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Health problems faced by brick kiln workers in Salem district

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Abstract
Brick is as old as civilization itself, dating back to ancient Mesopotamia around 500 BC. The thick clay and mud deposited by the Tigris and Euphrates rivers were reinforced with straw and shaped into brick then dried in the sun. The objective of the study is to study the Health Problems faced by Brick kiln workers. Descriptive research method has been used for this study. Convenience sampling method was used to collect the data. The size of the sample is 70. The primary data was collected through questionnaire from the respondents of Salem District. For analyzing the primary data, statistical tools such as T-test, One Way ANOVA and Factor Analysis were used with the help of SPSS Software. The major finding of the study is there is no significant difference between Health Problems and the Demographic variables. Age, Gender, Educational Qualification, Occupation and Income are also affecting the Brick kiln workers in Salem District.

Keywords: Health Problems, Brick kiln, Civilization.

1. Introduction
Brick is as old as civilization itself, dating back to ancient Mesopotamia around 500 BC. The thick clay and mud deposited by the Tigris and Euphrates rivers were reinforced with straw and shaped into brick then dried in the sun. As time progressed, bricks were glazed in a variety of colors and used to adorn the facades of the ziggurat, or temple towers, built as stairways to and for the gods. Eventually, and most likely as a reaction to the realization that when wooden houses burned, the brick on the remaining chimneys had been strengthened, fire-hardened bricks began to replace adobe ones in India and the Middle East.
The archeological ruins of Mohenjo-Daro and Harappa which date back over 4000 years indicate that brick making was well developed in India in ancient times. Mohenjo-Daro had mud-brick and baked-brick buildings. India's brick sector is characterized by traditional firing technologies; environmental pollution; reliance on manual labour and low mechanization rate; dominance of small-scale brick kilns with limited financial, technical and managerial capacity; dominance of single raw material (clay) and product (solid clay brick); and lack of institutional capacity for the development of the sector.

1.2 Brick Kilns Industry in India
In India, the history of making bricks is almost 5000 years old which is as old as the earliest known Indian civilization "Indus Valley Civilization". It is actually owing to the discovery of Indus Valley Civilization. The people of that civilization extensively used bricks to lay complex mathematically planned cities. Some of these towns were almost 3 miles in diameter and housed as many as 30,000 residents. Even now, nearly 5000 years later, bricks are being used extensively across the country, so much so, that India is the second largest producer of bricks after China. Brick production is highly concentrated in four countries (~75% global production):

- China 54% ~700-800 billion/year
- India 11% ~140 billion/year
- Pakistan 8% ~100 billion/year
- Bangladesh 4% ~ 50 billion/year

1.3 Review of Literature

Researcher name	Research year	Research title	Publication journal	Result
Ruchi Chaudhary *et al*.	2012	Reduction of Occupational Health Hazards of firer in Brick kiln industry	International Journal of Computer Science and Communication Engineering. Page No.51-55.	Using Artificial Neutral network and genetic algorithms. The main important result is switching over Alternative Jobs.
Vikas Monga *et al*.	2012	Respiratory Health in Brick kiln workers	International Journal of Physical and Social Science. Page No.226-244.	The main important result is mean respiratory Dust exposure in firing section was highest (19.51 mg /m3) while mean respiratory Dust exposure in Mixing & Molding section was the lowest (10.08mg/m3).
Deepa kumar and Arun Varun	2013	A study on Clinical- Social problems of Brick kiln workers in Gujarat	National Journal of Community Medicines. Volume 4, Issue3, Page No.503-507.	In this study major result is workers were mostly illiterate or had Primary Education. Females were uneducated. These workers are getting daily wages and there is no Holiday as such.
Niaz Mohammad and Alan	2010	A Sociological study of Brick kiln workers in Peshawar, Pakistan	Pakistan Journal of Life and Social Science. Page No. 19-23.	The study mainly focused on the nature of work, Socio- Economic causes and effects of bonded labour.

1.4 Importance of the Study
This study analyzes the Health problems faced by Brick kiln workers. There have been many researches carried out regarding Environmental Pollution of Brick industries and Child Labour in Brick kiln industry, but there are no researchers which have studied the Health Problems faced by Brick kiln Workers in Salem District. In this regard the present study fulfills the Gap in the research and thus gains importance.

1.5 Statement of the Problem
This study analyzes the Health problems faced by Brick kiln workers in Salem District only.
The major problems Brick kiln workers are as follows:
- Lot of work for Rain Seasons.
- Low level of wages.
- No Bonus and Gifts.
- Lack of water, Mud, Clay.
- Not covered by insurance policy for workers.

1.6 Objectives of the Study
- To study the Health Problems faced by Brick kiln workers.

1.7 Hypothesis
- There is no significant difference between Health Problems and the Demographic variables.

1.8 Methodology
The Present study analyze to the Health Problems faced by Brick kiln workers in Salem District. Descriptive research method has been used in this study. Convenience sampling method has been used in this research. The size of Sample is 70. The sources of data were primary as well as secondary. The data collected in the face book user's survey constitute primary data. Structured questionnaires were prepared for the purpose of face book users separately for the study. The information gathered from books, journals, magazines, reports, and dailies was the secondary data.

Statistical Tools
- Independent Sample T-Test
- One way ANOVA
- Factor Analysis

1.9 Analysis and Interpretation of Data
Ho: There is no significant difference between Health Problems and the Demographic Variables.

							Hypothesis
1. Classification Of The Respondent Based On Gender And The Total Injuries Problems (T-Test)							
	Gender	N	Mean	Std. Deviation	T Value	P- Value	Ho Accepted
	Male	33	14.97	4.066	1.511	0.135	
	Female	37	16.32	3.432			
	Total	70					
2. Classification Of The Respondent Based On Area And The Total Smoke / Dust Problems (T-Test)							
	Semi-Urban	13	21.38	3.124			Ho Accepted
	Rural	57	22.84	3.437	1.401	0.166	
	Total	70					
3. Classification Of The Respondent Based On Age And The Total Illness Problems (Anova)							
	10-15	3	41.33	3.512			Ho Accepted
	16-25	5	42.80	7.155			
	26-36	27	38.44	5.753	1.271	0.291	
	36-47	23	40.00	4.406			
	Above 47	10	37.90				
	Total	70					
4. Classification Of The Respondent Based On Education And The Smoke/Dust Problems (Anova)							
	Illiterate	13	21.23	3.395			Ho Accepted
	School Level	48	22.62	3.437	2.136	0.126	
	Above Ug	9	24.22	2.728			
	Total	**70**					
5. Classification Of The Respondent Based On Community And The Satisfaction Level Of Wages (Anova)							
	Sc	43	3.33	1.149			Ho Accepted
	St	16	3.62	0.957			
	Bc	8	2.38	0.744	2.675	0.054	
	Mbc	3	3.67	0.577			
	Total	70					

Source: Primary Data

Inferences

1. Since p value (0.135) is more than 0.05 the null hypothesis is accepted at 5% level of significant. Hence it is conclude that there is no significant difference between the male and female with regard to Injuries Problems.
2. Since p value (0.166) is more than 0.05 the null hypothesis is accepted at 5% level of significant. Hence it is conclude that there is no significant difference between Age group with regard to Smoke or Dust Problems.
3. Since P value (0.291) is more than 0.015 the null hypothesis is accepted at 5% level of significance and rejected the alternative hypothesis. Hence it is conclude that there is no significant difference between Age group with regard to Illness Problems.
4. Since P value (0.126) is more than 0.05 the null hypothesis is accepted at 5% level of significance. Hence it is conclude that there is no significant difference between Education with regard to Smoke or Dust problems
5. Since P value (0.054) is more than the table value the null hypothesis is rejected and alternative hypothesis is accepted. Hence it is conclude that there is significant difference between Communities with regard to Satisfaction level of wages.

1.10 Factor Analysis

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.513
Bartlett's Test of Sphericity	Approx. Chi-Square	520.455
	Df	153
	Sig.	.000

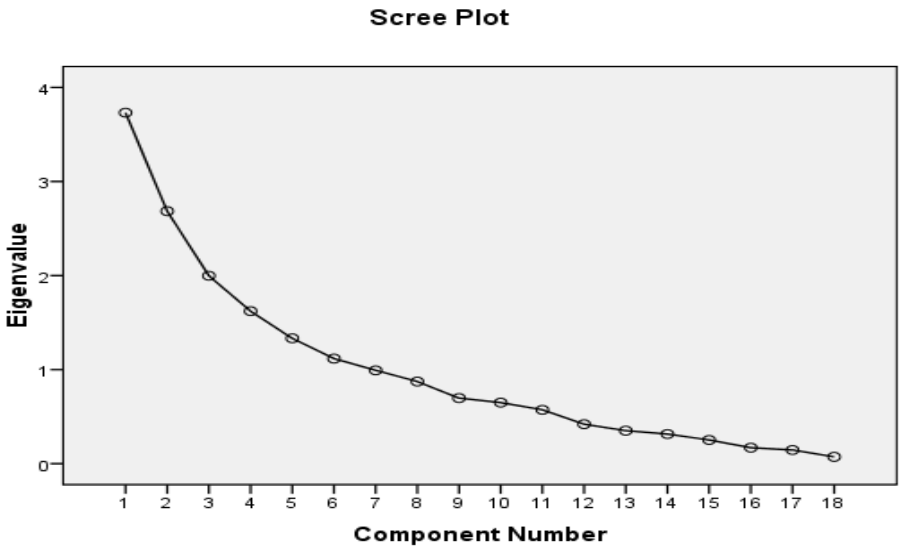
Source: Computed Data

Inference

From the table it can be noted that Kaiser-Meyer-Olkin measure of sampling adequacy is 0.512 and Bartlett's test of Sphericity approximate Chi-Square value in 520.455 which are statistically significant at 5% level.

Total Variance Explained									
Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.732	20.731	20.731	3.732	20.731	20.731	3.360	18.667	18.667
2	2.684	14.914	35.645	2.684	14.914	35.645	2.139	11.882	30.549
3	1.998	11.098	46.743	1.998	11.098	46.743	1.886	10.479	41.028
4	1.622	9.009	55.752	1.622	9.009	55.752	1.852	10.288	51.317
5	1.333	7.405	63.157	1.333	7.405	63.157	1.823	10.125	61.442
6	1.117	6.208	69.366	1.117	6.208	69.366	1.426	7.924	69.366
7	.993	5.515	74.881						
8	.874	4.853	79.734						
9	.697	3.874	83.608						
10	.650	3.608	87.216						
11	.573	3.182	90.398						
12	.420	2.336	92.734						
13	.351	1.952	94.685						
14	.316	1.753	96.438						
15	.252	1.401	97.840						
16	.170	.944	98.784						
17	.146	.811	99.595						
18	.073	.405	100.000						
Extraction Method: Principal Component Analysis.									

From the above table, it can be noted the 7 variables are reduced to 3 predominant factors based the Initial Eigen value of more than 1, with cumulative values in percentage of 69.366.



Rotated Component Matrix						
Health Problems	**Component**					
	Injuries Problems	**Organ Problems**	**Dust Problems**	**Illness Problems**	**Pain Problems**	**Food Poison**
Itches	.830					
Wounds cut	.799					
Difficult Breathing	.717					
Dizzy	.716					
Headache		.754				
Skin rashes		-.639				
Stomachache		-.606				
Sprains		.526				
Unnecessary tiredness			.822			
Eye problems			.635			
Minor Cuts				.874		
Fever				.695		
Cough				.534		
Body or Muscle ache					.680	
Broken Bones					-.659	
Chest pain					.574	
Backache					.460	
Diarrhea						.791

Sources: Computed Data

From the above table, it can be noted that 4 variables together form factor which can suitably be named as "*Injuries Problems*". The Second factor is formed with 4 variables which can be named as "*Skin Problems*". The Third factor is formed with 2 variables which can be named as "*Dust Problems*". The Fourth factor is formed with 3 variables which can be named as "*Illness Problems*". The Fifth factor is formed with 4 variables which can be named as "*Pain Problems*". The Sixth factor is formed with 1 variable which can be named as "*Food Poison*".

Suggestions

- Most of the workers has been expected Electricity should be provided in the huts by the owners of the Brick kiln.
- The Bonus should be provided by the owners of the Brick kiln workers.
- The wages should be increased by the owners of the Brick kiln workers.
- Exhaustive and comprehensive legislation is urgently needed for regulating working conditions, wage structure, welfare measures of the workers in the brick kilns.

Conclusion

The study has analyzed that the Health problems faced by Brick kiln workers in Salem District. This conclusion is based on Survey and its analysis. Most of the workers are belong to Scheduled Community. Majority of the workers are married in the Brick kiln fields. Most of the respondent there is no Satisfaction level of the Wages in these fields. There is no difference between male and female are facing the illness and injuries problems.

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