

Original Article

Quality of Work Life: Scale Development and Validation

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Abstract

Background: Nowadays Quality of Work Life is drawing more importance globally, organizations are facing many issues related to human resource of which, employee stability is one of the major problem and addressing it is a top most priority. Amongst various reasons for employee stability the Quality of Work Life is one among them. Quality of work Life is a multidimensional construct and it has been influenced by many variables.

Objective: To develop a valid and reliable scale by considering the significant dimensions of Quality of Work Life of employees in Mechanical Manufacturing Small and Medium sized Enterprises (SMEs) in Karnataka, India

Methodology: A survey using a questionnaire was conducted among 1092 employees working in Mechanical Manufacturing SMEs. The data collected was subjected to principal component factor analysis with varimax rotation using SPSS16.

Results and conclusion: The following nine significant dimensions were identified based on factor analysis: Work environment, Organization culture and climate, Relation and co-operation, Training and development, Compensation and Rewards, Facilities, Job satisfaction and Job security, Autonomy of work and Adequacy of resources. Further analysis revealed that, these nine dimensions together explained 82.24% of the total variance.

Key words: Quality of Work Life, SMEs, QWL dimensions

Introduction

Quality of Work Life (QWL) can be defined as an extent to which an employee is satisfied with personal and working needs through participating in the workplace while achieving the goals of the organization. Louis and Smith (1990) research identified the importance of QWL in reducing employee' turnover and employee well-being impacting on the services offered.

Initially, QWL concept was used only for job redesigning process by considering social- technical

system approach, but gradually this concept was broadened by considering large interventions. Focusing on improving QWL to increase the contentment and satisfaction of employees can result in various advantages for both employees and organization. Through the effective implementation of interventions of QWL such as flexible time, job enrichment, job enlargement, autonomous work group culture, it is possible to enhance status of QWL in employees. These interventions ensure the full use of a worker's potential by assuring greater involvement which makes the work more effective

and efficient by augmenting the quality. QWL also provides opportunities for active involvement of employees in decision making process.

Human resource is an asset to the organization; an unsatisfied employee is the first enemy of the organization. To sustain in the competitive market, organizations have to maintain skilled employees. Employees have to be treated as an asset not liability and this is possible only through the humanized job design process, known as Quality of Work Life.

Literature review

Quality of work life is multidimensional construct. It is gaining more attention due to many researchers have considered different variables which are related to job satisfaction, job security, wages etc. However there are many other critical factors which contributes to QWL which includes Physical, physiological and social factors. Consequently an attempt has been made to incorporate the above factor and develop a reliable scale to measure QWL. The focus of the literature review is to outline the logic used for the selection of predominant variables.

Feldman (1993) defined Quality Work Life is the quality of relationship between employees and the total working environment. Lau et al,(2001) described QWL as the favourable working environment that supports and promotes satisfaction by providing employees with rewards, job security, and career growth opportunities.

Mehdi Hosseini et al, (2010) concluded that the career achievement, career satisfaction and career balance are not only the significant variables to achieve good Quality of Work Life, but QWL or the quality of work system as one of the most interesting methods creating motivation and is a way to have job enrichment. It is also noted from the research that fair pay, growth opportunities and continuing promotion improves staffs' performance which in turn increases QWL of employees.

Nasl Saraji and Dargahi (2006) identified QWL variables as fair pay and autonomy, job security, health and safety standards at work, reward systems, recognition of efforts, training and career advancement opportunities, participation in decision making, interesting and satisfying work, trust in senior management, balance between the time spent at work and with family and friends, level of stress experienced at work, amount of work to be done, occupational health and safety at work.

Normala and Daud (2010) investigated the relationship between QWL and organizational commitment among employees in Malaysian firms. Seven QWL variables were identified, which include physical environment, growth and development, participation, supervision, social relevance, pay and benefits.

Behnam Talebi et.al,(2012) examined the relationship between the employees QWL and effectiveness in service organization like Banking sector. In the study, seven QWL variables are considered to determine the present status of QWL of employees. They are healthy and secure work environment, salary and benefits, job security, autonomy at work, providing the basis for skills education, and determining the job development direction.

Research carried out by Anwar et al.,(2013) revealed that, the most frequently used QWL drivers are reward, benefits and compensation, followed by career development, communication, and safety and security respectively in order of frequency. The other important QWL drivers are top management involvement, cohesion of work and life, job satisfaction and employee motivation which are not considered in many of the research.

Nitesh Sharma and Devendra Singh Verma (2013) examined the QWL existence in Small Scale Industries in Indore. Study identified seven Quality of Work Life variables to measure the QWL of employees namely, good working environment, job satisfaction, chance of growth, fair compensation, employees' motivation, and communication flow, flexible or suitable working time. Study revealed that QWL is not highly established as per the view of employees.

Godina Krishna Mohan and Kota Neela Mani Kanta (2013) examined the variables that play a vital role in influencing the QWL in the manufacturing organizations in the state of Andhra Pradesh. The variables selected for the study were: Working conditions, inter personal relations, trust among employees, autonomy and freedom, participation in decision making, career advancement, training, superior support, safety conditions, top management support, conflict management, amenities, performance linked pay system, communication, implementation of organizational policies, participative management, transparency system, nature of job, rewards and recognition, value system

and job satisfaction. The research findings revealed that the key factors influencing QWL were working environment, group dynamics, personal growth and advancement, motivation and organizational climate.

According to Sangeeta Jain (2004) in Indian industrial worker, working conditions, opportunity to develop human skills and opportunity for advancement can result in better Quality of Work Life to workers.

Ellis and Pompili (2002) conducted a study on QWL of nurses in Canberra. The study revealed that poor working environments, resident aggression, workload, inability to deliver quality of care preferred, imbalance of work and family, shift work, lack of involvement in decision making, professional isolation, lack of recognition, poor relationships with supervisor and peers, role conflict and lack of opportunity to learn new skills are the major barriers in the improvement of QWL of employees. Table 2 exhibits the different dimensions of Quality of Work Life in the view of different research.

Ebrahim Kheradmand et al., (2010) study explore the relationship between Quality of Work Life and Job satisfaction of employees in Dadevarz Jooya Company in Iran. In this study Walton's theoretical framework is used for measuring the respondents' perceptions of QWL using Satisfaction with fair payment, a safe healthy working environment, opportunity for continuous growth, social relationships in organization, balanced role of work, social coherent in the work organization, regulations and rule orientation, developing human capacities, the questionnaire consists of 44 questions, a five point Likert type scale ranging from "strongly disagree" (Value of 1) to "Strongly agree" (value of 5) was used.

Alireza Bolhari et al., (2011) used Waltons' QWL questionnaire to measure the level of QWL in Information technology staffs in Iran, it consists of 24 questions in eight categories, Adequate and fair compensation, safe and healthy work environment, growth and security, constitutionalism, social relevance, total life space, social integration, development of human capacities. The possible responses was on five point Likert scale from (1) I absolutely agree to (5) I absolutely disagree (Number 3 was neither agree nor disagree).

Elamparuthi (2014) used 15 QWL variables to measure the level of QWL of employees in SSIs, they are working environment, safety, job security,

stress, Motivated by superior, Job allow to use my skills, promotion opportunities, provide enough, Treated with respect, working hours, job allows to be productive, is training opportunities helpful, salary satisfaction, employee motivation, proud to be part of industry. Questionnaires were designed in five point scale ranging from highly satisfied (5) to highly dissatisfied (1).

Rose et al., (2006) used three exogenous variables to measure the status of QWL in managers of free trade zones in Malaysia for both the Multi-National Companies (MNCs) and the Small Medium Industries (SMIs) they are career satisfaction, career achievement and career balance to measure the QWL, A ten-point scale with 1 being "strongly disagree" and being 10 "strongly agree" was used. The result indicates that three exogenous variables are significant: career satisfaction, career achievement and career balance, with 63% of the variance in QWL.

Subhashini and Ramani Gopal (2013) used eight dimensions to evaluate status of QWL of women employees working in selected garment factories in Coimbatore district of Tamilnadu they are Relationship with co-worker, Opinion about workload, Health and safety measures, Satisfaction about feedback given, Opinion about working hours, Training programs given by the organization, Opinion about Respect at workplace, Grievance handling procedure. To evaluate the QWL among the employees the opinion of respondents was put under 5-point scales varying from "Highly Satisfied" to "Highly Dissatisfied" as well as "Strongly Agree to Strongly Disagree".

Mirkamali, and Thani (2011) used modified form of Walton's factors questionnaire to determine the Quality of Work Life among faculty members of University of Tehran and Sharif university of technology. This questionnaire comprises the following aspects: Adequate and fair compensation, Safe and healthy working, Opportunities for continued growth and security, Constitutionalism in the work organization, The social relevance in work life, Overall life space, Social integration and cohesiveness, Human progress capabilities, This questionnaire contains 32 questions and on the basis of Likert's 5 degree scale. The reliability of mentioned questionnaire has been reported $\alpha=0.926$.

Reddy and Reddy (2014) used nine dimensions to measure QWL in public and private banks like,

emoluments, safe and healthy working conditions, social integration, social relevance of work, constitutionalism, opportunities to develop human capabilities, career planning, growth and development, work with job enrichment and organization structure.

Nitesh Sharma et al., (2013) used seven dimensions to measure the status of QWL in small scale industries like Good working environment, Chance of growth, Fair compensation, Job satisfaction, Employees motivation, Communication flow, Flexible or suitable working time.

Literature review reveals that the many of the researcher used some of the independent variables to analyze Quality of Work Life of employees like demographic variables such as designation, age, experience, gender, and educational qualification, size of the firm, turnover, and salary. From the literature review it is identified that many researchers used different instrument to measure QWL, these instruments measures less than 65 percent of variations in the measurement of QWL. It is necessary to develop a suitable scale to measure the QWL and validate the same.

Methodology

A survey using a questionnaire was conducted among 1092 employees working in Mechanical Manufacturing SMEs. The data collected was subjected to principal component factor analysis with varimax rotation using SPSS16.

Results

Predominant QWL Components

Initially 27 important QWL components were considered based on the frequency of usage of these components in the past research. The components considered were adequacy of resources, autonomy of work, career balance, compensation & rewards, competence development, contribution towards society from the work, equitable wages, facilities, grievance handling, human relations, image of organization, immediate opportunity, job satisfaction & job security, nature of job, organization culture, penalty system, physical work environment, recognition of efforts, relation & cooperation, role conflict, self-esteem, shift work, training & development, turn-over intentions, work and total life space, work environment and work load.

The sampling adequacy test was performed through Kaiser-Meyer-Olkin (KMO) statistic. Table 3.1 presents the SPSS output of data for factor analysis. Since, KMO values are greater than 0.6, it is considered to be adequate, Kaiser and Rice (1974). Therefore the Kaiser-Meyer-Olkin measure of sampling adequacy with value of 0.601 was acceptable. Barlett's Test of Sphericity (912.393, dof. 351, Sig.0.00) shows that the values are significant and hence, acceptable, implying that non-zero correlations existed at the significance level of 0.000, it provided an adequate basis for proceeding with the factor analysis.

Exploratory Factor analysis was conducted to reduce the components using principal component analysis. The summary of principal components analysis is shown in Table 3.

Based on principle component analysis, following nine predominant QWL components were selected based on Eigen values which are greater than one. Figure 1 shows the Eigen values and scree plot.

1. Work environment
2. Organization culture and climate
3. Relation and co-operation
4. Training and development
5. Compensation and Rewards
6. Facilities
7. Job satisfaction and Job security
8. Autonomy of work
9. Adequacy of resources.

Further, for assessing the relevance of the data through the questionnaire for factor analysis, the commonalities derived from the factor analysis were reviewed. These are greater than 0.5, falling in the range 0.520 to 0.880, suggesting that the data set was appropriate (Stewart 1981). The final questionnaires having fifty items were finalised for the scale, based on those variables having a loading of at least 0.50 on a single factor considered. Table 1 summarized the extraction of nine components through the factor analysis. The reliability coefficient of the questionnaire was 0.88 Cronbach's alpha value. Factor loadings of 0.50 or greater are "Practically significant" for sample size of 100 Hair et al., (2009). Table 4 represent the components of QWL and Question Numbers in various studied Questionnaires.

Operational Definitions

From extensive literature review, factor analysis and experts interactions; it was possible to identify and operationalize variables. Operational definitions of the factors are presented below.

Work Environment: Working environment is a place in which one works. It is a social and professional environment in which employees are supposed to interact with a number of people, and have to work with co-ordination in one or the other way. Safe and healthy working conditions ensure good health, continuity of services, decreased bad labour management relations. A healthy worker registers a high productivity. Employees are cheerful, confident and may prove an invaluable asset to the organization if the working environment is good. It consists of safe physical and mental working situations and determining reasonable working hours.

Organization Culture and Climate: Organization culture is a set of properties and organization climate is a collective behaviour of people that are part of an organization values, vision, norms etc. Promotion opportunities, promotion and reward evaluation criteria used are both under the direct control of an organization and subject to the organization's policies.

Relation and Co-Operation: Relation and co-operation is a communication between management and employees, concerning workplace decision, conflicts and problem resolving. Work and career are typically pursued within the framework of social organization and the nature of personal relationships becomes an important dimension of Quality of Work Life. Acceptance of the workers is based on skills, work related traits, abilities and potential without considering the race, sex, physical appearance, etc.

Training and Development: Training and development is an organizational activity aimed at bettering the performance of individual and groups. QWL is ensured by the opportunities provided by the job for the development of the employees and encouragement given by the management to perform the job, having good conditions to increase personal empowerment and skills.

Compensation and Rewards: Compensation and rewards are motivational factors. The best performer is given the rewards, and this builds the competitions among the employees to work hard and to achieve

both organizational and individual goals. The economic interests of employees drive them to work and employee satisfaction dependent to some extent on the compensation offered. Pay should be fixed on the basis of the work done, individual skills, responsibilities undertaken, performance and accomplishments.

Facilities: Facilities play major role in actualization of the goals and objectives by satisfying both the physical and emotional needs of the employees. Facilities include food service, transportation, security, etc. Many employers have found it beneficial to allow alternate work arrangements for their employees. This is one method to increase employee productivity and morale. The alternate work arrangements to the employees include flexible working hours, shorter or no commute, and secure working environment.

Job Satisfaction and Job Security: Job satisfaction is the favourableness or un-favourableness with which employees view their work. Job satisfaction is impacted by job design. Jobs that are rich in constructive behavioural elements such as work autonomy, task variety, identity, work significance and feedback etc contribute to employees' satisfaction.

Employees want stability of employment and do not like to be the victims of whimsical personal policies and stay at the mercy of employers. Job security is another factor that is of concern to employees. Permanent employment provides security to the employees and improves their QWL.

Autonomy of Work: In autonomous work groups, employees are given the freedom of decision making. Workers themselves plan, co-ordinate and control work related activities. It also includes different opportunities for personnel such as independency at work and having the authority to access the related information for their task.

Adequacy of Resources: Resources should match with stated objectives, otherwise, workforce will not be competent to achieve the predefined objectives. This results in employee dissatisfaction and lower QWL. Adequacy of resources has to do with enough time and equipment, adequate information and help to complete assignments.

Design of Questionnaire: Exploratory factor analysis was conducted to reduce the QWL components from 27 and to find out predominant

components using principal components analysis. Through the factor analysis, following nine Quality of Work Life components were considered namely Work environment, Organization culture and climate, Relation and co-operation, Training and development, Compensation and rewards, Facilities, Job satisfaction and Job security, Autonomy of work, Adequacy of resources. The questionnaire was designed both in Kannada and in English language. The structured questionnaire designed was 'close ended' by nature. The questionnaire used for the survey is shown in Annexure - I. The questionnaire had two important sections.

1. Firm's and Employees' demographic information
2. Employees' Perceptions towards Quality of Work Life

Each section has multiple questions to cover different parameters with a Five-point Likert scale with "1" being "strongly disagree" and "5" being "strongly agree".

The questionnaire consists of 50 close-ended questions related to nine components of QWL. To reduce response bias, questions 3, 11, 16 and 45 were negatively worded. The responses are reverse scored on these survey items to determine the status of QWL.

Analysis: Any studies related to industries, without an enquiry into the demographical characteristic of the workers would reveal only half the legend. The status of QWL depends on employee demographical characteristics. Employee demographical characteristics include age, education, experience, average monthly salary, etc. The status of the QWL is also related with firm's demographical factors like size of the firms, cost of the firms, age of the firms etc. Hence status of QWL can be related to employees and firms demographical characteristics.

The analysis of collected information follows the pattern given below.

1. Demographical characteristics of Firms
2. Demographical characteristics of Employees

3. Status of Quality of Work Life of Employees
4. Status of Quality of Work Life components

Status of Quality of Work Life of Employees

To explore the status of employees QWL in firms, employees' can be divided into two groups namely, satisfied and unsatisfied, based on their QWL score. The QWL score for each respondent is determined by summing score for each of the nine components of QWL (Q1– Q50) and then dividing by 50. The individual response choices ranged between 1 to 5. The maximum QWL score for an individual was 5, while minimum score was 1.

The two categories of Quality of Work Life level were determined by dividing the range of possible QWL scores (1-5) into two intervals. Those scoring which are greater than overall mean (Grand Mean) of QWL were categorised to be satisfied and the scoring less than overall mean (Grand Mean) were categorised to be unsatisfied.

According to Likert and Rensis, (1932) resulting total score may be interpreted normatively, with reference to some comparison group or absolutely, with reference to theoretically or empirically chosen cut-off scores. According to Jerome (2013), Vijay Anand (2013), Rashmi and Swamy (2013), Nanjundeswaraswamy and Swamy (2013), Nanjundeswaraswamy, and Swamy (2015) score, above the overall mean were considered to be satisfied while the score below the overall mean were considered to be unsatisfied with QWL.

Conclusion: Nine significant dimensions were identified based on factor analysis, Work environment, Organization culture and climate, Relation and co-operation, Training and development, Compensation and Rewards, Facilities, Job satisfaction and Job security, Autonomy of work and Adequacy of resources. By using these nine components of QWL a questionnaire was designed and used to measure QWL of employee. Analysis revealed that nine dimensions which together explained 82.24% of the total variance.

Table 4: Components of QWL in the works of various authors

Authors	Component of QWL
Walton USA	1 Adequate And Fair Compensation, 2 Safe And Healthy Working Conditions, 3 Immediate Opportunity To Use And Develop Human Capacities, 4 Opportunity For Continued Growth And Security, 5 Social Integration In The Work Organization, 6 Constitutionalism In The Work Organization, 7 Work And Total Life Space 8 Social Relevance Of Work Life.
Levine, Taylor and Davis Europe	1 Respect from supervisor and trust on employees' capability 2 Change of work 3 Challenge of the work 4 Future development opportunity arising from the current work 5 Self esteem 6 Scope of impacted work and life beyond work itself 7 Contribution towards society from the work
Mirvis and Lawler UK	1 Safe work environment, 2 Equitable wages, 3 Equal employment opportunities and 4 Opportunities for advancement
Baba and Jamal	1 Job satisfaction, 2 Job involvement, 3 Work role ambiguity, 4 Work role conflict, 5 Work role overload, 6 Job stress, 7 Organizational commitment and 8 Turn-over intentions
Lau RSM, Bruce EM	1 Job security 2 Reward systems 3 Training 4 Career advancements opportunities 5 Participation in decision in decision making

Authors	Component of QWL
Ellis and Pompli	1 Poor working environments, 2 Resident aggression, 3 Workload, inability to deliver quality of care preferred, 4 Balance of work and family, 5 Shift work, 6 Lack of involvement in decision making, 7 Professional isolation, 8 Lack of recognition, 9 Poor relationships with supervisor/peers, 10 Role conflicts, 11 Lack of opportunity to learn new skills.
Thomas A. Wyatt and Chay Yue Wah	1 Favourable work environment, 2 Personal growth and autonomy 3 Nature of job, 4 Stimulating opportunities and co-workers
GunaSeelan Rethinam and Maimunah Ismail	1 Health and well-being 2 Job security 3 Job satisfaction, 4 Competence development and 5 The balance between work non work life
Hosseini	1 Adequate And Fair Compensation, 2 Safe And Healthy Working Conditions, 3 Immediate Opportunity To Use And Develop Human Capacities, 4 Opportunity For Continued Growth And Security, 5 Social Integration In The Work Organization, 6 Constitutionalism In The Work Organization, 7 Work And Total Life Space And 8 Social Relevance Of Work Life.
Raduan Che Rose	1 Career satisfaction 2 Career achievement 3 Career balance
Nasl Saraji, Dargahi	1 Fair Pay and Autonomy 2 Job security, 3 Reward systems, 4 Training and career advancements 5 Opportunities, 6 Participation in decision making 7 Interesting and satisfying work. 8 Trust in senior management. 9 Recognition of efforts 10 Health and safety standards at work.

Authors	Component of QWL
	11 Balance between the time spent at work and the time spent with family and friends 12 Amount of work to be done 13 Level of stress experienced at work 14 Occupational health and safety at work
Saklani, D.R	1 Adequate and fair compensation 2 Fringe benefits and welfare measures 3 Job security 4 Physical work environment 5 Work load and job stress 6 Opportunity to use and develop human capacity 7 Opportunity for continued growth 8 Human relations and social aspect of work life 9 Participation in decision making 10 Reward and penalty system 11 Equity, justice and grievance handling 12 Work and total life space , 13 Image of organization
Stephen	1 Adequate and fair compensation 2 Fringe benefits and welfare measures 3 Job security 4 Physical work environment 5 Work load and job stress 6 Opportunity to use and develop human capacity 7 Opportunity for continued growth 8 Human relations and social aspect of work life 9 Participation in decision making 10 Reward and penalty system 11 Equity, justice and grievance handling 12 Work and total life space 13 Image of organization
Muftah, H. A and Lafi, H.	1 Physical, 2 Psychological 3 Social factors