Tata Institute of Social Sciences

Organizing the Unorganized

Social & Financial inclusion of the unorganized sector in India

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ABSTRACT

According to the Economic Survey of India 2021-22, more than 82% of the workforce in India is employed in the unorganized sector. Although the sector employs a majority of the workforce, the workers lack basic social security and financial stability. There are numerous challenges encountered by this sector starting with below-par wages, unsafe working conditions, minimal job security, extended working hours etc. For a long time, this sector and its challenges had almost no attention from the government. It was in 2006 when the first step towards the upliftment of this sector was taken by the formation of the National Commission for Enterprises in the Unorganised Sector (NCEUS) and the Arjun Sengupta Commission, which carried out a detailed study and submitted its recommendation. Although there has been some work in the field of making the sector more socially and financially secure, the challenges are also growing exponentially. A survey was conducted to collect the data on the working and living conditions of ground-level workers employed in the unorganized sector and understand their job satisfaction levels. The various challenges and their severity are studied through statistical analysis tools. The survey revealed some shocking ground reality related to the implementation of min wages, benefits from government welfare schemes and the level of exploitation faced by them. The results of further data analysis showed that the factors which are highly significant when it comes to the satisfaction level of the unorganized sector workers. The article also illustrates the limitations of this study and the scope of future studies. Based on the study, a few measures are suggested in the article, that can be explored to ensure the social and financial inclusion of the unorganized sector.

Keywords: Labour, Unorganized, Act, Social security, informal, personal protective equipment, confined space, Min wage, and skill development

INTRODUCTION

The Indian economy is characterized by the existence of a vast majority of unorganized labour employment. The term 'unorganized labour' has been defined as those workers who have not been able to organize themselves in pursuit of their common interests due to certain constraints like casual nature of employment, ignorance, illiteracy, small and scattered size of establishments, etc. According to the Economic Survey 2021-22, more than 82% of the workforce in India is employed in the unorganized sector. In 2019–20, the total employment in the country was 53.53 crores comprising around 9.55 crores in the organized sector and the remaining 43.99 crore workers in the unorganized sector. Out of these 43.99 crore workers in the unorganized sector, there were 23.2 crore workers employed in the agricultural sector, about 12.46 crores in the manufacturing and construction sector, and remaining in the trade, transport, and services sector. Although the sector employs most of the workforce, the workers lack basic social security and financial stability.

Type of Employment	Organized	Unorganized	Total
2019-20			
Formal	5.09	0.80	5.89
Informal	4.46	43.19	47.64
Total	9.55	43.99	53.53

Table 1: Workers employed in the Organized & Unorganized sector (in crores)
Source: Economic Survey of India 2021-22

The unorganized sector is a unique speciality of the Indian economy. The term unorganized sector is defined under the Unorganized Workers' social security Act, 2008 as a home-based worker, self-employed worker, or a wage worker in the unorganized sector and includes a worker in the organized sector who is not covered by any of the acts mentioned in schedule II of the acts i.e. the Employee's Compensation Act-1923, the Industrial Disputes Act-1947, the Employee's State Insurance Act-1948, the Employee's Provident Funds, and Miscellaneous Provision Act-1952, the Maternity Benefit Act-1961, and the Payment of Gratuity Act-1972.

Construction workers constitute a vast majority of workers in the unorganized sector. A survey was conducted with ground-level workers employed in the unorganized sector to understand their living standards, working environment, and benefits from various welfare schemes launched by the Government of India for the unorganized sector. The respondents were mainly from the construction and industrial sector working in one of the renowned Public Sector Undertakings (PSU) in Mumbai.

PROBLEM STATEMENT

The workers employed in the unorganized sector are not covered under any social security acts and the Factories Act, 1948. The income of unorganized sector workers, when compared with organized sector workers, is not only lesser but many times it is not even worth the minimum subsistence. The other challenge faced by this sector is the staggering nature of work, which leads to an even lesser total annual income. This temporary nature of their job turns out to be the highest demoralizing factor for them. Psychiatrists have suggested that there are higher chances that unorganized sector workers will get infected by mental illness than those employed in the organized sector. It is often reported that they are even deprived of the min wages (which are already very low compared to the global standards) set by the government. They are compelled to work even at below min wages due to unemployment and the abundance of workforce available in India. Although there are numerous welfare schemes announced by the Govt. of India, they seldom get benefitted from any of these welfare schemes. They are highly neglected by their employer and the middlemen involved in getting them employed. Most of the unorganized sector worker is unaware of the social security acts available to them and hence, they are continuously getting exploited by their employer. Many times, they are forced to work in unsafe and unhygienic working conditions. In addition, they are not getting the benefit of quality medical facilities, accidental compensation, paid leaves, and pension schemes.

On one side they are not getting any kind of social security and on the other hand, they are getting physically and mentally harassed also. The inconsistency between income and expenditure doesn't allow them to lead a better life. The Govt. of India brings in many welfare schemes from time to time but there are numerous challenges in the implementation of these schemes. They lack basic amenities like drinking water, proper resting areas, hygiene, and sanitation facilities. It is very important to note that there is no concrete methodology available for the proper identification of unorganized sector workers. With this backdrop, the author got an idea to study these challenges through statistical analysis tools and highlight the key challenges being faced by the unorganized sector workers.

The **objectives** of this study are:

a) To highlight the challenges and difficulties faced by the unorganized sector workforce.
b) To study the impact of various challenges faced by unorganized sector workers on their overall satisfaction level using multiple regression and factor analysis.
c) Suggest three key focus areas for improvement that will help enhance their satisfaction level and improve their living and working conditions.

LITERATURE REVIEW

A comprehensive search was conducted across various databases publishing articles related to unorganized and informal sectors such as World Economics Journal, International Labour Organization, Economic Survey of India, Ministry of Labour & Employment, Indian Journal of Applied Research, ResearchGate, JSTOR as well as search engines such as Google to find articles and research reports relating to the research topic. The keywords were used in the context of social and financial aspects of the unorganized sector workforce. Most of the studies conducted in this field till now are qualitative in nature, dealing with various challenges faced by the informal and unorganized sector in India and abroad. The major articles and research papers are reviewed in this section. First, we review the qualitative studies available on this topic followed by the quantitative studies.

The first major step toward the unorganized sector was taken by the Government of India way back in 2004, when they commissioned the **National Commission for Enterprises in the Unorganised Sector (NCEUS)** in pursuance of its Common Minimum Programme that committed itself to ensure the welfare and well-being of all workers, particularly those in the unorganised sector. Under the umbrella of NCEUS, the Arjun Sengupta Commission examined the conditions of work as well as livelihood issues of the unorganised workers. The Commission has carried out a detailed analysis of the various dimensions of the challenge confronting the unorganised workers like – non-compliance with minimum wages, occupational health & safety, extended working hours, child labour, non-adherence to regulations etc. The committee recommended a legislation for social security for unorganised workers which primarily included social security benefits (under the National Social Security Scheme) and the setting up of the National Social Security Fund.

Bino Paul & Krishna Muniyoor (2021) in their article "*The Emerging Dynamics of Informal Employment*" investigate the emerging dynamics of formal and informal employment in Maharashtra using the unit-level data from NSSO. The article highlights the uneven distribution of the status of employment in rural and urban Maharashtra; the burgeoning size of the working poor, who earn barely enough wages to obtain a decent living; and inadequate coverage of formal employment in the economy. In conclusion, they argued that the state should aim at restructuring employment status and labour laws by infusing more skill to trigger an upward spiral of higher productivity, which will catapult the economy to a desirable trajectory, as well as facilitate and foster inclusive growth.

M. D. Pradeep, B. K. Ravindra & T. Ramjani Sab (2017) through their article "*A study on the prospects and problems of unorganised labours in India*" aims to identify the various problems faced by the unorganized sector in India. They did a comprehensive study focusing on factors like - job insecurity, occupational hazards, implementation of min wages, lengthy working hours, poor working conditions, hazards at work, low bargaining power, poor employer-employee relationship, and the impact of natural disasters etc. They also studied the challenges faced in the implementation of various welfare schemes and social security acts for the unorganized sector. They concluded that India needs to create a proper registration system for the unorganized sector, the government should regulate informal economic activities with safety & health, and attention should be provided to encourage green jobs, sustainable development, community participation, health and safety consciousness and enriching the skills of unorganised workers in India.

Subhasish Chatterjee (2016) tried to focus on various problems of unorganized labour and the necessary solutions through his article "L*abourers of unorganised sectors and their problems*". He explained the various social security measures available for the unorganized sector through the unorganized sector social security net. The study concludes that constituting the acts and framing of schemes are not enough for the advancement of labours working in informal sectors but, execution of those acts and schemes should be an imperative obligation of the government.

Tejaswini H.M and Manjula H.K (2019) through their article "*Investment and saving strategies of unorganized vendors - an empirical analysis at K R Market, Bengaluru*" aims to study the saving and investment pattern of unorganized vendors, to study the various factors influencing their saving and investment, to study problems faced in saving and investment by them and challenges they face in day-to-day functioning. The study concludes that the most important need for them was giving protection from the local authorities and providing them with formal credit facility to buy basic stock for their business and other requirements.

Pratima Chamling Rai (2019) in her article "*Social security of the workers in the unorganised sector: an analysis*" attempts to have a closer analysis of the social security of the workers in the growing informalisation of labour markets in the county and discussing its implications. In conclusion, she suggests that the government should make efforts to improve their working conditions in terms of occupational safety, working hours, and payment of adequate wages to them so that the informal workers engaged in the unorganized sector of employment may have a decent and dignified work life.

Madhu Balaaji S & Girija Anil, ML (2018) in their article "*A study on labourers and their problems in unorganised sector in India*" made an attempt to analyse the labours in the unorganized sector and the problems that they face, and welfare measures adopted by their employer and government. In conclusion, they have highlighted that the working situation of labour in work vicinity isn't first-rate in India. The foremost initiative through the government is the unorganized labours "social security act, 2008, but the truth is quite shocking because the act has been proved a tiger without teeth.

S V Ramana Murthy (2015) in his paper "*Measuring informal economy in India _ Indian experience*" presents the different approaches followed in the compilation of various different sectors of Gross Value added (GVA) of the informal economy. An approach titled Effective Labour Input approach to estimating the GVA of the unorganised sector is presented in the paper. The article concludes that the share of the informal sector in the economy is more than 50% of GVA which poses many challenges. The nature of the informal sector enterprises is dynamic. The birth and deaths of enterprises are also very fast.

HYPOTHESES

Based on the literature review, it can be understood that the unorganized sector in India faces numerous challenges on every front be it at working environment, living standards, social and financial security etc. It is pertinent to examine these challenges in detail to conclude about their overall satisfaction level at work. Although there are numerous articles available on various search engines with qualitative analysis carried out in the field of the unorganized sector, not enough quantitative research has been carried out in this field till now. Based on the literature, the following null hypotheses are formed for workers of the unorganized sector.

H1:   The number of paid leaves does not have any significance on the job satisfaction level.

H2:   The age group of workers does not have any significance on the job satisfaction level.

H3:   The safety level at work in a confined space does not have any significance on the job satisfaction level.

H4:   The quality of personal protective equipment provided to workers does not have any significance on the job satisfaction level.

H5:   The behaviour of supervisors with the workers does not have any significance on the job satisfaction level.

H6:   The drinking water facility provided to the workers does not have any significance on the job satisfaction level.

DATA COLLECTION

The idea of this research is based on the personal experience and day-to-day interaction of the author in dealing with the unorganized sector workers at various construction and manufacturing sites. The aim of this study is to gauge the real ground-level difficulties faced by the workers of the unorganized sector. This being a very sensitive subject, directly dealing with

the working and living conditions of the workers, it was thought prudent to collect primary data directly from the ground-level workers.

During various literature reviews, it was observed that most of the articles published in this field are purely qualitative in nature with no actionable conclusion. These studies have mostly concluded by exploring concepts and experiences only. The author of this article was keen on doing a quantitative study that allows a statistical analysis of variables and testing the hypotheses. With this viewpoint, a detailed questionnaire was prepared with some thought-provoking questions to help identify the real problems and challenges being faced by them. The questionnaire was broadly divided into two parts – the first part where the respondents had to submit their response in the form of a rating on a scale of 1 (lowest) to 5 (highest) and the second part mainly consisted of demographic information. As there was not much past quantitative literature available on this subject, the questions were framed taking reference from the 'Minnesota Satisfaction Questionnaire' and 'Gallup Employee Engagement Questionnaire'. Although the two questionnaires mentioned above are mainly for executives and managers, they provided great insights on framing the questionnaire.

The questionnaire was shared with experts from various fields – Contract Management, Project Execution, Industrial Relations, and Business Statistics. Based on the valuable inputs received, the questionnaire was modified by eliminating double-barred questions, modifying the rating scale, and changing the question sequence. As part of a pilot experiment, the questionnaire was then shared with a small set of diverse respondents from the unskilled to highly skilled category. During the pilot study, the author received some never thought before input and it helped to make the questionnaire more robust and exhaustive. The final questionnaire varied from their motivation level at work to the safety measures taken at the work site, their living conditions, welfare schemes, the hygiene & working environment. Demographic information such as age, gender, monthly income, profession, educational qualification, current city, paid leaves, salary, staying arrangements, etc. was also collected. The final questionnaire is attached as Annexure-1. The survey was taken in physical form with each workman filling the form manually. A total of 62 respondents submitted their completely filled responses.

Reliability checks of the questionnaire: The unprecedented decision of collecting the data in primary form was an important decision. However, in surveys like this, checking the reliability of the questionnaire is of paramount importance. Hence, before proceeding with further analysis of data checking was done to find the Cronbach alpha value. The **Cronbach alpha** value comes out to be **0.853**, which suggests that the questionnaire has **good reliability**.

| ANOVA						
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Rows	356.51613	61.00000	5.84453	6.79757	0.00000	1.32949
Columns	130.83871	16.00000	8.17742	9.51088	0.00000	1.65388
Error	839.16129	976.00000	0.85980			
Total	1,326.51613	1,053.00000				
	Cronbach Alpha			**0.853**	**85.3%**	

Table 2: ANOVA Test & Cronbach's alpha
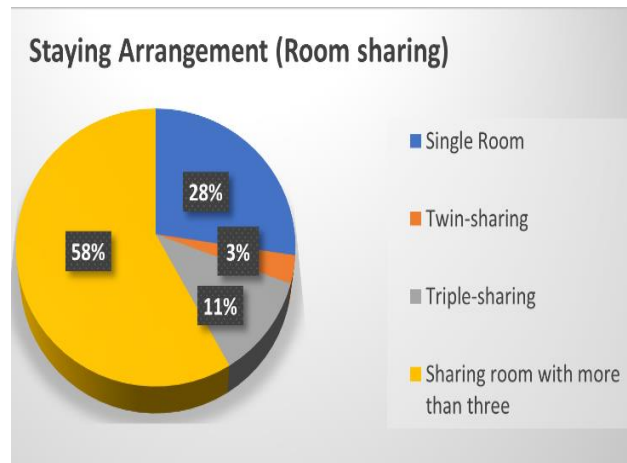
DATA ANALYSIS & RESULTS

The data collected from the 62 respondents were analyzed and the respondent profile is indicated below. More than 80% of the workforce was under the age of 35 years. On the skill-set level, the respondents were almost equally distributed; with around 29% unskilled and 28% highly skilled. Around 65% of respondents' educational qualification was up to the Higher secondary level. In terms of work experience, the respondent count is normally distributed with the majority having experience in the range of 4-7 years. Around 65% of respondents have experience in the range of 1 to 7 years. More than 80% of workers have 2 or more dependents. Around 60% of workers are migrant workers hailing from states like – Bihar, Uttar Pradesh, West Bengal, Andhra Pradesh, Rajasthan, and Karnataka.

Table 3: Respondent Profile

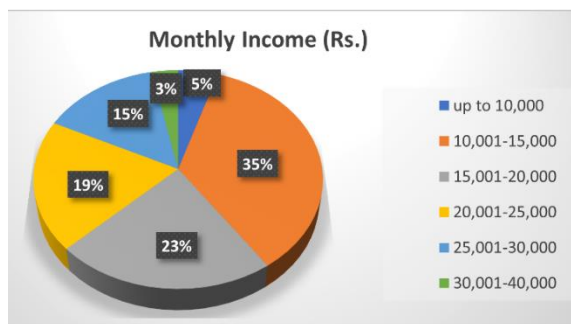|		
Age in years		
18-25	19	30.65%
26-35	32	51.61%
36-45	9	14.52%
45-55	2	3.23%
Educational Qualification		
Less than 10th	18	29.03%
10th	17	27.42%
12th	6	9.68%
Graduation	19	30.65%
Post-Graduation	2	3.23%
Category (Skillset)		
Unskilled	18	29.03%
Semi-Skilled	10	16.13%
Skilled	17	27.42%
Highly Skilled	17	27.42%
Work Experience in years		
Less than 1	1	1.61%
1to3	16	25.81%
4to7	24	38.71%
8to15	14	22.58%
16to20	6	9.68%
21to30	1	1.61%
Dependents		
No dependents	12	19.35%
2	6	9.68%
3	10	16.13%
4	16	25.81%
5	13	20.97%
6	3	4.84%
7	1	1.61%
15	1	1.61%
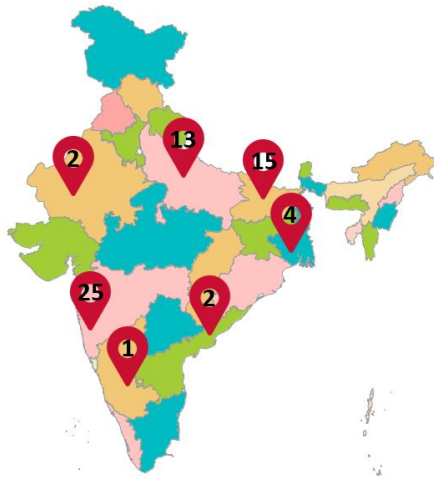
| Pic 1: Domicile state of respondents | Pic 2: Staying arrangement of respondents in Mumbai |

On further study of the respondent's profile, some surprising results were observed. They are enumerated below:

❖ Around 58% of the contract workforce is sharing their single room accommodation with more than 3 other workers in the same room.

❖ More than 63% of workers (irrespective of their skillset) are not being paid the min wages fixed by the government. If we drill down further category-wise, the results are highly worrisome.

  ➢ More than 83% of unskilled workers are not being paid the min wages.
  ➢ More than 70% of semi-skilled workers are not being paid the min wages.
  ➢ Around 90% of skilled workers are not being paid the min wages.
  ➢ Around 65% of highly skilled workers are not being paid the min wages.

Min Wages in Mumbai for Cnstrcution workers (01.04.2022 to 30.06.2022)		
	Rs./Day	Rs./Month (approx.)
Unskilled	663	19,890.00
Semi-Skilled	734	22,020.00
Skilled	806	24,180.00
Highly Skilled	876	26,280.00

Pic 3: Monthly income range of respondents   Table 4: Minimum rates of wages

❖ Around 60% of workers are not enrolled in any of the government's social security or welfare schemes (Provident Fund, Employee State Insurance Corporation, Pradhan Mantri Jeevan Jyoti Bima Yojana, etc.)
[Note: *PF & ESIC registration of all workers engaged by an employer is mandatory under section 2A.*]

❖ Further, among the 40% workforce who are enrolled under these social security and welfare schemes, more than 60% have never received any benefit from these schemes.

❖ Only 5% of the workforce (out of 40% of the total workforce enrolled) have always got support from these social security and welfare schemes, when needed.
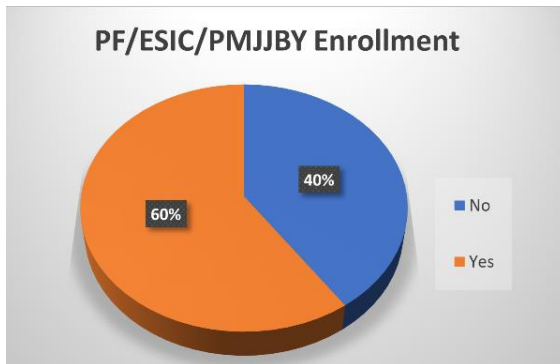
Pic 4: Enrolment status in PF/ESIC/PMJJBY

Pic 5: Support from welfare schemes

❖ Around 85% of respondents have said that they feel a need for a secondary source of income, as their current drawn salary is not worth the minimum subsistence.

❖ More than 73% workforce is not getting even a single day of paid leave in a month. (Except Sundays and National holidays)
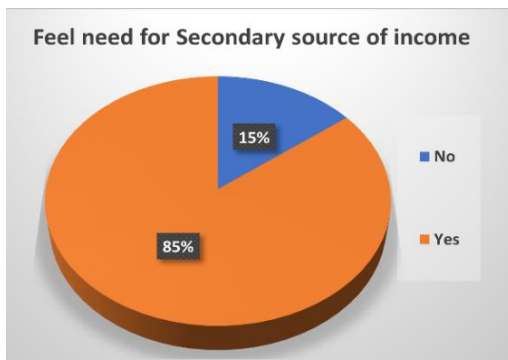
Pic 6: Secondary source of income requirement

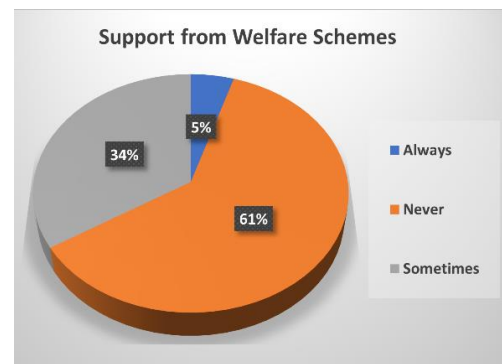**Pic 7:** Paid leaves per month except for holidays

The inferences made above are mostly related to the demographic information collected from the respondents. Further, there were a total of 18 questions in the questionnaire, for which responses were sought on a scale of 1 to 5. These variables are named V1 to V18 as indicated in the attached excel sheet of data analysis. V18 (i.e. the job satisfaction level) is the dependent variable in our analysis. The variables V1 to V17 (except V5) are the independent variables. V5 is a question related to the impact of covid-19 on finding jobs, which is not related to the dependent variable V18. Hence, V5 is not considered in the regression analysis. The following statistical tools were used to carry out an analysis of the survey data.

Correlation Matrix and Descriptive Analysis

To proceed further with the data analysis, a correlation matrix was generated to check for the non-multicollinearity of variables. Table 5 below depicts the result of the correlation analysis carried out on variables V1 to V18. There is no significant correlation found among any of the variables except marginal correlation between V6 & V8.

	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12	V13	V14	V15	V16	V17	V18
V1	1.00																	
V2	0.12	1.00																
V3	0.45	0.34	1.00															
V4	0.44	0.22	0.20	1.00														
V5	0.25	0.09	0.13	0.47	1.00													
V6	0.31	-0.05	0.32	0.41	0.25	1.00												
V7	0.13	0.34	-0.09	0.29	0.29	0.06	1.00											
V8	0.48	0.28	0.31	0.57	0.46	0.60	0.47	1.00										
V9	0.39	0.31	0.30	0.56	0.51	0.19	0.33	0.48	1.00									
V10	0.31	-0.18	-0.08	0.04	0.06	0.06	0.00	0.08	0.01	1.00								
V11	0.26	0.39	0.28	0.35	0.05	0.37	0.02	0.37	0.34	0.11	1.00							
V12	0.53	0.25	0.28	0.47	0.36	0.29	0.22	0.46	0.52	0.25	0.39	1.00						
V13	0.18	0.03	-0.03	0.41	0.25	0.12	0.15	0.23	0.31	0.21	0.21	0.25	1.00					
V14	0.42	0.19	0.28	0.58	0.47	0.36	0.34	0.49	0.48	0.00	0.38	0.39	0.24	1.00				
V15	-0.14	0.06	0.01	0.19	0.04	0.15	-0.03	-0.06	0.16	0.08	0.29	0.16	0.34	0.16	1.00			
V16	0.35	0.17	0.25	0.44	0.40	0.36	0.43	0.52	0.46	0.31	0.24	0.46	0.22	0.30	0.21	1.00		
V17	0.06	0.00	-0.05	0.04	0.20	0.03	0.31	0.17	0.31	-0.05	0.02	-0.06	-0.01	0.17	-0.03	0.22	1.00	
V18	0.38	0.27	0.43	0.36	0.38	0.30	0.35	0.57	0.51	0.06	0.30	0.33	0.25	0.40	-0.02	0.41	0.47	1.00

Table 5: Correlation matrix of variables

The next analysis carried out on the collected data was descriptive analysis. All the datasets with scale/interval variable types were considered in the descriptive analysis. Table 6 below depicts the results of the descriptive analysis. Following are the key findings from the descriptive analysis:

❖ From the mean value data, the most common variable with a low level of satisfaction/motivation appears to be V4 (i.e., overtime incentive provided to them for extended working). This is one of the most important real-life challenges faced by the workers of the unorganized sector. Most of the time they are forced to work for extended hours with meagre or no incentives.

❖ The data on the median reflects that the variable V16 is on the lowest side i.e., the knowledge level among the unorganized sector workers about the various social security and welfare schemes is very low. This remains a major area of concern when we talk about the social and financial inclusion of the unorganized sector.

❖ The highest value of standard deviation among the variables is found in V5 (i.e., the difficulty level in finding a job after covid-19 pandemic) and the lowest value of standard deviation is observed in V2 (i.e., the level of safety measures taken at the workplace)

- ❖ Coefficient of variance (CV) is manually calculated for all the variables. Among the independent variables, the least value of CV (i.e. the most consistent data) is observed for V2 i.e., the level of safety measures taken at the workplace.
- ❖ Another important piece of information observed from the descriptive analysis is, on average workers are getting only half a day of paid leave per month. The median value of leaves is zero. This shows that the workers are getting highly exploited. Even a day of leave will attract a deduction from their monthly salary for the equivalent amount.
- ❖ Lastly, the analysis of the number of dependents in the family shows that on average each worker has more than three dependents at home whose livelihood is taken care of by these workers.

	Leaves	Dependents	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12	V13	V14	V15	V16	V17	V18
Mean	0.52	3.40	3.34	3.50	3.03	2.60	3.06	3.71	3.55	3.82	3.32	3.11	3.26	3.27	2.82	2.82	2.84	2.68	3.48	3.40
Std Error	0.11	0.31	0.15	0.09	0.11	0.15	0.16	0.12	0.14	0.15	0.14	0.12	0.13	0.13	0.15	0.15	0.13	0.16	0.14	0.12
Median	-	4.00	3.50	3.50	3.00	3.00	3.00	4.00	4.00	4.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	2.00	4.00	3.00
Mode	-	4.00	4.00	4.00	3.00	3.00	4.00	3.00	4.00	5.00	2.00	3.00	4.00	3.00	2.00	3.00	2.00	2.00	4.00	3.00
SD	0.90	2.43	1.20	0.72	0.87	1.19	1.28	0.93	1.13	1.17	1.10	0.96	0.99	1.04	1.18	1.17	1.06	1.24	1.11	0.97
Variance	0.81	5.88	1.44	0.52	0.75	1.42	1.64	0.87	1.27	1.36	1.21	0.92	0.98	1.09	1.39	1.36	1.12	1.53	1.24	0.93
Range	3.00	15.00	4.00	3.00	4.00	4.00	4.00	4.00	4.00	4.00	3.00	4.00	3.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Minimum	-	-	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Maximum	3.00	15.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
CV (calculated)	1.75	0.71	0.36	0.21	0.29	0.46	0.42	0.25	0.32	0.31	0.33	0.31	0.30	0.32	0.42	0.41	0.37	0.46	0.32	0.28

Table 6: Descriptive Analysis

The methodology adopted for hypotheses testing

This study is aimed at highlighting the main challenges and difficulties faced by the unorganized sector workforce in India. In addition, it also explores the various factors impacting the overall satisfaction level of a worker.

- ❖ The null hypotheses under **H1** mainly deal with the impact of paid leave(s) given to a worker on their satisfaction level. The data on leaves were captured in two different forms – one on an absolute scale where the respondents indicated the no. of leaves per month offered to them and the second, their satisfaction level on a scale of 1 to 5 with the no. of paid leaves provided to them. The first data is on an absolute scale hence, to understand its impact on the satisfaction level **Pearson Chi-Square test** methodology was adopted (one dependent and one independent variable). However, the interval data obtained on satisfaction level with no. of leaves are part of the 16 independent variables (questionnaire) hence, it was thought prudent to check its impact on the overall satisfaction level through the **multiple regression** method where the combined effect of all individual independent variables are considered.

- ❖ The null hypothesis H2 deals with identifying the impact of age group on the job satisfaction level. The data on the age group is collected in the form of a nominal variable and the satisfaction level is an interval type data. Hence, to analyze the impact of a nominal variable on the interval variable, the **Pearson Chi-Square test** methodology is being adopted.

- ❖ The null hypotheses **H3 to H6** are part of the 18 questionnaires where the response was obtained on a scale of 1 to 5. V18 (satisfaction level at work) is the dependent variable and V1 to V17 (except V5) is the independent variable. All these data sets are of interval type. A dependent variable is rarely explained by a single independent variable. Hence, the multiple regression method is adopted to check the significance of hypotheses H3 to H6, which attempts to explain a dependent variable using more than one independent variable.

To check the significance of the first two null hypotheses (H1 to H2), the Chi-Square test is carried out and the results are as below.

A. No. of paid leaves per month and overall satisfaction level (Chi-Square test)

The survey showed that respondents with 3 or more leaves had a higher level of satisfaction level compared to the respondents with 2 or fewer leaves. Pearson Chi-square analysis is carried out on the number of leaves and the overall satisfaction level.

Null hypothesis (H1) – The number of paid leaves does not have any significance on the job satisfaction level.

A 5X4 Chi-square test was carried out to evaluate if there is any statistically significant relationship between the no. of leaves and the satisfaction level at work. The relationship between these variables is found to be **significant** with Chi-square value X2 (12, N-62) = 22.10 & p-value = 0.036 as shown below.

Observed Values					
Leaves\V18	0	1	2	3	Total
1	1	2	0	0	3
2	5	0	0	0	5
3	19	5	1	0	25
4	16	2	2	2	22
5	2	1	2	2	7
Total	43	10	5	4	62

Expected Values				
Leaves\V18	0	1	2	3
1	2.08	0.48	0.24	0.19
2	3.47	0.81	0.40	0.32
3	17.34	4.03	2.02	1.61
4	15.26	3.55	1.77	1.42
5	4.85	1.13	0.56	0.45

Chi-Square calculated value			
0.56	4.75	0.24	0.19
0.68	0.81	0.40	0.32
0.16	0.23	0.51	1.61
0.04	0.68	0.03	0.24
1.68	0.01	3.65	5.31
Total = 22.10			

The critical Chi-square value with α= 0.05 probability (significant value) and df as 12 = 21.026

Since, the X2 (calculated) > the X2 (critical) or in other words, the p-value (0.036) < α, hence the **null hypothesis (H1) is rejected and the alternate hypothesis is accepted** i.e., the number of paid leaves significantly impacts the job satisfaction level.

[The other part of the H1 hypothesis testing through multiple regression is carried out later in this article and through multiple regression analysis also the null hypothesis H1 is rejected.]

B. Age group and overall satisfaction level (Chi-Square test)

The survey showed that respondents in the younger age group have a lower level of job satisfaction compared to the respondents in the older age group. Pearson Chi-square analysis is carried out on the age group and the overall satisfaction level.

Null hypothesis (H2) – The age group of workers does not have any significance on the job satisfaction level.

A 5X4 Chi-square test was carried out to evaluate if there is any statistically significant relationship between the age group and the satisfaction level at work. The relationship between these variables is found to be **insignificant** with Chi-square value X2 (20, N-62) = 11.54 & p-value = 0.483 as shown below.

Observed Values							Expected Value					Chi-Square calculated value			
Age\V18	18-25	26-35	36-45	45-55	Total		Age\V18	18-25	26-35	36-45	45-55	0.92	1.36	0.44	0.10
1	0	3	0	0	3		1	0.92	1.55	0.44	0.10	0.14	0.13	0.10	0.16
2	2	2	1	0	5		2	1.53	2.58	0.73	0.16	0.71	1.18	0.52	0.05
3	10	9	5	1	25		3	7.66	12.90	3.63	0.81	0.01	0.24	1.51	0.12
4	7	13	1	1	22		4	6.74	11.35	3.19	0.71	2.15	0.53	0.95	0.23
5	0	5	2	0	7		5	2.15	3.61	1.02	0.23	Total = 11.54			
Total	19	32	9	2	62										

The critical Chi-square value with α= 0.05 probability (significant value) and df as 12 = 21.026

Since, the X2 (calculated) < the X2 (critical) or in other words, the p-value (0.483) < α, hence the **null hypothesis (H2) is accepted** i.e., the age group of respondents significantly impacts the job satisfaction level.

To check the significance of the last four null hypotheses (H3 to H6) and part of H1, the multiple regression test is carried out and the results are as below:

Multiple Regression Analysis

The job satisfaction level (V18) is considered the dependent variable and the variables V1 to V17 (except V5) are the independent variables.

Multiple regression was carried out using MS excel considering a 95% confidence level. The results of the regression analysis are tabulated below.

Variables	Brief Description	Coefficients	Standard Error	t Stat	P-value	Standardized Coefficients	vif
	Intercept (constant)	-0.84	0.85	-0.99	0.33		
V1	Motivation level for work	-0.07	0.11	-0.64	0.53	-0.09	2.32
V2	Safety level of workplace	-0.00	0.18	-0.01	0.99	-0.00	2.06
V3	Confined space working confidence	0.44	0.14	3.02	0.00	0.39	2.01
V4	Overtime incentive	-0.01	0.12	-0.07	0.95	-0.01	2.53
V6	Quality of PPE	-0.05	0.15	-0.36	0.72	-0.05	2.37
V7	Quality of tools & tackles	0.06	0.12	0.54	0.59	0.08	2.33
V8	Safety briefing	0.26	0.14	1.83	0.07	0.31	3.41
V9	Job description clarity	0.05	0.12	0.37	0.71	0.05	2.35
V10	Toilet facility	0.07	0.12	0.65	0.52	0.07	1.57
V11	Resting area	0.05	0.12	0.44	0.66	0.06	1.87
V12	Drinking water facility	0.06	0.12	0.47	0.64	0.06	2.08
V13	No. of leaves	0.15	0.09	1.66	0.10	0.18	1.47
V14	Job security	0.01	0.11	0.08	0.93	0.01	2.02
V15	Knowledge on Min wages	-0.08	0.11	-0.72	0.48	-0.08	1.64
V16	Knowledge on welfare schems	-0.03	0.11	-0.25	0.81	-0.03	2.24
V17	Behaviour of supervisors	0.36	0.10	3.82	0.00	0.42	1.44

Significant at 95% confidence level   Significant at 90% confidence level

The regression statistics have an **R^2 value of 0.6241** and an **adjusted R^2 value of 0.4904**. It may be noted that studies that try to explain human behaviour generally have R^2 values of less than 50%.

Assumption Checking

Before proceeding with the results and conclusion part, checking was done for assumptions associated with the multiple regression test. All the major five assumptions of multiple regression are getting fulfilled. (Attached excel sheet may be referred for details)

Some important outcomes are as below:

- **Durbin Watson Test result**: 1.6208 (in the range of 1.5 to 2.5)
- **Variance inflation factor (vif)** for all independent variables are in the range of 1 to 4 i.e., less than 10.

Hence, the results of regression can be considered for bringing out a conclusion.

Results of Multiple Regression

❖ The behaviour of supervisors (V17) comes out as the most significant factor in the overall job satisfaction level of workers in the unorganized sector at a 95% confidence level. The value of the standardized coefficient (0.42) is also the highest for this factor. This indicates that the lesser the exploitation of workers by their supervisors, the higher the impact on their overall job satisfaction level.

❖ The other important factor impacting the job satisfaction level comes out to the confidence level while working in a confined space at a 95% confidence level. (Confined space is any area where there is limited entry/exit provision and has a danger of a lower level of oxygen, which is not suitable for continuous working. For e.g., manual scavenging inside sewers, inside the large chemical vessels and tanks etc) It is pertinent to note that hazards involved in confined space working constitute the highest proportion of fatalities among contract workers. Mostly the contract workers in construction and industrial area are exposed to working in these kinds of hazardous environments. The confidence level of workers involved in confined space jobs is highly significant with a standardized coefficient value of 0.39.

❖ The daily safety briefing given to the workers and the number of paid leaves provided to them are the other two significant factors in deciding the job satisfaction level of workers in the unorganized sector at a 90% confidence level. The clarity given to the workers on safety measures to be taken during their job is a very important aspect of working in the construction or industrial sector. It helps the comparatively lesser-educated workmen to understand the risks and hazards involved in their workplace. Another marginally significant factor is the number of paid leaves provided to the workers by their employer. This also confirms the result obtained above in the Chi-square test which showed that the no. of paid leaves has a significant impact on the job satisfaction level. Their respective standardized coefficients are 0.31 & 0.18.

CONCLUSION & INFERENCES

	Null Hypothesis	p-value	Significance
H1	The number of paid leaves does not have any significance on the job satisfaction level	0.036 (Chi-Sq) 0.10 (Mult-Reg)	Marginally significant
H2	The age group of workers does not have any significance on the job satisfaction level.	0.483	Insignificant
H3	The safety level at work in a confined space does not have any significance on the job satisfaction level.	0.00	Significant
H4	The quality of personal protective equipment provided to workers does not have any significance on the job satisfaction level.	0.72	Insignificant
H5	The behaviour of supervisors with the workers does not have any significance on the job satisfaction level.	0.00	Significant
H6	The drinking water facility provided to the workers does not have any significance on the job satisfaction level.	0.64	Insignificant

It can be concluded that null hypotheses are clearly accepted for H2, H4 & H6, and these are found to be insignificant. Null hypotheses are clearly rejected for H3 & H5 i.e., the alternate hypothesis is accepted. Linear regression was also done with the dependent variable as V18 & independent variables as V3 & V17 respectively to re-confirm the significance of p-values on the dependent variables. During linear regression also, the two independent variables V3 & V17 are found to be highly significant. (Attached excel sheet may be referred to for details) Further, at a 90% confidence level hypothesis H1 is also rejected, and alternate hypotheses are accepted.

During this whole exercise of studying the difficulties and challenges faced by the unorganized sector, the author gained a lot of fresh insights. To conclude, the author would like to make certain action plans which can be explored to ensure the social and financial inclusion of the unorganized sector:

1. A proper mechanism needs to be devised for proper identification and registration of the workforce involved in the unorganized sector.
2. Effective implementation of Minimum wages with regular monitoring can be effective. The onus of ensuring effective implementation needs to be vested on the principal employer who is contracting the job.
3. There are no firm rules and regulations in place for working hours and allowable overtime allowance applicable to them. A rule which is binding on the employer needs to be implemented for minimizing the exploitation of workers.
4. There are no proper agreements signed between the employer and employees of the unorganized sector, which makes it convenient for the employer to make discretionary rules and regulations regarding their leave policy, retrenchment, implementation of statutory norms of PF, ESIC etc. A rule of written agreements needs to be made mandatory to ensure that workers' interests are protected.
5. On the workplace safety, hygiene, and sanitation front, the situation needs a major shift. The responsibility of ensuring safe and hygienic working conditions should be vested upon the principal employer (or the government agency in absence of a principal employer) and it should be regularly inspected by setting up an inspection or vigilance agency.
6. Regular seminars or training sessions should be conducted for the unorganized sector workers to help them understand the various social security and welfare schemes offered by the government. The lack of knowledge hinders the workers from getting benefits from these welfare schemes.

7. Migrant labours mostly get neglected in the various state-level welfare schemes due to differences in domicile and working state. A clear framework needs to be finalized and effectively implemented to protect the rights of migrant workers.

LIMITATIONS & FURTHER SCOPE OF STUDY

The following limitations were faced during this study:

a) Very less participation of women workforce in industrial and construction industries limited the scope of study to only men. The few women workforces identified in the survey area were mostly engaged in housekeeping or clerical activity. Hence, they could not be included in this survey.

b) The fear of action or losing their current job was perceived to be a concern for the workers while giving their honest opinion on some sensitive questions.

c) The unorganized sector constitutes a lot of sectors. This study is limited to the industrial and construction sector. Other sectors can also be included in the study to gain a broader view of the difficulties and challenges of the unorganized sector.

d) The other limitation was the inability to use technology for the survey and this restricted the survey area to be constrained to Mumbai and nearby places only as the primary data was collected manually through printed forms.

Further scope for study

The author feels, in addition to the statistical studies carried out in this article; Factor analysis can also be attempted on the dataset since there are many independent variables. An attempt was made to reduce the number of independent variables to fewer factors using factor analysis. The basic level of factor analysis was carried out in MS Excel using the 'Real Statistics tool and the outcomes are indicated below. This study can be taken up for analysis of the data.

- The analysis started with allowing automatic selection of the number of factors in the factor analysis. The results of factor analysis are indicated below.

KMO

V1	V2	V3	V4	V6	V7	V8	V9	V10	V11	V12	V13	V14	V15	V16	V17	V18	
0.77	0.55	0.55	0.85	0.69	0.63	0.82	0.87	0.46	0.76	0.86	0.71	0.84	0.48	0.80	0.45	0.78	0.74

Eigenvalues and eigenvectors

5.54	1.70	1.51	1.39	1.10	0.99	0.89	0.70	0.68	0.55	0.42	0.36	0.31	0.29	0.23	0.19	0.16
-0.27	-0.09	-0.19	-0.39	-0.19	-0.02	-0.28	-0.06	-0.08	-0.17	-0.07	-0.62	-0.06	-0.08	-0.32	-0.09	-0.24

- The eigenvalues indicate that the 17 variables can be reduced to 5 factors which can explain 66% of the variance in the data.
- The KMO value of 0.74 also comes out to be significant (between 0.5 to 1.0) for carrying out the factor analysis.

Scree Plot

eValue	%	Cum %
5.54	33%	33%
1.70	10%	43%
1.51	9%	51%
1.39	8%	60%
1.10	6%	66%
0.99	6%	72%
0.89	5%	77%
0.70	4%	81%
0.68	4%	85%
0.55	3%	88%
0.42	2%	91%
0.36	2%	93%
0.31	2%	95%
0.29	2%	97%
0.23	1%	98%
0.19	1%	99%
0.16	1%	100%
17.00		

Scree Plot
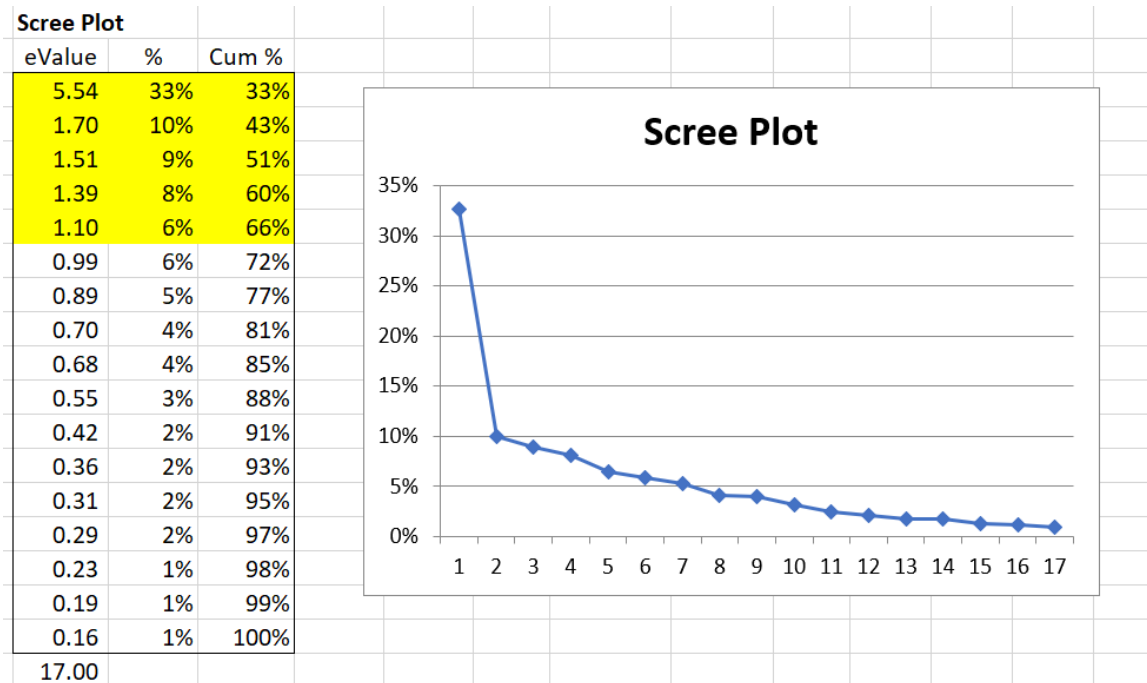
- As there were five factors with an eigenvalue of more than 1, the variables were assigned to these five factors based on their factor matrix coefficients. However, it showed that the fifth factor was constituting only one variable. Hence, it was decided to reduce the factors from 5 to 4 and again the variables were assigned to their corresponding factors based on the factor matrix coefficients.

Factor Matrix (rotated Varimax)

	F1	F2	F3	F4	F5
V1	0.17	0.10	-0.53	-0.61	-0.17
V2	-0.04	0.17	-0.05	0.07	-0.89
V3	0.22	-0.12	-0.66	-0.04	-0.43
V4	-0.42	0.30	-0.50	-0.25	-0.18
V6	-0.17	0.04	-0.82	-0.04	0.25
V7	-0.06	0.78	0.09	-0.15	-0.24
V8	-0.03	0.47	-0.64	-0.25	-0.14
V9	-0.27	0.50	-0.34	-0.20	-0.37
V10	-0.11	-0.06	0.08	-0.81	0.24
V11	-0.41	-0.05	-0.49	-0.05	-0.38
V12	-0.22	0.10	-0.36	-0.58	-0.37
V13	-0.65	0.17	-0.05	-0.30	0.01
V14	-0.28	0.34	-0.55	-0.08	-0.17
V15	-0.84	-0.10	-0.04	0.09	-0.03
V16	-0.22	0.456	-0.30	-0.460	-0.07
V17	0.07	0.76	-0.06	0.20	0.20
V18	0.03	0.60	-0.49	-0.10	-0.18
	1.84	2.53	3.19	1.93	1.76

Factor Matrix (rotated Varimax)

	F1	F2	F3	F4
V1	-0.80	0.09	-0.10	-0.18
V2	-0.22	0.18	0.14	0.71
V3	-0.67	-0.15	-0.19	0.41
V4	-0.57	0.27	0.44	0.07
V6	-0.64	-0.01	0.10	-0.05
V7	-0.08	0.78	0.11	0.07
V8	-0.70	0.44	0.05	0.07
V9	-0.475	0.484	0.32	0.21
V10	-0.27	-0.04	0.17	-0.72
V11	-0.50	-0.08	0.43	0.33
V12	-0.66	0.10	0.31	-0.04
V13	-0.16	0.16	0.67	-0.19
V14	-0.53	0.31	0.28	0.17
V15	0.05	-0.12	0.82	0.08
V16	-0.50	0.45	0.26	-0.19
V17	0.06	0.75	-0.12	0.01
V18	-0.52	0.57	-0.02	0.17
	4.20	2.42	1.98	1.53

This study can be taken ahead to bring some logical conclusions from factor analysis.

Acknowledgment

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