

# Measuring Quality of Work Life among Workers in Carpet Industries of Jaipur

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## Abstract

In the present era, the multifaceted concept of quality of work-life (QWL) of workers is the prime focus of many academic papers with an attempt to relate it to different experimental and statistical settings. Worker's QWL is an important factor that may affect organizational performance and success significantly. There is a significant contribution of small scale industries to the economy of India. The productivity of a firm and standard of living of people are directly linked with QWL and may vary from industry to industry. The study aims to evaluate QWL among carpet weavers of Jaipur. The data were collected visiting twenty workshops and 120 randomly selected female/male weavers were surveyed using a questionnaire. The result showed overall dissatisfaction was associated with the work environment among the weavers. Un-ergonomically designed workstations can be the major cause of occupational discomfort which may further responsible for stress and fatigue.

Keywords: QWL; discomfort, workplace, carpet industry

## 1. Introduction

Indian heritage hand-crafted work and handicrafts are renowned all over the world. Handicrafts like metal crafts, hand-woven carpets, tufted carpet, hand block printing, blue pottery, textile screen printing, embroidery, stone carving, gems and jewelry, leather crafts, bamboo craft, woodcraft account for 50% of the national product by the informal sector. Handwoven carpets have a massive market demand mainly in American markets. However, the exports in European countries have downgraded in recent years. Figure 1 shows the country-wise export of hand-knotted carpets. As it could be evident that the largest importers of Indian carpets are the USA and UAE. Poor working environment, labor law issues, and lower wages are the key problems, the industry is facing. Work-related musculoskeletal disorders (MSDs) and other health problems are most common among weavers.

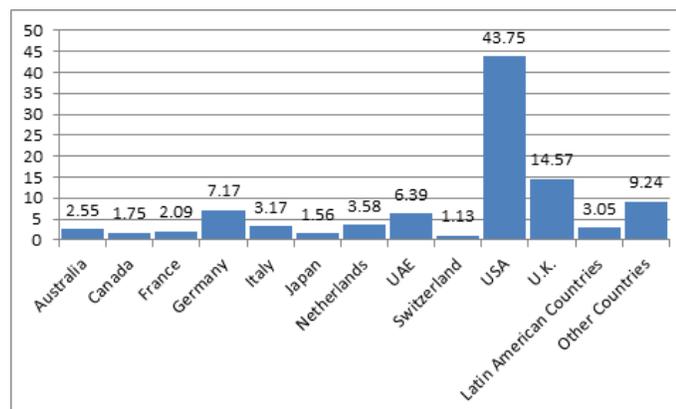


Figure 1. Export of handicrafts from India in 2015-16 (Source: EPCH, 2016a)

Figure 2a depicts the value of export (in Rs./US\$) of hand-knotted carpet in the past three years. Figure 2b shows the continual increase in the export of handicrafts from its establishment in 1986. It was observed that high risks of occupational injuries are involved in hand-woven carpet weaving (Afshari et al., 2014; Chaman et al., 2015; Choobineh et al., 2004; Singh et al., 2018a) [1-4]. If ergonomic principles could be integrated to conduct research on designing efficient workstations and hand tools, the risk of occupational injuries may be reduced.

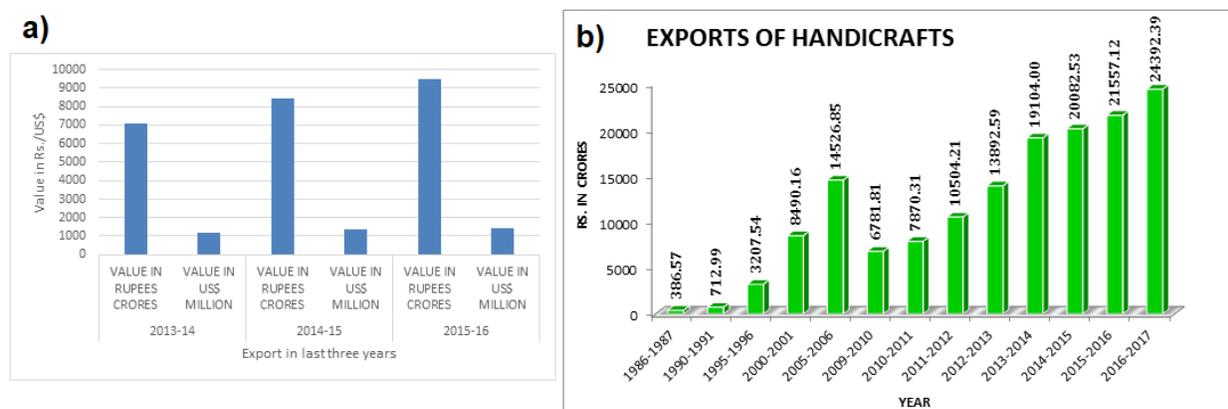


Figure 2. Value of export (in Rs./US\$) of hand-knotted carpet in the past three years (Source: EPCH, 2016b).

The informal sector provides employment, but in most cases the jobs are low-paid and the job security is poor. Informal sector employment is a necessary survival strategy in countries that do not have social safety nets such as unemployment insurance or where wages and pensions are low. During the period of the establishment (1986–1987) of the export promotion council for handicrafts, the export of Indian handicrafts was approximately Rs. 386.57 crores. It has been increasing continuously and reached the point of Rs. 21457.91 crores in year 2015–2016 (EPCH, 2016a) (Figure 2b) [5]. Table 1 shows the item-wise share export of Indian handicraft from 2014–15 to 2015–16. According to the provisional data available, the exports of Handicrafts have shown an increase of US\$231.17 million, i.e., the exports increased by 13.5% in one year (EPCH, 2016b) [6]. The export of carpets in 2015-16 was Rs. 70,912 lacs which was 0.0413% of India’s total exports (EPCH, 2016c) [7].

Table 1. Export of Indian handicraft from 2014–2015 to 2015–2016 (Source: EPCH, 2016b)

Items	2014–2015 US\$ in millions	2015–2016	Increase/ decrease in %
Art metal wares	909.45	612.75	(-) 32.62
Wood wares	545.86	597.01	(+) 9.37
Hand printed textiles and Scaraves	114.68	205.35	(+) 79.07
Embroidered and crocheted goods	591.69	680.34	(+) 14.98
Shawls as art wares	1.84	0.56	(-) 69.55
Zari and zari goods	14.02	17.36	(+) 23.79
Immitationjewellery	317.85	322.95	(+) 1.61
Miscellaneous handicrafts	767.76	841.28	(+) 9.58
Total	3263.14	3277.6	(+) 0.44

The quality of work-life (QWL) emerged to end exploitation and injustice on the part of employers. QWL is an indicator of how free the society is from exploitation. Different kind of factors that determine such an experience at work. QWL has also been viewed in a variety of ways that includes a set of industrial interventions to empower employees, and the type of work-life among workers. Thus, by the increasing workforce in handicrafts occupations, significant considerations about QWL in these environments should be taken into consideration during the present time.

The elements that are relevant to an individual's QWL include the task, the physical work environment, social environment within the organization, administrative system, and relationship between life on and off the job (Rose et al., 2006) [8]. Das and Sengupta (1996) [9] advocates the application of human factor engineering in designing of work system that reported to bring an effective balance between kind of task and worker.

According to Gani and Ahmad (1995) [10], the quality of work-life concept is the value of treating the worker as a human being and emphasizing changes in the socio-technical system of thorough improvement. Milkovich and Boudreau (1994) [11] defined absenteeism as the frequency and/ or duration of work time lost when employees do not come to work. Kavoussi et al. (1978) [12] compared the unauthorized absenteeism rates in two large textile factories at Isfahan in Iran. The working conditions of the factory were unsatisfactory, unlike the control factory. Kanten and Sadullah (2012) [13] investigated the significant relationship between the dimension of QWL and work engagement. Rice et al. (1985) [14] emphasized the relationship between work satisfaction and the quality of people's lives. Tabassum et al. (2011) [15] studied reveals that a significant difference exists between male and female employees QWL and in the following factors of QWL; adequate and fair compensation, flexible work schedule, and job assignment, attention to job design, and employee relations.

Needless to say, the handicraft work requires high manual labor and effort. Further, it has been reported in several studies that un-ergonomically designed workplace causes physical (like backaches, hearing problem, breathing problem, joint pain, etc.) and emotional stress, lower productivity, and poor QWL among workers (Choobineh et al., 2007; Nurmianto, 2008; Purnawati, 2007; Singh et al., 2019) [16-20].

According to Mustafa et al. (2009) [21], incorporation of ergonomics in designing tools would provide many effects on work satisfaction, health, security, work efficiency, and as a result, it would improve QWL. Based on literature it would not be wrong to say that, the use of Socio-economic factors will support as a key bone for QWL in the betterment of workers in industries.

This research aimed to evaluate the QWL for the weavers in the carpet manufacturing sector of Rajasthan. In achieving these objectives, the study hypothesizes that the level of dissatisfaction is associated with weekly workload among the weavers. Also, we evaluated the association of dissatisfaction with higher age and experience in the same profession.

## **2. Research methodology**

The present research methodology adopted the surveying of the sample population by questionnaire. According to survey responses, statistical inferences were made considering various parameters. The subjects were interviewed for personal characteristics that include general information and socio-economic conditions, viz. age, gender, marital status, qualification, salary, experience, health habits, etc. Self-enumeration was difficult, therefore, interview assistance was provided.

## 2.1. Participants

The study was conducted within the rural area of Jaipur and its nearby districts. 120 weavers (89 female and 31 male) were randomly selected from 20 workshops for the survey. The weavers sit next to each other and wove the carpet as per the provided map using hand tools. The hand tools include a weaving knife, weaving comb, and a beater. Long hours of the same squat posture could cause discomfort in different body regions.

## 2.2. Questionnaire Study

In most grass-root studies, the survey research method is widely used for empirical research and considered the most appropriate method/ direct measurement (Malhotra and Grover, 1998) [22]. The researchers have used the primary data that was collected using a structured questionnaire.

## 2.3. Statistical Analysis

Chi-square test was adopted to examine the nature of the association between gender and job satisfaction. It was also used to test the significant association between the level of dissatisfaction and weekly workload. All of these data were analyzed using the IBM Statistical Package for Social Science (SPSS) for Windows version 22.0 (IBM SPSS Statistics for Windows Version 22, Armonk, NY: IBM Corp).

## 3. Result and data analysis

### 3.1. Measuring the quality of work life among carpet weavers

The study population comprised 120 weavers (89 female, 31 male). To measure the quality of work life among weavers, the study subjects according to personal characteristics were considered and analyzed.

#### 3.1.1. Respondents by personal characteristics

Table 2 shows the demographic and personal characteristics of the sample studied. The data about the personal characteristics indicate that the majority (53.33%) of weavers belong to the age category of 31-40 years whereas only 5.01% of workers belong to the age above 50 years.

Table 2. Demographic and personal characteristics

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<i>S.no.</i>	<i>Characteristics</i>	<i>Number of workers (N=120)</i>	<i>Percentage (%)</i>
1	<i>Age(in years)</i>		
	<30	29	24.16
	31 to 40	64	53.33

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	41 to 50	21	17.50
	>50	6	5.01
2	<i>Gender</i>		
	Male	31	25.83
	Female	89	74.17
3	<i>Marital status</i>		
	Married	103	85.83
	Unmarried	17	14.17
4	<i>Qualifications</i>		
	Upto 10 <sup>th</sup> std.	112	93.34
	12 <sup>th</sup> std.	7	5.83
	College dropout	1	0.83
5	<i>Monthly income</i>		
	Less than Rs. 5000	98	81.67
	Rs. 5000 to Rs. 8000	18	15.00
	More than Rs. 8000	4	3.33
6	<i>Work experience</i>		
	<5 years	21	17.50
	5-10 Years	68	56.67
	>10 Years	31	25.83
7	<i>Smoking habit</i>		
	Smoker	15	12.50
	Non smoker	105	87.50

### 3.2. Chi-square analysis

The Chi-square test is the parametric approach used to test the association between different variables. Before performing the analysis, the data were tested for normality using PP and QQ plots. The data was found normal in most of the cases for parametric approximation.

#### 3.2.1. Significant relationship between gender and job satisfaction

The chi-square was used to test the significant relationship between gender and job satisfaction among the weavers. Table 3 depicts the relationship between gender and job satisfaction among the weavers. The result from the analysis indicates that for a non-significant chi-square value of 5.18 at 95% level of confidence. Therefore, it can be interpreted that there is no association between gender and job satisfaction

Table 3. Association between gender and job satisfaction

<i>Job satisfaction</i>	<i>Strongly satisfied (SS)</i>	<i>Satisfied (S)</i>	<i>Neither satisfied nor dissatisfied (NSND)</i>	<i>Dissatisfied (D)</i>	<i>Strongly dissatisfied (SD)</i>	<i>Total</i>
<i>Gender</i>						
Female	2	9	13	25	40	89
Male	0	8	5	8	10	31
<i>Total</i>	2	17	18	33	50	120
<i>Chi -square value</i>						5.18

### 3.2.2. Significant relationship between weekly workload and job dissatisfaction

Table 4 represents the significant association between weekly workload and level of dissatisfaction regarding the working environment. It is evident that there is a significant association between weekly workload and level of dissatisfaction regarding the working environment. So, the weekly workload does influence the level of dissatisfaction regarding the working environment.

Work Load/week (Hours)	Level of Dissatisfaction			$\chi^2$	P
	Somewhat Satisfied 1-3	Dissatisfied 4-7	Highly Dissatisfied 8-10		
Less than 30	18	3	8	21.127	0.000*
31 to 40	15	21	28		
41 to 50	4	8	9		
More than 50	0	1	5		

The average experience of participants complaining of feeling high dissatisfaction with work environment was higher (14.43 years) as compared to participants feeling moderate or low dissatisfaction (Figure 3). 61% of the participants were highly dissatisfied with working environment; 18% participants were somewhat satisfied with the working environment. The higher dissatisfaction towards the working environment was seen among the worker with higher experience. The overall perceived rating for dissatisfaction with the work environment among the weavers was 7.1. Un-ergonomically designed workstation is the major cause of many musculoskeletal disorders that are responsible for unnecessary stress and fatigue. So improved working conditions will help to reduce MSDs and better efficiency in work performance.

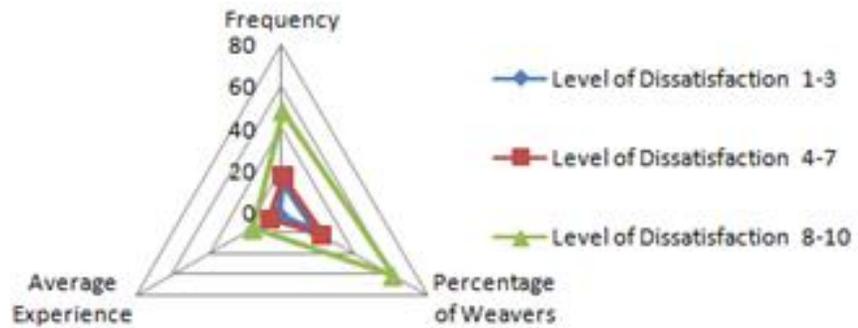


Figure 3. Level of dissatisfaction with working environment w.r.t average experience.

The results of this study were intended to assist other researchers in identifying key workplace issues faced by the weavers, in order to develop strategies to address and improve the QWL conditions for the weavers within each of the carpet manufacturing organizations. The sense of dissatisfaction was seen regarding the earnings since there is not much difference in the other job requiring less physical effort and fatigue. This could be due to the difference in the level of education since 93.34% weavers were less than secondary.

From the analysis, it was seen that for this particular nature of the job, a properly designed workstation and suitable working conditions are required to improve the QWL of female weavers. It was also observed during the site visits and surveys, that the working environment is extremely poor in weaving workshops with-in the villages due to improper workstation design and lack of adequate infrastructure. Ergonomic intervention and redesign of workstations may reduce the MSDs and certainly help in improving working environment which in turn improve the QWL for weavers (Singh et al., 2018b) [23].

#### 4. Conclusion

Carpet sector is part of the handicraft industry and a significant part of the Rajasthan rural population is dependent on carpet weaving for livelihood. The carpet weaving sector being unorganized sector suffers from the constraints of illiteracy, absence of proper incentives, poor exposure to new technologies and absence of market intelligence. In this study, QWL was studied using questionnaire survey methodology, and factors responsible for QWL were found out and analyzed in carpet weaving sector.

Overall, it can be concluded that the female weavers are significantly influenced by the use of improperly designed hand tools. The improvement in QWL should be focused by working primarily in three major phases, viz. occupational health care, new technological interventions, and improvement in the existing workstation, working hours (adequate break in the workday). Female workers having the burden of family and household should be uplift by installing weaving looms at their homes.

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