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Interrelationships Between Quality of Work Life Dimensions: An Internal Consistency Analysis among Foundry Employees in Kolhapur

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ABSTRACT

A nation's prosperity hinges on the quality of its human capital. In the 21st century, businesses recognize that their competitive edge lies not solely in products or technology, but in the unique expertise, skills, and knowledge of their workforce. As economist Arthur Lewis poignantly noted, "there are great differences in development between countries which seem to have roughly equal resources." This underscores the crucial role employee well-being plays in national success. When individuals face challenges at work or home, their psychological well-being can suffer, impacting both their professional and personal lives. Work-life balance issues, for instance, can directly affect the quality of output in industries like foundry work. Recognizing this, the concept of Quality of Work Life (QWL) emphasizes tailoring work environments to meet employee needs, ultimately fostering both happiness and productivity.

Keywords: Cultural Development, Qualitry of work life, Work environment, Employees happiness

1. INTRODUCTION

The multifaceted concept of Quality of Work Life (QWL) delves into the pursuit of meaningful work experiences. While encompassing a vast and continuously evolving spectrum of factors, it ultimately seeks to understand how an individual's professional environment shapes their overall life satisfaction. From the tangible elements of the workspace to the intangible aspects of employee behavior and knowledge, QWL recognizes the intricate interplay between work and well-being. Since its first appearance in academic literature, the definition and interpretation of QWL have been subject to ongoing exploration and varied perspectives. Yet, one central theme remains constant: the profound impact of good work quality on an individual's overall quality of life. High-quality work fosters personal fulfillment, while conversely, unsatisfactory work experiences can trickle down to affect other aspects of life. Thus, QWL stands as both a goal in itself and a crucial stepping stone towards a more fulfilling existence.

2. SIGNIFICANCE OF STUDY

Maharashtra boasts a flourishing industrial landscape, anchored by export-oriented units (EOUs) in districts like Sangli,

Satara, and Kolhapur. These powerhouses are supported by a network of smaller units in Pune, Mumbai, and Aurangabad, forming a robust ecosystem. Despite the dynamism of this sector, a crucial piece of the puzzle remains largely unexamined: the impact of local policies on the workforce, specifically within medium and small-scale enterprises (MSMEs). These "engines of growth," as recognized in Maharashtra's development plans, face peculiar challenges in employee retention. High turnover rates, absenteeism, and indiscipline often plague MSMEs, potentially stemming from rural-urban transitions, inexperience, lack of training, or leisure preferences. To untangle these complexities and identify industry-specific trends, exploring the interplay between local practices, worker demographics (like gender composition), benefits, and participation programs is crucial. By illuminating the link between workforce well-being and policy effectiveness, we can unlock the full potential of Maharashtra's thriving industrial backbone.

The Kolhapur foundry cluster thrives on a diverse network of support institutions, offering a helping hand with a myriad of challenges. From technological intricacies and raw material sourcing to skilled fabrication and rigorous testing, these agencies address any hurdle a foundry business might encounter. Financial guidance, labor management, and meticulous training programs further empower the cluster. Not to be forgotten are marketing platforms, complaint redressal mechanisms, and efficient information dissemination networks – all fostering an environment conducive to growth. At the helm of this ecosystem sits the Kolhapur Engineering Association (KEA), the cluster's apex body providing unified direction. Additionally, many foundries are active members of relevant forums like the Institute of Indian Foundrymen (IIF) in Kolhapur and regional industry groups, ensuring knowledge exchange and collective problem-solving.

3. OBJECTIVES OF THE STUDY

1. To analyze the Interrelationships between Key Dimensions of Quality of Work Life (QWL) in Foundry Employees.
2. To identify and Measure the Internal Consistency of QWL Constructs within the Context of Foundry Work.

4. HYPOTHESIS OF THE STUDY

H1: There is no significant relationship between Work Satisfaction (WSA) and Quality of Work Life (QWL).
H2 : There is no significant association between work satisfaction (WSA) and work stress
H3: There is a link between Job and Career Satisfaction (JCS) and Work Occupy (WO).

5. RESEARCH METHODOLOGY

The collected data underwent meticulous classification and tabulation, facilitating comprehensive analysis. To uncover meaningful insights, a diverse toolbox of statistical techniques was employed. This included the visual clarity of graphs, bar charts, and pie-charts, alongside essential quantitative measures like percentages, averages, and weighted averages. By rigorously interpreting these statistical results, we were able to draw informed conclusions about the workers' perspective on Quality of Work Life (QWL) in foundry units. Notably, this research embraced both quantitative data for objective measurements and qualitative data to capture the nuanced experiences and perceptions of the worker population. Ultimately, this study aims to illuminate the lived realities of foundry workers and contribute valuable information to QWL discourse.

Sample Design and Sampling Technique

The present study focuses specifically on the foundry industry within the Kolhapur district. To ensure representativeness, the scope was limited to units registered with the Kolhapur chapter of the Institute of Indian Foundrymen (IIF). While approximately 130 entities operate in the district, only those designated as active foundry units (excluding purely trading or raw material-supplying firms) were considered for participation. Employing the Taro Yamane formula, the research utilized a targeted sample size of 65 foundry units. Within these units, a total of 3,700 employees held regular positions. To ensure proportional representation across different industrial sectors within the foundry domain, a proportionate sampling method was employed to select respondents. This targeted approach ensures that the findings accurately reflect the experiences of employees within the Kolhapur foundry industry's core.

6. TOOLS AND MEASURES FOR DATA COLLECTION AND ANALYSIS

A) Scale adoption and Modification:

All the scale used in this research study is adopted from previous research which is published in well reputed journals.

Scale	Source
Quality of work life	Sultan O. Almarshad, (2015)

This article delves into the analysis and interpretation of data collected from 360 individuals working in foundry units across Kolhapur district. To gain a comprehensive understanding, the study relied on both primary data, gathered directly from respondents, and secondary data from relevant sources. Statistical software like MS-EXCEL and SPSS facilitated

data processing and analysis. Drawing upon appropriate statistical methods, we examined hypotheses to test specific relationships between variables. Additionally, descriptive analysis provided deeper insights into the characteristics and trends within the data. This article unfolds in two sections: the first focuses on hypothesis testing through rigorous statistical analysis, while the second illuminates the data through descriptive methods.

A. Statistical Data Analysis with hypothesis testing

Preliminary data analysis

This research study's preliminary data screening and analysis consisted of two steps: data cleansing and screening, followed by a description of the sample's demographic characteristics.

Cleansing and screening of data

The main step of the preliminary data analysis was to cleanse and screen the data in order to maximise precision and confirm that the assumption for the later statistical analysis had not been broken. The researcher examined whether the distributions of scores on variables were suitable for statistical analysis using various methods. Outliers were removed from the data analysis process. A response that appears to deviate significantly from other observations in the research sample is referred to as an outlier (Hair, 2011). Outliers must be identified since their presence in the sample will cause the overall research results to be skewed (Tabachnick, 1996).

To find the outliers in this data set The important phase of the preliminary data analysis was to cleanse and filter the data in order to enhance precision and guarantee that the assumption for the subsequent statistical analysis had not been broken. To facilitate comparison across variables, the data value of each construct/variable was transformed to a standard Z score. Outliers were identified as cases with standardised scores greater than 3.29 in absolute value (Zikmund, 2010) 390 samples were gathered by the researcher. To evaluate the Z score for each variable, all 390 instances were processed via the SPSS software version 20. In 27 situations, there was a potential outlier, and these outliers were due to an inconsistent input responder. Therefore, the researcher eliminated these 27 cases (27/390 = 6.92 per cent) from the sample. 363 cases were remaining. The desired sample size for this study was 360. Out of 363 valid cases, the researcher had chosen 360 cases using free online software www.randomizer.org.In this way, 360 cases were used to examine the research hypotheses.

Table No: 1 Demographic characteristics of respondents

Demographic Variables	Frequency	Percentage
Age		
18 to 30 yrs	150	41.70
31 to 40 yrs	143	39.70
41yrs and above	62	17.20
Total	360	100.00
Experience		
0 to 10 yrs	265	73.60
11 to 20 yrs	74	20.60
21yrs and above	16	4.50
Total	360	100.00

Model Fit Indices

Model fit indices are divided into two categories., one is badness for fit and other is goodness of fit. Badness of fit indices shall be less than 0.07 and goodness of fit indices shall be greater than 0.8.

Table No. 2 Quality of Work life (QWL) Convergent Validity
Factor Loading (λ), Average Variance Extracted (AVE) and Composite Reliability (CR)

Construct	Items	λ	AVE	CR
(SW) - Stress at work	**(SW 1)** - I am pressured to work long hours	0.933	0.806	0.943
	(SW 2) - I have unrealistic time pressure	0.935		
	(SW 3) - I have unachievable deadlines	0.836		
	(SW 4) - I often feel excessive levels of stress at work	0.884		
(WO) - Work occupy	**(WO1)** - I am able to achieve a healthy balance between my work and home life	0.637	0.658	0.850
	(WO3) - My organizations policy for vacations is appropriate for me and my family	0.896		
	(WO4) - Schedule of work and rest	0.876		
(JCS) - Job and career satisfaction	**(JCS 1)** - I am satisfied with my job	0.796	0.685	0.933
	(JCS 2) - Satisfaction of the company image	0.769		

	(JCS 3) - Satisfaction of the communitarian integration	0.815		
	(JCS 4) - Satisfaction of work responsibility	0.811		
	(JCS 5) - Workers commitment to work	0.791		
	(JCS 6) - Importance of the work and tasks	0.796		
	(JCS 7) - I am enthusiastic about my job	0.764		
	(JCS 8) - Satisfaction of salary	0.885		
	(JCS 9) - Salary equality	0.902		
	(JCS 10) - Recompenses for performance	0.895		
	(JCS 11) - I am satisfied with the career opportunities available for me here	0.851		
	(JCS 12) - I am satisfied with the training I receive in order to perform my present job	0.844		
(WC) - Working Condition	**(WC1)** - Freedom of expression	0.841	0.691	0.942
	(WC2) - Respect of the workers right	0.904		
	(WC3) - My work is as interesting and varied as I would want it to be	0.891		
	(WC4) - Salubrity level	0.845		
	(WC5) – Security equipment and collective protection	0.773		
	(WC6) – Quantity of workload	0.823		
	(WC7) – I have the opportunity to use my abilities at work	0.804		
	(WC8) – I have a clear set of goals and aims to enable me to do my job	0.791		
	(WC9) – I am encouraged to develop new skill	0.802		

For assessing convergent validity, we should look at three measures namely factor loading, average variance extracted and composite reliability.

Convergent Validity and Factor Loading (λ):
For measuring convergent validity, The value of the factor of loading must be larger than 0.7 as a first criterion. (Hair, 2011). Two items namely WC 2 and WC 5 were from work scope The item loading value was less than 0.7, thus it was removed. However, Researcher deleted these two from their respective construct, then these two constructs would not be under-identified constructs namely work scope. For performing CFA analysis, it is preferably at least three latent variables (items) for one factor (construct) (Hair, Multivariance Data Analysis, 2011, p. 676).

Convergent Validity and Average Variance Extracted (AVE):
The value of average variance extracted must be larger than 0.5 when assessing convergent validity.(Bagozzi, 1988) The extracted average variance value ranged from 0.658 to 0.806 for the constructs (see table 4.3) This attest to the constructs' convergent validity.

Convergent Validity and Composite Reliability (CR):
For measuring convergent validity, criteria third It is necessary for the composite dependability value to be larger than 0.7 (Gefen, 2000) The value of composite reliability varied from 0.850 to 0.963 for the constructs (see table) which affirm the constructs' convergent validity (Hair J. H., 2017).

Table No. 3Quality of Work life (QWL) Discriminant Validity
Correlation (r) and Square Root of Average Variance Extracted (SRAVE)

Factors	**SW**	**WO**	**JCS**	**WC**
(SW) - Stress at work	**0.897**			
(WO) - Work occupy	-0.067#	**0.811**		
(JCS) - Job and career satisfaction	-0.086#	0.755**	**0.827**	
(WC) - Working Condition	-0.070#	0.698**	0.802**	**0.831**

Correlation is insignificant at the 0.01 level, while ** Correlation is significant at the 0.01 level (2-tailed)

Discriminant Validity and Square Root of Average Variance Extracted (SRAVE):
The square root of average variance extracted (SRAVE) must be greater than the correlation between the construct and the other construct in the model to determine discriminant validity. (Fornell, 1981). In all of the examples above, SRAVE is larger than the correlation between the constructs (see table 2) As a result, all scales have discriminant validity mentioned Quality of Work life (QWL) model was supported.
There is a negative correlation between Work Occupy (WO), Job and career satisfaction (JCS), Work Condition (WC) with Stress at Work (SW). However, these all correlations were insignificant.
It has shown moderate positive correlation between Work Occupy (WO) with Job and career satisfaction (JCS) ($r = 0.755$, $p < 0.01$) and Work Occupy (WO) with Work Condition (WC) ($r = 0.698$, $p < 0.01$).
Most effective predictors of Job and Career satisfaction (JCS) was Work Condition (WC) ($r = 0.802$, $p < 0.01$).

Table No. 4 Quality of Work life (QWL) Confirmatory Factor Analysis (CFA)
Model Fit Indices

Chi-Square	df	P	CMIN/df	
1352.69	334	0.000	3.050	
GFI	AGFI	CFI	TLI	RMSEA
0.895	0.850	0.908	0.896	0.064

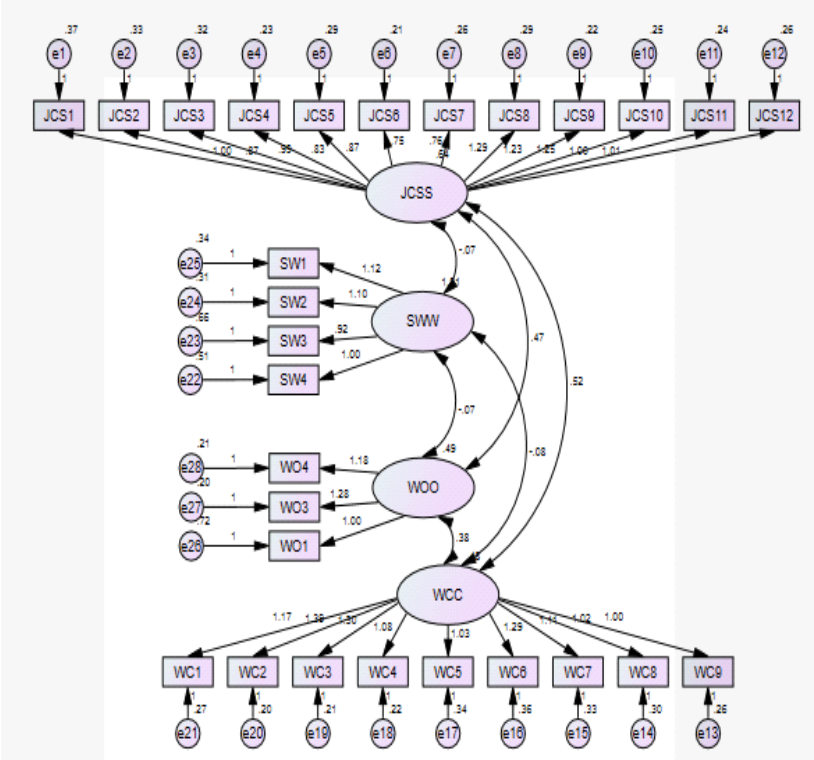

Figure: 1Unstandardised estimates: Confirmatory

Table No. 5 Factor Analysis: QWL Model Convergent Validity
Factor Loading (), Average Variance Extracted (AVE) and Composite Reliability (CR)

Table No. 6 Measures of Internal Consistency
Cronbach's Alpha (α) Reliability Analysis

Constructs/ Variables	Symbol	N of Items	α Value
(SW) - Stress at Work	SW	4	0.924
(WO)- Work Occupy	WO	3	0.836
(JCS) - Job and career Satisfaction	JCS	12	0.928
(WC) - Work Condition	WC	9	0.891

A measure's reliability relates to its consistency under a range of circumstances, including contestable instrument items, researcher bias, respondent bias, and unreliable individuals (Zikmund, 2010). Cronbach's Alpha coefficient is utilised to estimate the internal consistency and reliability of a collection of two or more construct indicators in this study (Hair, 2010). The alpha coefficient is usually in the range of 0 to 1. (Tabachnick, 2012). Based on 360 responses, the Cronbach's Alpha coefficient was computed for each construct. An alpha value above 0.7 indicates adequate reliability for a construct. Above table shows that alpha value for all contracts is above the threshold mark of 0.7. At the same values above 0.95 are not desirable because they indicates that all indictors variables are measuring the same phenomenon and therefore unlikely to be valid of the construct (Hair 2017). In above table all value was below than 0.95.

Normality of Distribution

There are two major classifications of Parametric and nonparametric tests are two types of hypothesis-testing techniques. Hypothesis-testing providers that use the parametric test presume that variables of interest are assessed on at least an interval scale. Hypothesis-testing producers that use the non parametric test presume that variables of interest are measured on a nominal or ordinal scale. Because virtually all parametric statistical procedures rely on the assumption that data follows a normal distribution, it's important to check the data's normality.(Malhotra, 2015).

Table No: 7 Normality of Distribution: Quality of Work life (QWL)
The Values of Skewness and Kurtosis of the Variables

	N	Skewness		Kurtosis			
Constructs/ Variables	Statistic	Statistic	Std. Error	Statistic	Std. Error	Skewness Z Score	Kurtosis Z Score
(SW) - Stress at Work	360	0.288	0.129	-0.827	0.256	2.240	-3.222
(WO)- Work Occupy	360	-0.416	0.129	0.756	0.256	-3.237	2.948
(JCS)- Job and career Satisfaction	360	-0.399	0.129	0.729	0.256	-3.103	2.843
(WC) - Work Condition	360	-0.412	0.129	0.789	0.256	-3.205	3.077

The normality of four variables of Quality of Work Life (QWL) was tested as the first stage in the data analysis. To assess if a distribution deviates considerably from normalcy, multiply the skew value by the standard error of the skew to get a Z score. When the sample size is less than 300, the skew is significant when the computed value is equal to or less than 2.58. Any result equal to or less than an absolute value of 3.29 has been judged to demonstrate substantial skewness when the sample size is higher than 300. (Tabachnick, 2012). Normal distribution of four variables of Quality of Work Life (QWL) were examined for skewness.

The One way ANOVA and Multiple Linear Regression paired are a parametric test hence it is essential to test normality before performing these test.

In this case sample size in 360 and z score value lies between absolute value of 3.29 hence we say that data is normally distributed and researcher can use parametric test.

B. Descriptive Analysis

Descriptive analysis is the process of transforming data in such a manner that it can be used to explain important features including central tendency, distribution, and variability (Zikmund, 2010). The descriptive statistic for each computational variable in the 360 respondents' sustainable consumption behaviour in terms of minimum, maximum, mean, and standard deviation is detailed below.

Table No.: 8 Quality of Work Life (QWL) Construct: Work Stress (WST)

Constructs/ Variables	**N**	**Minimum**	**Maximum**	**Mean**	**Std. Deviation**
(SW 1) - I am pressured to work long hours	360	1.00	5.00	2.87	1.61
(SW 2) - I have unrealistic time pressure	360	1.00	5.00	2.82	1.58
(SW 3) - I have unachievable deadlines	360	1.00	5.00	2.87	1.48
(SW 4) - I often feel excessive levels of stress at work	360	1.00	5.00	2.88	1.52
Stress at Work	**360**	**1.00**	**5.00**	**2.86**	**1.43**

Stress at workplace play a vital role in explaining Quality of Work Life (QWL). There are many foundry units related factors like long work hours, unrealistic time pressure, unachievable deadlines etc. contributing to increased stress levels among the workers in foundry industry. Mental distress symptoms, ulcer and chronic pain, anxiety, heart disease, and depression are all linked to these stresses.(Sabadra, 2009). Table 4.2.18 shows the Stress at Work (SW) on workers who

are working in foundry units in Kolhapur District. Stress at Work (SW) incorporated four items. The mean score of stress at work (SW) ranges from 2.82 to 2.88 With a standard deviation ranging from 1.48 to 1.61, the standard deviation is rather modest.

Long work hours have been shown in several studies to raise not just psychological stress but also workplace stress. (Hsu, 2019; Lee et al., 2017; Maruyama & Morimoto, 1996; Sato et al., 2009). In this research study researcher observed, the standard deviation was 1.61 and the mean 2.87. It indicates moderate level stress due to long work hours on workers. Hence, we can say that long work hours of worker is moderate issue in foundry industry of Kolhapur district.

One of the most crucial indicators of a difficult work is time pressure (Lehto, 1998). According to the findings of this study, the standard deviation was 1.58 and the mean 2.82. It shows that moderate level work stress arises due to unrealistic time pressure on workers. However unrealistic time pressure contributes at a low level to work at stress as compared to remaining three items. Hence, we can say that unrealistic time pressure on worker is moderate issue in foundry industry of Kolhapur district.

Very few research studies carried out on working with deadlines, particularly in relation to work stress (Arnarsdóttir, 2014). Working under a lot of pressure has been linked to stress. (Herrero et al., 2012). In this study found that the standard deviation was 1.48 and the mean 2.87.It indicates moderate level stress due to unachievable deadlines. Like above two elements, working under deadlines is moderate issue in foundry industry of Kolhapur district.

Perception of over workload, lack of structure in working hours, unrealistic demand, huge time pressure etc. contributing increase stress level at workplace (Bhui et al., 2016). When any person feels exhausted at work, he/she may become irritable, angry and lose confidence. It led to feeling anxious, depressed and loss of interest in work. In this study researcher noted that the standard deviation was 1.52 and the mean 2.88. It indicates moderate level stress due to unachievable deadlines. Notable point is perception toward excessive levels of stress contributes at a high level to work at stress as compared to remaining three items.

Hence, we can infer that workers in foundry industry of Kolhapur are undergoing moderate level of work stress.

Table No.: 9 Quality of Work Life (QWL) Construct: Work Occupy (WO)

Constructs/ Variables	N	Minimum	Maximum	Mean	Std. Deviation
WO1- I am able to achieve a healthy balance between my work and home life	360	1.00	5.00	4.00	1.10
WO3- My organizations policy for vacations is appropriate for me and my family	360	1.00	5.00	4.11	1.00
WO4- Schedule of work and rest	360	1.00	5.00	4.08	0.94
WO	**360**	**1.00**	**5.00**	**4.06**	**0.88**

Table no.9 shows work occupy of workers working in foundry units in Kolhapur district. Work occupy includes four items. The mean score of work occupy ranges from 4.00 to 4.11 with a standard deviation moderately low from 0.94 to 1.10.

Table No.:10 Quality of Work Life (QWL)
Construct: Job and Career Satisfaction (JCS)

Constructs/ Variables	N	Minimum	Maximum	Mean	Std. Deviation
JCS 1- I am satisfied with my job	360	1.00	5.00	4.14	1.01
JCS 2- Satisfaction of the company image	360	1.00	5.00	4.24	0.91
JCS 3- Satisfaction of the communitarian integration	360	1.00	5.00	4.14	0.98
JCS 4- Satisfaction of work responsibility	360	1.00	5.00	4.27	0.82
JCS 5- Workers commitment to work	360	1.00	5.00	4.20	0.89
JCS 6- Importance of the work and tasks	360	1.00	5.00	4.33	0.75
JCS 7- I am enthusiastic about my job	360	1.00	5.00	4.33	0.79
JCS 8- Satisfaction of salary	360	1.00	5.00	3.87	1.17
JCS 9- Salary equality	360	1.00	5.00	4.05	1.09
JCS 10- Recompenses for performance	360	1.00	5.00	3.97	1.12

JCS 11- I am satisfied with the career opportunities available for me here	360	1.00	5.00	4.09	0.94
JCS 12- I am satisfied with the training I receive in order to perform my present job	360	1.00	5.00	4.21	0.96
JCS	**360**	**1.00**	**5.00**	**4.15**	**0.81**

Research done by Luthans in point Employees with a high degree of job satisfaction have better physical health, learn new tasks more quickly, have fewer workplace accidents, and have less complaints. On the plus side, it was shown that work satisfaction and perceived stress had a negative relationship. In this research researcher noticed that standard deviation and mean scvore for employees satisfaction with job is 1.01 and 4.14 respectively. It shows foundry workers in Kolhapur district having high level of satisfaction with their current job.

In this study researcher observed that workers enthusiasticness about job having mean score 4.33 with 0.79 standard deviation. It shows workers are so much enthusiastic about their job which helps to increase their job satisfaction. As well as mean score for salary satisfaction is 3.87 with 1.17 standard deviation. it reveals moderate levels of satisfaction regarding salary. Hence we can say that there is no issue about workers enthusiasticness about their job but there is moderate issue of workers satisfaction regarding salary in foundry industry of Kolhapur district.

In this research researcher noticed, the standard deviation for workers satisfaction related with available career opportunities was 0.94 and mean 4.09. it shows very high level of satisfaction got by workers in foundry units due to available career opportunities. Hence we can say there is no any issue regarding career opportunities for foundry workers in Kolhapur district.

In this research standard deviation for satisfaction regarding training received is 0.96 and mean score is 4.21 which shows moderately high level of satisfaction in workers for training received by them. Hence we can say that there is no any issue regarding satisfaction of training received for present job by workers in foundry industries of Kolhapur district.

Time pressure was one of the most crucial indicators of a demanding work was identified.(Lehto, 1998). In this research researcher noticed, the standard deviation was 1.58 and the mean 2.82. It shows that moderate level work stress arises due to unrealistic time pressure on workers. However unrealistic time pressure contributes at a low level to work at stress as compared to remaining three items. Hence, we can say that unrealistic time pressure on worker is moderate issue in foundry industry of Kolhapur district.

Table No.: 11 Quality of Work Life (QWL) Construct: Work Condition (WC)

Constructs/ Variables	N	Minimum	Maximum	Mean	Std. Deviation
WC1- Freedom of expression	360	1.00	5.00	4.16	0.96
WC2- Respect of the workers right	360	1.00	5.00	4.06	1.06
WC3- My work is as interesting and varied as I would want it to be.	360	1.00	5.00	4.11	1.01
WC4- Salubrity level	360	1.00	5.00	4.20	0.88
WC5- Security equipment and collective protection	360	1.00	5.00	4.23	0.92
WC6- Quantity of workload	360	0.00	5.00	3.98	1.09
WC7- I have the opportunity to use my abilities at work	360	1.00	5.00	4.14	0.96
WC8- I have a clear set of goals and aims to enable me to do my job	360	1.00	5.00	4.15	0.89
WC9- I am encouraged to develop new skill	360	1.00	5.00	4.19	0.86
WC	**360**	**1.00**	**5.00**	**4.14**	**0.82**

There are so many factors which contributes to increase employees working condition. Such as freedom of expression, respect of workers right, work is interested or not, salubrity level, Security equipment and collective protection, workload, and opportunities to apply talents at work are all factors to consider. Employees' working conditions were included into nine things. Above table reveals that the mean working condition score varies from 3.98 to 4.23, with a relatively low standard deviation of 0.88 to 1.06.

In this research mean score for freedom of expression is 4.16 with standard deviation 0.96. which shows high level of freedom of speech is available for workers in foundry units of Kolhapur district. Hence we can say there is no any issue regarding freedom of expression of workers.

Human rights are legally protected.In this research mean score for respect of workers right is 4.06 with standard deviation 1.06 which shows moderately high respect towards workers right in foundry units of Kolhapur district. Hence there is no issue regarding respect of workers right. Researcher observed that mean score for work is interested as workers want is 4.11 with standard deviation 1.01 which shows there is availability of interested work as workers wants. Hence we can say there is no many issue regarding allocation of work as per interest.
Workers must be taught on how to operate the equipment since improper equipment handling can lead to accidents or performance deviations, regardless of how well-equipped the equipment is. Employee training should also include correct usage of protective equipment and personal protection. (Buble, 2006,p 437). In this research it is found that mean score for provision of security equipment and collective protection is 4.23 and standard deviation is 0.92 which shows there is proper availability of security equipment with collective protection in foundry units of Kolhapur district. Hence we can say that there is no any issue for provision of safety equipment as well as collective protection.
In this research researcher found mean score for quantity of workload is 3.98 with mean score of 1.09 which shows there is proper workload distribution has been done in foundry units of Kolhapur district. So there is no any issue for workload distribution for workers. with the help of this research researcher observed that mean score for having clear set of goals and aims is 4.15 with 0.89 standard deviation score. We can say that workers in foundry units of Kolhapur district having clear set of goals and aims which helps to increase their task performance. Hence there is no any issue regarding having clear set of goals and aims from workers point of view.

Table No.12 Quality of Work life (QWL) Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.919[a]	.844	.843	.31942	1.866

a. Predictors include: (Constant),WC, SW, WO
b. Dependent Variable: JCS

Table No. 13 Quality of Work life (QWL)
ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	197.195	3	65.732	644.239	.000[b]
	Residual	36.323	356	.102		
	Total	233.518	359			

a. Dependent Variable: JCS
b. Predictors include: (Constant), WC, SW, WO

Table No.14 Quality of Work life (QWL) Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.236	.100		2.374	.018		
	SW	.007	.012	.013	.600	.549	.992	1.008
	WO	.223	.027	.244	8.367	.000	.513	1.951
	WC	.723	.029	.733	25.060	.000	.511	1.956

a. Dependent Variable: JCS (Job and Career Satisfaction)

Table 14 displays the results of the multiple linear regression analyses.In prediction of Work Satisfaction (WSA), out of three components of model two components made significant contributions, accounting 84.4% of variance. It is to be noted here that there is still leave 15.6 % (100% -84.4 %) unexplained variables in this study. There might be more elements that impact job and career satisfaction. (JCS).
The modified R2 indicates how generalizable this model is. In this mode the difference between R and R^2 is small. Actual difference between these two values were 0.844 – 0.843 = 0.001 or 0.01%). This shrinkage indicates that the model would account for about 0.01 percent less variation in the outcome if it were generated from the population rather than a sample. The Durbin Watson statistic is a number that examines the residuals from a statistical regression study for autocorrelation. The value less than 2 indicates that there is no autocorrelation in the sample. In this model, Durbin Watson is 1.866.
Table 14 reports an analysis of variance. The F-ratio is the most essential component of table 12. F is 644.239 for this data, which is significant at p0.001. If the null hypothesis were true, this result of the ANOVA test informs us that there is less than a 0.1 percent probability that an F-ration this large would occur. As a consequence, the researcher might deduce that the aforementioned regression model produces much superior predictors of Job and Career Satisfaction (JCS).

In other word, researcher can say that the regression model overall predicts Job and Career Satisfaction (JCS) significantly well. Table 13, The connection between Job and Career Satisfaction (JCS) and all three predictors is revealed by the b-values. Because all of the b-values are positive, the researcher may conclude that there is a positive link between the two variables the predictor and outcome. For above data, two predictors have positive b-values indicating positive relationships with Job and Career Satisfaction (JCS). These two variables are namely Work Occupy (WO) and Work Condition (WC) significant at $p< 0.01$. One variable, Stress at Work (SW) shows insignificant relation.

Work Occupy (WO) (b = 0.223): Job and Career Satisfaction improved by 0.223 units when Work Occupy increased by one unit. Only if the effects of Work Condition are maintained constant is this interpretation valid.

Work Condition (WC) (b=0.723): This value indicates that the Work Condition (WC) increased by one unit, Job and Career Satisfaction increase 0.723 units. Only if the consequences of Work Occupy are maintained constant is this view valid.

The following regression equation helps explain it:

$Y = a + b_1*X_1 + b_2*X_2 +. .. + b_p*X_p$

$Y= a + bX + e$

Y= Job and Career Satisfaction (JCS)

a = constant

X_1= Work Occupy

X_2 = Work Condition

b = regression of coefficient of X

e = an error term with a mean of 0 and a normal distribution (usually e is assumed to be 0)

Y Job and Career Satisfaction (JCS) = 0.236+ 0.223 (Work Occupy) + 0.723 (Work Condition)

Here two null hypotheses are rejected and alternate hypothesis is supported by the data. It is concluded that:

- **H1:** There is no significant association between work satisfaction (WSA) and work stress ($p > 0.05$, $p = 0.549$) since the null hypothesis was not rejected ($p > 0.05$, $p = 0.549$). (SW).
- **H2:** The null hypothesis is rejected (p 0.05, $p = 0.000$), and the data supports the alternative hypothesis. Job and Career Satisfaction (JCS) and Work Condition have a substantial connection (WC).
- **H3:** The null hypothesis is rejected (p 0.05, $p = 0.000$) and the data supports the alternate hypothesis. There is a link between Job and Career Satisfaction (JCS) and Work Occupy (WO).

Hypotheses Testing Summary

1) Work Stress(SW) & Work Satisfaction	**2) Work occupy (WO) & Job and career Satisfaction (JCS)**	**3) Work Condition(WC) & Work Satisfaction**

Two null hypotheses are rejected and alternate hypothesis is supported by the data. It is concluded that:

H1: There is no significant association between work satisfaction (WSA) and work stress ($p > 0.05$, $p = 0.549$) since the null hypothesis was not rejected ($p > 0.05$, $p = 0.549$). (SW).

H2: The null hypothesis is rejected ($p < 0.05$, $p = 0.000$) and the data supports the alternate hypothesis. Job and Career Satisfaction (JCS) and Work Condition (WC) have a strong connection.

H3: The null hypothesis is rejected ($p < 0.05$, $p = 0.000$), and the data supports the alternative hypothesis. There is a link between Job and Career Satisfaction (JCS) and the type of employment you do (WO).

7. CONCLUSION

This article unveils the initial phase of data analysis, focusing on unveiling the characteristics of the collected information. Leveraging data tables, bar charts, and their interpretations, we present the responses both numerically and as percentages, offering a clear picture of the sample's distribution. Moving beyond preliminary exploration, the article delves into data cleaning and screening techniques, ensuring the reliability and accuracy of the analysis. Additionally, we explore the demographic features of the respondents, providing valuable context for interpreting the findings. Finally, we proceed with the estimation of the measurement model using Confirmatory Factor Analysis (CFA). For this study, a specific model was proposed with Quality of Work Life (QWL) as the central construct, encompassing four sub-dimensions: Work Stress (SW), Work Occupy (WO), Job and Career Satisfaction (JCS), and Work Conditions (WC). Existing scales developed by previous researchers were adapted for this study, and subsequent CFA analysis aimed to validate their applicability within the Indian context.

This study's investigation into the interconnectedness of quality of work life (QWL) dimensions among foundry employees in Kolhapur revealed a complex tapestry of internal consistencies. While some dimensions, like work stress and work conditions, displayed strong negative correlations, others, like job and career satisfaction and work occupy, exhibited positive associations. These findings highlight the multifaceted nature of QWL and the importance of considering its various components in a holistic manner. Understanding these internal relationships serves as a crucial step towards improving employee well-being and building a more robust foundry industry in Kolhapur.

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