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Quantile Regression Approach for Quality of Life of Construction Labourers in Varanasi City, India

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Abstract

The aim of this paper is to investigate the quality of life of construction labourers in the city of Varanasi, Uttar Pradesh, India. A cross-sectional study has been conducted and the factors associated with the quality of life are determined by using a quantile regression approach. 508 construction labourers were included in the study, of which 51.3% below 34 years age. The investigation shows that the major factors that influence and decide the quality of work life of construction labours are viz., job status, duration of work as a labourer, distance from working place and income. The quantile regression approach may be considered an alternative approach for analysing quality of life related data.

Keywords: WHOQOL-BREF, environmental, psychological, physical, social, well-being.

1. Introduction

The construction sector has been emerged as an important sector of the economy and contributes significantly to the gross domestic product (GDP) of India. Since the early fifties, a sizeable proportion of the aggregate investment in India has most seemingly been going to construction. Most of the workers in the construction sector come from the rural areas. Construction workers are often engaged in risky work than workers engaged in other industries, particularly younger construction workers. These workers have a greater risk of developing health disorder as compared to other workers. The construction industry generates the second largest employment opportunities in India after agriculture sector. In India, there are more than 20 million labourers are working in this industry. Globally, in urban economy 17% of all work-related fatalities are associated with this sector (World Economic Forum Agenda 2017).

There are many studies concern with the working conditions and quality of life of construction workers in developed and developing countries of the world. Danso (2012) empirically explored the construction workers' satisfaction levels with respect to different dimensions of work provision

requirement in the context of Ghana's construction industry. Tadesse and Israel (2016) assessed prevalence and factors associated with occupational injuries among building construction workers in Addis Abba, the capital city of Ethiopia.

Patel et al. (2012) had evaluated the working conditions of male construction worker and its impact on their life in the Surat city of Gujarat. Haque and Rehman (1999) assessed the quality of working life and job behavior of industrial workers (public/private). Premchander et al. (2014) studied the socio-economic status of migrant construction workers in Bangalore. Tikooand and Meenu (2013) reported the work place environment parameters and occupational health problems in women construction workers in India. Tiwary et al. (2012) studied the socio-economic status of construction workers and availing of the social security measures by this working group. The workers engaged in this industry are victims of various occupational disorders and psychosocial stresses, which reduce their productivity (Wang et al. 2007). Dewa et al. (2007) also highlighted that poor working conditions, exploitation, increased workplace insecurities, and lack of health benefits can lead to poor quality of life (QOL) and psychological distress among workers. Mathew et al. (2016) investigated quality of life and probable psychological distress among male workers at a construction site Kolar district, Karnataka, India.

Quality of work life is not a unitary concept, but has seen as incorporating a hierarchy of perspectives that not only include work based factors, such as job satisfaction, satisfaction with pay and relationships with work colleague, but also factors that broadly reflect life satisfaction and general feelings of well-being (Donna and Griffin 1999). There are many possible potential factors significantly associated with the quality of life of construction workers.

This is one among the few studies describing the quality of life of construction workers in India. The objective of this paper is to assess the quality of life of construction labourers of Varanasi city of Uttar Pradesh, India. The information could help the policy makers for designing appropriate policies and schemes for enhancement of quality of life with fullest coverage of social sector benefits.

The World Health Organization Quality of Life-100 allows detailed assessment of each individual facet relating to quality of life. In certain instances however, the WHOQOL-100 may be too lengthy for practical use (WHO 1995). The WHOQOL-BREF Field Trial Version has therefore been developed to provide a short form quality of life assessment that looks at domain level profiles, using data from the pilot WHOQOL assessment and all available data from the Field Trial Version of the WHOQOL-100. The WHOQOL-BREF has been used for data collection and it has contains a total of 26 questions (WHO 1996; Kuyken et al. 1994). The following listed items have been classified into four domains i.e. physical health, psychological, social relationship and environmental. Domain Facets incorporated within domains are as Figure 1.

1) Physical health: (i) Activities of daily living, (ii) Dependences on medicinal substances and medical aids, (iii) Energy and fatigue, (iv) Mobility, (v) Pain and discomfort, (vi) Sleep and rest and (vii) Work Capacity.

2) Psychological: (i) Bodily image and appearance, (ii) Negative feelings, (iii) Positive feelings, (iv) Self-esteem, (v) Spirituality / Religion / Personal beliefs and (vi) Thinking, learning, memory and concentration.

3) Social relationships: (i) Personal relationships, (ii) Social support and (iii) Sexual activity.

4) Environment: (i) Financial resources, (ii) Freedom, physical safety and security, (iii) Health and social care: accessibility and quality, (iv) Home environment, (v) Opportunities for acquiring new information and skills, (vi) Participation and opportunities for recreation / leisure activities, (vii) Physical environment (pollution / noise / traffic / climate) and (viii) Transport.

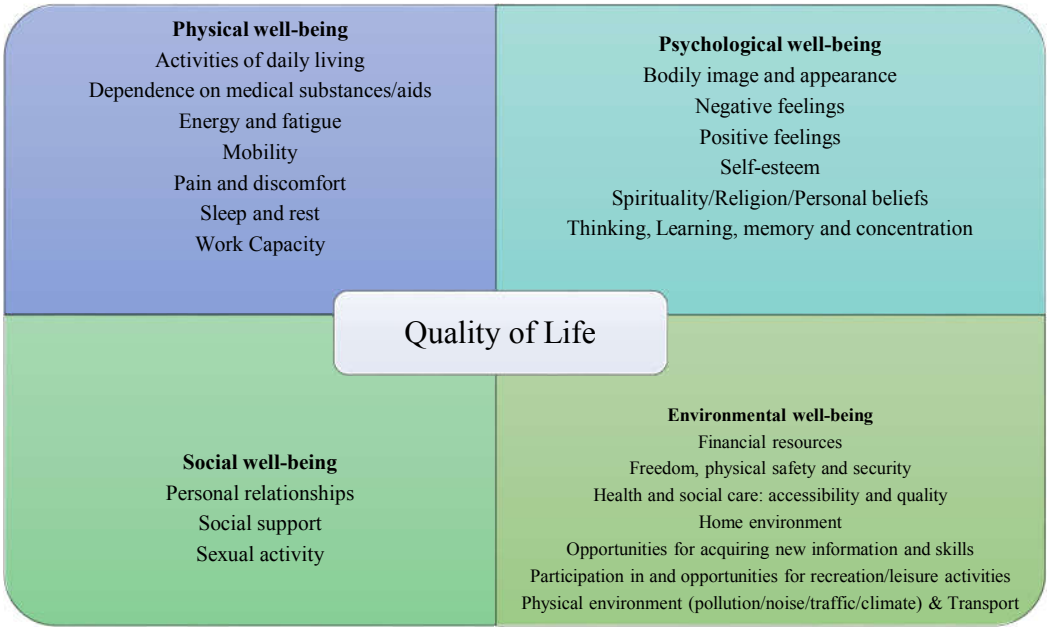

Figure 1 Domain model for Quality of Life

2. Study Design, Area and Period

A construction site based cross sectional study was conducted in Varanasi city, Purvanchal region of Uttar Pradesh, India. The data have been collected during June-September, 2016 from the male construction workers. The study was carried out in the construction site particularly indifferent wards and labourer mandi's of Varanasi city. The study population was confined to male labourers only currently either working in the construction site or seeking for work in the construction sectors.

A pre-tested and structured interview questionnaire was used to collect the data. The questionnaire contained detailed information on five sections viz., section-I general Information related to Socio-economic and demographic characteristics of construction workers, section-II: sanitation, health and food consumption related information, section-III: working place and environment, section-IV: quality of life of labourers and section-V: labourer and government. An in-depth interview technique was adopted for the collection of data.

There are 508 samples were surveyed by taking into account the expected proportion of construction worker either working in the site or seeking for work i.e., $p = 0.15$ reported by NSSO Employment and Unemployment status of the state, 5% level of significance, 5% margin error, 10% non-response rate and 2 design effect.

A multi stage convenient sampling was used to select the study participants. As per labor office record, Varanasi city was partitioned into 7 sectors as Lanka, Bhelupur, Sigra, Sarnath, Chetganj, Cant and Rajghat. In the first stage, 8 (i.e., 10% of the total from each sector) wards were selected by simple random sampling using lottery method, and in the second stage 17 construction sites were selected from the wards of the selected sites using proportional to size method.

An utmost care has been taken to maintain the quality of data. A pretesting and pilot survey was conducted to check the appropriateness of the questions in the interview schedule. The collected data has been edited and processed at two levels in order to minimize the inconsistencies and missing

information. Also internal consistency and to check the reliability of the scale Cronbach's alpha was computed.

The ethical issue is maintained during the process of data collection. The purpose of the study has clearly been explained to the respondents, and prior approval has been taken before starting the interview and the confidentiality of respondents is ensured. Proper clarification and appropriate information are provided to the respondents in case of any kinds of misunderstanding.

Statistical analysis was carried out in two stages: firstly; the sample characteristics of the construction labourer was assessed for each variable using descriptive statistics. In the second stage of analysis the factors associated with quality of life of construction labourer was determined using quantile regression.

We additionally performed a multiple linear regression using the ordinary least squares (OLS) estimator to provide a basis for comparison with the quantile regression

The emerging quantile regression (Koenker and Bassett 1978) has many advantages over linear regression model, viz., in quantile regression we can assess how the centre of a conditional distribution varies with changes in subject characteristics, and one can examine how any percentile of the conditional distribution is affected by changes in subject characteristics.

The quantile regression is commonly used to understand the relationship between the response (dependent) and predictor (independent) variables over the entire distribution of the dependent variable and not just at the conditional mean. Here we have considered linear regression (OLS) and quantile regression to estimate the effect of a covariate on the conditional mean and quantile respectively.

The following basic model will be used for the analysis is

$$Y_i = \alpha + \beta X_i + \gamma D_i + \varepsilon_i, \; i = 1, 2, ..., n, \tag{1}$$

where Y_i is the QOL score of the i^{th} individual, X_i is the vector of demographic, socio-economic and health care, exogenous variables etc. D_i is a vector of dummies; ε_i is independent and identically distributed error term.

Linear regression estimates the mean response of a given set of predictor variables. It addresses the overall importance of predictor variables to the response variables. Quantile regression (QR) approach has significant advantages in investigating the relative level of influences for predictor variables. As an extension to linear conditional mean regression, QR is estimated by minimizing the asymmetrically weighted absolute residuals at given quantile.

The quantile regression model, first introduced by Koenker and Bassett (1978), specifies the conditional quantile as a linear function of observed covariates. Following Buchinsky (1998), let $Q_\theta(Y \mid X)$ for $\theta \in (0,1)$ denote the θ^{th} conditional quantile of the distribution of QOL score (Y), given a vector, X, of k covariates. These conditional quintiles are expressed as

$$Q_\theta(Y \mid X) = X'\beta(\theta), \tag{2}$$

where $\beta(\theta)$ is a vector of coefficients i.e. the QR coefficients. The detail estimation of $\beta(\theta)$ is given in Koenker and Bassett (1978). The parameter estimates in quantile regression models have the same interpretation as those of any other linear model as rates of changes. Therefore, in a similar way to the OLS model, the $\beta(\theta)$ coefficient of the quantile regression model can be interpreted as the rate of change of the θ^{th} quantile of the dependent variable distribution per unit change in the value of the i^{th} regressor.

3. Results

Table 1 provides the basic socio-economic and demographic statistics of the study population (i.e. construction workers). A total of 508 individuals were included in this analysis. As per the geographical clustering or distribution of sample population, around 67% were being taken from Varanasi city within Uttar Pradesh, followed by 24% and 9% for other district within Uttar Pradesh and other states respectively. In this analysis working age male population of age group 15 and above were being taken. This broad range of working age population has further spilled into five broad age cohorts of 15-24, 25-34, 35-44, 44-54, 55 and above. These age cohorts have 21%, 30%, 28%, 15% and 6%, respectively. In other words, more than half of the total construction workers are relatively younger (i.e. below 35 years of age). Looking at the socio-religious background of the study population, other backward caste (OBC) constitutes around 40% followed by scheduled caste (SC) 31%, scheduled tribes (ST) 9% and General 6.5%, respectively. Thus, majority of the workers (i.e. four-fifth) belong to socio-economically marginalize sections of the society. They are not only marginalized socially (i.e. belong to Low caste, low level of education etc.) but also economically (i.e. higher incidence and varied forms of poverty, poor access to land or high incidence of landlessness, higher concentration in low paid jobs and low income etc.) and poor health conditions ,higher incidence of malnutrition etc. are the prominent features. A significant proportion of India's Muslim Population resides in Uttar Pradesh. Uttar Pradesh has 19.3% of Muslim population as per Census 2011 which is also higher than National average (14.2%). Muslims constitutes only 12% of total sample population of study areas which is even lesser than their share to state or Varanasi city's population (28.2%). The natures of family types of construction workers show around three-fifth of them are nuclear and two-fifth is joint family types. The family size also vary across the construction workers, 44% of households have less than 5 members, 45% households are having 5-10 family members and around 11% households have more than 10 members. In other words, more than half (56%) of the construction workers have medium to large family size. Among the construction workers around 83 % are ever married and only 17% workers are unmarried. In other words, more than four-fifth of the total workers are ever married as a round $4^{th} - 5^{th}$ of the total workers are also falling into 24+ age cohort population and In Indian context, mean age at marriage is relatively lower than developed and some developing world. The mean age at marriage for illiterate males and females is lower than their counterpart within the same socio-cultural context. Table 1 also provides information in this regard. Around 77% of ever married men got married before attaining legal age for marriage (i.e. 21 years). India is one of the fastest growing economy with 7% GDP growth, yet jobs are not grown at the pace of GDP growth. Thus, in a jobless growth Indian economy, unemployment remained as one of the stubborn problem. Around two-third of the sample population or construction workers, are not working rather they are seeking for jobs whereas one-third are currently working in this sector. Besides, duration of their engagement in this profession has also been address. There are 41.3% of workers are engaged since last year or they have less than one year in this profession whereas 31.5 workers have been working in last 2-5 years and 37% workers have been engaged in more 5 years (13.4% has 6-10 years and 13.8% of workers have more than 10 years in this job). Workers use different mode of transport to commute from their shelter (often temporary or dilapidate houses) to the working sites. In this study, it has been found that one- third of the workers commute by feet, 36 % of workers by cycle and 30% by motor vehicles such as bikes, bus etc. More than half (i.e. 54 % of working sites are located within 10 km from their shelters, whereas 16 %, 16 % and 13 % of worksites are located within 10-20 km, 25-50 km and more than 50 km from their shelters, respectively. As around 45 % working sites located more than 10 km from their homes of shelters, majority of workers (around 66 %) are forced to use either cycles or motor vehicles for their day to day communication.

Table 1 Characteristics of construction labour workers in Varanasi city, India

Variables	Category	Frequency	Percent	Variables	Category	Frequency	Percent
Residence	Varanasi	338	66.54	Marital Status	Never married	84	16.54
	Other District	123	24.21		Ever married	424	83.46
	Other State	47	9.25	Age Marriage	Below to 21	304	71.70
Age group (in yrs)	15-24	108	21.26		21 and Above	120	28.30
	25-34	153	30.12	Status of work	Working	168	33.07
	35-44	141	27.76		Seeking	340	66.93
	45-54	77	15.16	Duration in job	Up to 1 year	210	41.34
	55 and above	29	5.71		2-5 years	160	31.50
Social Category	SC	159	31.30		6-10 years	68	13.39
	ST	47	9.25		More than 10 yrs	70	13.78
	OBC	204	40.16	Mode of transport	Cycle	185	36.42
	General	33	6.50		Auto	105	20.67
	Muslim	65	12.80		By foot	171	33.66
Type of family	Nuclear	305	60.04		Bus	47	9.25
	Joint	203	39.96	Distance to work place (in km.)	Up to 10	277	54.53
Family Member	Up to 5	223	43.90		10-20	82	16.14
	05-Oct	230	45.28		21-50	81	15.94
	More than 10	55	10.83		More than 50	68	13.39

Table 2 depicts the descriptive statistics of quality of life of labourers for each domain is ranged 0-100. The mean score for physical domain determining the quality of life is 61.71±13.54. Similarly, the mean score for psychological, social and environmental domains are 53.50±16.99, 61.71±20.00 and 41.44±16.50, respectively.

It shows mean quality of life score of labourers with respect to different socio-demographic status. The mean QOL scores of the labourers is 51.74±10.85 of labourers who search a work as compared 60.36±12.99, with labourers who engaged in a work. This difference is also found to be statistically significant. Out of the total 508 labourers 338 are from Varanasi district with a mean QOL score of 53.52±12.16 is compared with 56.39±11.88 and 57.39±13.33 for labourers from other districts of Uttar Pradesh and other states respectively. From the table, it can be inferred that the difference in QOL scores based on residence is real and significant with p-value < 0.05.

Majority of labourers figures in the age group of 25-34 years and have a mean QOL score of 55 with a standard deviation of 11.75 and 141 labourers belong to age group 35-44 and have a mean QOL score of 52.91. The mean QOL score is the highest (56.44) for the 108 labourers who belong to 15-24 age groups while the mean score for those who belong to 45 and above age group is 54.35. The mean QOL score is the highest (57.91) for the labourers belonging to ST category followed by those belong to OBC category (55.02). The labourers belonging to SC category have a mean score of 54.2 and General/Muslim categories have a score of 54.79 and 51.68, respectively. There is no significant difference at their mean level of QOL with respect to various age groups (p-value > 0.05). Also similar inference can be drawn with respect to different social categories.

Education level has its own importance for the satisfaction of life. In the present study shows as education increases similarly the quality scores increases apart from the gap of middle education. The mean score of QOL differs according to education level with statistically significant. Similarly, the quality of life scores of labourers who are head of their household is 53.71±12.39 as compared to 56.34±11.88 for labourers whose head of household are other member of family. This difference is

also found to be statistically significant as (p-value < 0.05). The frequency of home visit is considered for labourers who visit home monthly and above have the highest mean QOL score with a value of 59.64 and standard deviation of 13.62. The labourers who visit their home weekly have the lowest score of 52.66 and standard deviation of 11.20 which is highly significant with the p-value < 0.05.

Table 2 Quality of life measures of construction labour workers in Varanasi city, India

Variables	Category	Mean	SD	t /F-value	p-value	Variables	Category	Mean	SD	t /F-value	p-value
Job Status	Searching Job	51.74	10.85	-7.874	<0.001	Age at marriage	below to 21	54.77	12.13	0.751	0.453
	Possessing Job	60.36	12.99				21 and above	53.78	12.45		
Residence	Varanasi	53.52	12.16	4.018*	0.019	Time duration	Up to 1	55.18	12.58	0.801*	0.494
	Other District	56.39	11.88				2-5	53.43	11.74		
	Other State	57.56	13.33				6-10	55.22	12.7		
Age Group	15-24	56.44	13.21	1.384*	0.238		More than 10	55.25	12.38		
	25-34	55	11.75			Working Place distance	Up to 10	54.95	12.49	2.542*	0.056
	35-44	52.91	12.03				10-20	52.39	12.08		
	45-54	54.69	12.1				21-50	53.21	10.2		
	55 and above	53.46	12.73				More than 50	57.44	13.42		
Category	SC	54.2	11.29	1.888	0.111	Convenience	Cycle	55.18	11.64	3.966	0.008
	ST	57.91	13.4				Auto	54.19	11.36		
	OBC	55.02	12.32				By foot	52.84	12.76		
	General	54.79	14.11				Bus	59.55	13.7		
	Muslim	51.68	12.29			Respondent's education	Illiterate	53.71	12.41	1.534	0.126
Family type	Nuclear	54.67	12.6	0.185	0.853		Literate	55.38	12.13		
	Joint family	54.47	11.81			Respondent's Father	Illiterate	54.00	11.77	1.817	0.07
Size of Household	Up to 5	53.56	11.32	1.914*	0.149		Literate	56.23	13.49		
	5-10	55.76	13.17			Fathers occupation	Agriculture	58.62	13.34	6.972*	0.001
	More than 10	53.89	11.9				Construction	55.08	12.73		
Marital Status	Never married	55.12	12.64	0.431	0.667		Others	53.21	11.51		
	Ever married	54.49	12.22			Types of Accommodation	Footpath	51.59	7.16	10.45*	<0.001
Type of house	Kachcha	52.51	11.41	7.459*	<0.001		Jhuggi	58.6	13.09		
	Pucca	57.97	13.41				Colony	55.74	12.26		
	Both	54.18	11.39				Others	51.47	11.05		
	Hut	53.23	8.64								

Table 3 Descriptive statistics of quality of life score

Descriptive Statistics	Minimum	Maximum	Mean	Std. Dev
Physical	10.71	100.00	61.71	13.55
Psychological	4.17	100.00	53.50	16.99
Social relation	16.67	100.00	61.71	17.53
Environment	3.13	93.75	41.44	16.50

Table 4 Correlation matrix among the different domains of QOL

Correlations	Physical	Psychological	Social	Environmental
Physical	1.00			
Psychological	0.55**	1.00		
Social	0.36**	0.33**	1.00	
Environmental	0.38**	0.60**	0.41**	1.00

**Significant at 1%

Tables 3 and 4 describes the correlation matrix among the four domains. Correlation coefficient between physical and psychological domains is 0.55. The correlation coefficient between physical and social is 0.36 and correlation coefficient between physical and environmental is 0.38. In the pattern of

physical domain, all others three domains are also positively associated and also these associations are statistically significant.

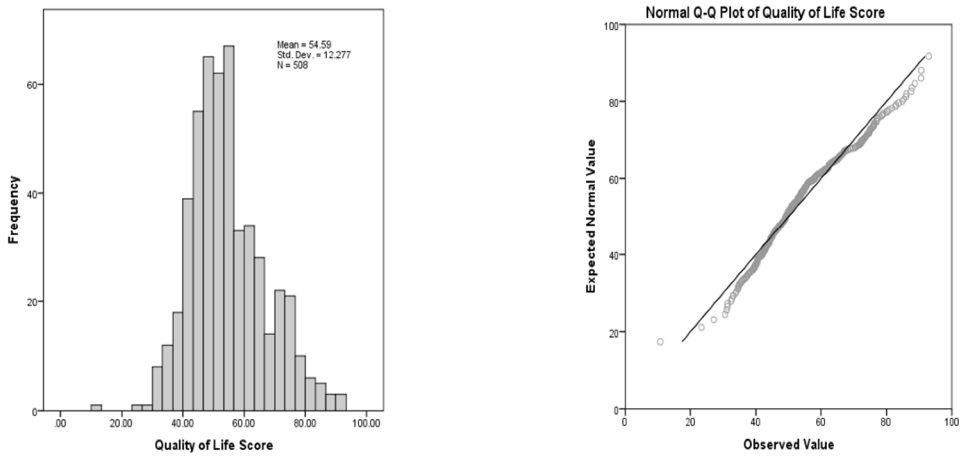

Figure 2 Histograms and Normal Q-Q plots of Quality of Life scores of labourers.

Figure 2 shows the histograms and normal Q-Q plots of quality of life scores (average of the four domains) for labourers. From the figure, it is clear the QOL-Score is normally distributed.

Table 5 shows the result of multiple linear regression models. We have included only those variables in the model which are found to be significant in the univariate analysis. The predictor's (i.e. status of work, duration of work as construction labourer and monthly income) are found to be statistically significant (p-value < 0.05) for quality of life of labourers. The labourer working longer duration (> 5 years) in the construction industry had a positive and better quality of life as compared to the labourer who has been working less than one year in this field. Also the monthly income had a significant impact on quality of life. In general monthly income would lead to a better quality of life.

Table 6 shows the results of quantile regression model. The quantile regression model estimates the potential differential effect of a covariate on various quantile in the conditional distribution, which is more flexible in nature than linear model. Besides the predictor variables viz., labourer job status, duration of working and monthly income, the other variables age (in years), social category, work distance and number of family members are statistically significant effect in overall quality of life score in different quantile. The age of the labourer is significant at 0.10% and not significant at other quantile 0.25%, 0.75% and 0.90%. Also this age is negatively associated with quality of life. Work distance is also negatively associated with quality of life and it is found to be significant at first quartiles. Numbers of family members are found significant at 0.90% quantile.

4. Discussion and Conclusions

The primary objective is to assess the quality of life of construction labourers in Varanasi city of UP. Measuring quality aspect of life is also more difficult and subjective in nature and it is influenced by many individual (i.e. demographic and psychological factors) as well as external or socio-economic as well as working sites factors. There are few empirical studies conducted across the developed as well as developing nations of the world including different parts of India to assess the quality aspects of the construction workers. A total of 508 labourers were included in this study of which 338 are from Varanasi city of Uttar Pradesh. The finding show that the mean QOL score of Varanasi district is

53.52±12.16 compared with 56.39±11.88 and 57.39±13.33 for labourers from other districts of Uttar Pradesh and other states respectively. The mean score of various domains of QOL were 61.71±13.54 (Physical), 53.50±16.99 (psychological), 61.71±20.00 (social) and (41.44±16.50) Among all these four domains, the workers scored poorly in the environmental domain, which mainly deals with living and working conditions, safety, leisure activities, and health care environmental domains. This finding corroborates with earlier finding of Mathew et.al. (2016).All the domains are also positively associated, which indicates that they have same direction of contribution toward quality of life scores labourers engaged at working sites and migrated labourers from other districts of UP and other states have higher quality of life score which contradicts with the earlier finding i.e. migrants labourers are disadvantaged and socio-economically as well as dimensions they are poorer than native workers (Pandit, Trivedi and Das 2011). Thus, the place of residence plays a significant role in deciding the quality of life of the construction workers. The younger age groups (i.e. 15-24 age groups) have relatively better QOL than the relatively older age group (45+age). In other words, there is decline of QOL score with increasing age. Age and social background do not matter while education shows its impact on QOL of the workers. The mean QOL score is the highest (57.91) for the labourers belonging to ST category followed by those belong to OBC category SC and General / Muslims category.

Table 5 Results of linear regression (response variable: quality of life score)

Variables	Estimate	Std. Err.	t-value	p-value
(Intercept)	42.1783	5.1902	8.127	<0.001
Status of Job (Ref: Searching job)	8.9639	1.3078	6.854	<0.001
Age (in years)$	−0.0747	0.0591	−1.264	0.207
Category (Ref: Schedule Caste)				
Schedule Tribe	4.2579	2.3284	1.829	0.068
OBC	1.237	1.3829	0.894	0.372
General	2.4519	2.5294	0.969	0.333
Muslim	−0.3624	1.8732	−0.193	0.847
Duration as Labourer (Ref: Up to 1 Year)				
2-5 years	1.0931	1.4096	0.775	0.439
> 5 years	2.879	1.4226	2.024	0.044
Work distance (in Km) $	−0.01	0.0083	−1.205	0.229
Mode of transport (Ref: Cycle)				
Auto	−1.4298	1.5852	−0.902	0.368
By foot	−1.6212	1.429	−1.134	0.257
Bus	1.0472	2.3507	0.446	0.656
Type of family (Ref: Nuclear family)	0.1745	1.3661	0.128	0.898
No. family Members$	0.009	0.1931	0.046	0.963
Age at marriage (in Years) $	−0.1308	0.1711	−0.764	0.445
Income$	0.0004	0.0001	3.39	< 0.001

$ Continuous variable

Table 6 Results of quantile regression (response variable: quality of life score)

	Quantile 10			Quantile 25			Quantile 75			Quantile 90		
Variables	Coefficient	LU	UU	Coefficient	LU	UU	Coefficient	LU	UU	Coefficient	LU	UU
(Intercept)	28.960	18.469	39.762	34.592	26.801	46.082	38.095	25.467	60.826	65.978	51.738	80.617
Status (Ref: searching job)	8.2074	4.413	10.701	7.066	4.788	10.568	13.191	8.268	17.246	12.806	6.417	14.193
Age (in years) $	-0.143	-0.189	-0.068	-0.061	-0.176	0.085	-0.061	-0.264	0.152	-0.115	-0.219	0.020
Category (Ref: Schedule Caste)												
Schedule Tribe	6.712	-3.224	10.777	5.1977	2.079	8.657	1.127	-4.751	5.959	4.214	-7.501	9.568
OBC	1.105	-2.075	4.131	1.639	-1.796	4.379	1.017	-4.872	6.306	-0.205	-4.907	4.509
General	-3.027	-7.544	2.416	-1.399	-6.854	4.361	4.912	0.098	11.067	3.294	-6.321	29.826
Muslim	3.376	-2.379	6.295	0.957	-0.568	3.449	-2.813	-6.536	4.692	-2.569	-10.977	2.511
Duration as Labourer (Ref: up to 1 year)												
2-5 years	2.738	-4.363	4.383	1.285	-0.701	3.097	1.679	-3.700	5.837	-2.529	-6.884	3.579
> 5 years	2.941	-0.823	5.211	2.742	0.356	4.389	2.445	-4.442	6.805	1.637	-4.868	8.899
Work distance (in km) $	-0.012	-0.045	0.005	-0.010	-0.022	-0.001	0.001	-0.039	0.010	-0.006	-0.028	0.015
Mode of transport (Ref: cycle)												
Auto	-2.789	-4.841	0.652	-1.267	-4.043	0.614	0.302	-6.272	5.409	-1.643	-7.189	3.269
By foot	-1.407	-4.018	1.195	-1.112	-4.467	0.060	1.732	-5.173	5.261	-1.471	-5.922	4.301
Bus	-0.236	-7.671	6.432	2.419	-2.981	5.609	0.652	-5.569	12.857	3.596	2.318	9.047
Type of family (Ref: nuclear family)	1.7081	-0.662	3.184	1.607	-0.781	3.105	-0.518	-4.262	4.042	-1.170	-7.231	6.344
No. family members$	-0.341	-0.699	0.057	-0.281	-0.606	0.216	0.305	-0.493	0.774	0.469	0.006	0.948
Age at marriage (in years) $	0.044	-0.576	0.312	-0.074	-0.401	0.241	-0.0129	-0.803	0.342	-0.486	-0.862	0.473
Income$	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-0.003	0.006

$ Continuous variables

The present study also reveals that workers who act as head of their household have poor QOL score than their counterpart. Besides, the frequency of visiting households has inverse relation with the QOL score of the workers. For instances, those workers who visit their home weekly have poor QOL score (i.e. 52.66 with S.D. 11.20) than those who visit monthly or above (i.e. 59.64 with S.D. 13.62). Factors such as increasing age, being currently married and low educational status were found to be significantly associated (p-value < 0.05) with poor QOL and psychological distress (Mathew et.al. 2016).The mean QOL scores of the labourers is 51.74±10.85 of labourers who search work as compared 60.36±12.99, with labourers who engaged in a work. This difference is found to be statistically significant. Besides, QOL is also associated with other demographic and socio-economic factors which are not considered in this study. The correlation between the Physical domain of QOL and others three domains are found positive and also statistically significant. Quantile method provides a greater insight into the effect of covariates at various quantile of the distribution of the quality of life, which is not possible with the linear regression technique. The study is confined to Varanasi city, Uttar Pradesh, It can be extended to other districts also to provide probable solution to the problems faced by construction labourers that can be useful for the decision makers and policies planners in future for policy implications. Furthermore, future research can also examine the influence of workers satisfaction on promotion and growth of the construction industry.

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