than one-third of the mine workers are found to be elderly. In fact, mining activities are not safe for elderly workers. Hence, the research draws attention of the policymakers towards resolving these social problems.

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