

Quality of Work Life (QWL) in the Pharmaceutical Sector: Exploring Key Determinants and Demographic Insights

Shaweta Sandhu ¹, Nisha Chanana ^{2*}

¹Research Scholar, Faculty of Management Studies, The ICFAI University, Himachal Pradesh

²Assistant Professor, Faculty of Management Studies, The ICFAI University, Himachal Pradesh

*Corresponding Author: shveta8679@gmail.com

ARTICLE INFO

ABSTRACT

Received: 05 Nov 2024

Revised: 14 Dec 2024

Accepted: 25 Dec 2024

The study examines the determinants influencing the Quality of Work Life (QWL) among employees in the pharmaceutical sector of Himachal Pradesh, with an emphasis on demographic disparities. Using a descriptive and exploratory research design, data was collected from 419 employees through a structured questionnaire. The research used statistical techniques such as T-tests, ANOVA, Exploratory Factor Analysis (EFA), and Confirmatory Factor Analysis (CFA) using SPSS 25.0 and AMOS 25.0. The findings show that key determinants of Quality of work life (QWL) include Working Environment, Organizational Culture, Cooperation, and Job Security. Significant differences in perceptions of Quality of Work Life (QWL) were identified across demographic factors such as gender, marital status, age, income, and work experience. Female, married, older, higher-income, and more experienced employees showed a comparatively more favorable viewpoint on Quality of Work Life. The results provide actionable insights for human resource managers and policymakers to plan strategies focused on advancing QWL within the pharmaceutical sector.

Keywords: Quality of Work Life (QWL), Pharmaceutical Sector, Employee Satisfaction, Organizational Culture, Job Security, Work Environment, Cooperation, Demographic Factors, Himachal Pradesh, Human Resource Management.

INTRODUCTION

The Quality of Work Life (QWL) is multifaceted in nature and its fundamentally about employee satisfaction, motivation, and commitment by balancing work and personal life, which is very important for attracting and retaining talent in modern organizations (Geetha et al., 2012) (Khodzhaee, 2017). The development of QWL can be considered into different ways, such as "planned," "evolved," and "induced," each aligning with organizational situations and change management capabilities (Keidel, 1982). Empirical studies, such as those conducted by Golembiewski and Sun, have confirmed the effectiveness of QWL applications across diverse organizational settings, highlighting substantial improvements in aspects like employee attitudes and opinions (Golembiewski & Sun, 1990). The relationship between QWL and organizational citizenship behavior has been established, indicating that improvements in QWL can foster a culture of growth and excellence within organizations (Khodzhaee, 2017). The evolution of QWL is also reflected in the development of self-measurement tools, which involve organizational members in defining and measuring QWL, thereby ensuring that the measures are sensitive and relevant to the specific organizational context (Levine, 1983). Overall, the QWL is characterized by its adaptability to organizational needs and its potential to drive both employee well-being and organizational success.

Quality of work life (QWL) represents a multifaceted perception considered by various dimensions of an employee's occupational setting, which comprises essentials of physical and psychological welfare, job satisfaction, and the equilibrium between work and personal life (Varghese, 2013) (Navya, 2024). In the pharmaceutical industry, determinants such as organizational culture, compensation structures, opportunities for career advancement, and the overall work environment have significant influence on Quality of work life (Navya, 2024) (Norizan et al., 2022). The pharmaceutical domain, similar to many other sectors, requires a holistic strategy towards Quality of work life that harmonizes employee requirements with organizational objectives to foster productivity and enhance employee retention (Norizan et al., 2022) (Patil &Prabhuswamy, 2014). The research has confirmed that higher levels of Quality of work life correlate with employee motivation, reduced turnover intentions and stress levels, these all are necessary for competitive advantage within the industry (Blackford, 2015) (Patil &Prabhuswamy, 2014). Also, demographic factors such as age, gender, and socioeconomic status may influence individuals' perceptions of Quality of work life (Blackford, 2015). The biopsychosocial model of Quality of work life, which includes the well-being of the employees, is particularly pertinent in the pharmaceutical field. (Aquino et al., 2013). Organizations can encourage a positive work environment for the professional and personal growth of the employees by prioritizing important elements such as job security, work-life balance, and employee engagement (Dey & Tripathy, 2015) (Velayudhan & Yameni, 2017). An in-depth understanding of the concept of Quality of work life in the pharmaceutical sector may yield significant understandings of the strategies by which organizations can more effectively support their workforce and enhance overall productivity (Norizan et al., 2022) (Limongi-França, 2015).

The concept of Quality of Work Life (QWL) is essential for understanding the employee satisfaction and organizational productivity, especially within industries such as pharmaceuticals, where the welfare of the workforce significantly effects operational effectiveness. QWL includes a diverse range of organizational practices designed to enhance employee satisfaction and well-being, which consequently cultivates a productive workplace environment. Quality of work life include factors such as job security, work-life equilibrium, equitable compensation, and avenues for career advancement (Navya, 2024) (Tokcan, 2022). Personalized interventions related to demographic factors can significantly increase the effectiveness of QWL initiatives. The incorporation of socio-technical systems theory and motivation theory into QWL practices enhance the work conditions of employees (Tokcan, 2022) (Wen-quan, 2009). A thorough understanding and implementation of QWL determinants can lead a more engaged and satisfied workforce and contributing to the growth and sustainability (Patil &Prabhuswamy, 2014) (Limongi-França, 2015).

The significance of Quality of Work Life (QWL) in the pharmaceutical industry is emphasized on employee satisfaction, organizational productivity, and retention rates. QWL embodies the equilibrium between professional responsibilities and personal life which leads to enhance organizational effectiveness and employee job satisfaction (S & S, 2016) (Navya, 2024). In the pharmaceutical sector, there is a higher demand for skilled professionals and to maintain the high QWL is imperative for the attraction and retention of talent. Various studies have concluded that QWL is significantly correlated with human resource productivity, wherein elements such as stress management and work-life integration are the important determinants of productivity (Patil &Prabhuswamy, 2014). Additionally, QWL plays an important role in development of employer-employee cordial relationship, which is crucial for organizational success and employee motivation (Dey & Tripathy, 2015a & 2015b). QWL initiatives enhance employee well-being, health, and safety, as well as improving job satisfaction and reduce turnover rates (Aquino et al., 2013) (Saraji &Dargahi, 2006).

Additionally, programs such as flexible working hours and wellness initiatives have also increase employee morale, this factor is essential for sustaining a motivated and productive workforce (Dr. S.S.Saravanan, 2024). Research showed that employees feels satisfied and committed by the QWL programs and also address challenges relating to job security, career advancement, and organizational culture (Navya, 2024) (Velayudhan & Yameni, 2017). Therefore, QWL develops as a strategic tool for enhancing organizational performance and sustainability and also helping as a determinant of employee satisfaction (Jaiswal, 2014).

Pharmaceutical Sector in Himachal Pradesh: An Overview

India is a global leader in pharmaceuticals, ranking third in production by volume. The sector, growing at a 9.43% CAGR, supplies 50% of global vaccine demand and 40% of U.S. generic drugs. With over 3,000 companies and 10,000 manufacturing units, India's pharmaceutical market is projected to reach US\$ 120–130 billion by 2030. The biotechnology sector, valued at US\$ 80.12 billion in 2022, and the medical device industry, worth US\$ 11 billion, further strengthen India's position (IBEF, 2023). The objective for bilateral trade between Russia and India is US\$30 billion. It is projected that trade will grow by an additional \$5 billion year, with prospects in steel, chemicals, minerals, pharmaceuticals, and medical devices. It is anticipated that trade will grow by an additional \$5 billion year, with prospects in steel, chemicals, minerals, pharmaceuticals, and medical devices. (Medical Devices Industry report). Himachal Pradesh, particularly Baddi, is Asia's largest pharmaceutical hub, meeting 35% of the continent's demand. The state's pharmaceutical exports reached US\$ 975.08 million in FY22. Major companies like Cipla and Dr. Reddy's operate here, and new projects, including a 35-acre Biotechnology Park in Solan and a bulk drug park in Nalagarh, are underway. An MoU with M/s JAGS Pharma Pvt. Ltd. for a US\$ 96.87 million pharmaceutical park highlights the state's growing importance in the industry (IBEF, 2023).

Given the pharmaceutical sector's rapid growth and its critical role in global healthcare, assessing employees' Quality of Work Life (QWL) becomes essential. A positive work environment directly impacts productivity, innovation, and overall efficiency in manufacturing and research. In regions like Baddi, where pharmaceutical production is at its peak, employees' well-being influences not only operational effectiveness but also compliance with regulatory standards and industry sustainability. The incorporation of cutting-edge technologies and sustainable manufacturing methodologies is transforming the industry. The industry prioritizing the integration of environmental, social, and economic sustainability into their operational settings (Pokharkar et al., 2022) (Jamwal et al., 2020). The focus on quality-centric culture, commitment to quality, ethical integrity, and accountability, further enhances the organizational environment and contributing to increase in the productivity levels and improved employee satisfaction (Chakraborty, 2022). Despite these advancements, challenges such as job security and working conditions persist, thereby it is necessary to make continuous efforts to reduce these concerns in order to sustain a competitive advantage (Kabir & Parvin, 2012). High QWL ensures lower attrition, better job satisfaction, and enhanced performance, ultimately leading to higher production quality and output. The research suggests that elements such as work-life balance, teamwork, institutional facilities, and training employ a significant impact on the QWL experienced by the employees (Norizan et al., 2022). As pharmaceutical companies in Himachal Pradesh expand with new investments and infrastructure, understanding employees' work-life balance, job security, and workplace conditions becomes crucial. Therefore, studying QWL in this sector is vital, as it directly correlates with production efficiency, workforce stability, and long-term industry growth.

LITERATURE REVIEW

Factors Influencing the Antecedents of Quality of Work Life (QWL)

There are mainly three categories of factors affecting the Quality of Work Life (QWL): personal, organizational, and environmental. Primary determinants of QWL include remuneration, safe and healthy working environments, opportunities for professional advancement, job security, and social integration in the workplace (Ali, 2023). Psychological concepts, including trust, care, respect, learning, and contribution, are also responsible for Quality of work life, as they are important to fostering employee well-being and enhancing productivity in the organization (Riyono et al., 2022). The study showed that mental and physical factors are important for the improvement of QWL (Kato et al., 2024). Moreover, organizational culture, interpersonal relationships, compensation structures, and job security are directly linked to QWL, thereby it is necessary to provide better work environment (Gazi et al., 2024). The study showed that work-life balance, job satisfaction, and flexibility are the important determinants of QWL, which are very essential for employees and these determinants may fluctuate across various demographic segments (Blackford, 2015). Additionally, factors such as workplace safety, career advancement, and social interactions are correlated with individual work performance, and also highlighting the significant impact of QWL on employee efficiency (Cocuľová, 2016). All these elements of QWL can result into higher employee motivation, satisfaction, and overall organizational productivity and also essential for the success of the organization (Aquino et al., 2013) (Navya, 2024). The study suggests that the implementation of breaks and improvement in the working conditions may decrease fatigue and increase job satisfaction among employees (Gornostaj et al., 2020). Moreover, stress management and work-life balance impact on human resource productivity and organizational commitment (Patil & Prabhuswamy, 2014). The organizational culture, which includes factors such as job security, opportunities for career development, and a supportive work environment, plays an important role in the QWL, which leads to employee satisfaction and productivity (Navya, 2024). In addition, the focus on relationship building and self-determined approaches within the organizations impact positively to QWL by addressing the socio-technical needs of employees (Sinha, 2012). Within the pharmaceutical industry, especially among marketing representatives, job-related stress and the organizational climate are important in shaping QWL (Huda, 2017). The organizational culture of the firms has a positive impact on QWL by aligning the workforce with organisational objectives and increasing productivity (Chakraborty, 2022). The factors such as pride in work and a sense of purpose within the workplace serving as significant contributors to QWL (Kato et al., 2024). These all factors are crucial for the improvement of QWL within the firms, thereby ensuring both employee satisfaction and organizational efficacy.

Demographic Factors and Their Role in QWL Assessment

Age, gender, marital status, education, and income level are various demographic factors which have a significant impact on perceptions of Quality of Work Life (QWL) and overall life satisfaction across various sectors. For example, the study revealed that the older employees, as well as those having higher educational qualifications, are more likely to report higher levels of life satisfaction, which may serve as an indicator of QWL, as they frequently experience more stable and fulfilling work environments (Dahiya & Rangnekar, 2019). Gender factor is also evident that male employees reporting higher life satisfaction in comparison to their female counterparts (Dahiya & Rangnekar, 2019). Marital status represents another important variable, it showed that married employees have lower QWL in specific dimensions, such as work environment (Vaish & Shekhawat, 2013). Furthermore, the impact of demographic variables on QWL is not equally significant across all sectors, in the manufacturing sector, demographic variables such as industry type and organisational tier

significantly impact on life satisfaction, which means it is linked to QWL. (Penmatsa& Sreeram, 2021). Some studies find that demographic variables have lower impact on QWL perceptions in the public and private banking institutions, it signifying that the effects of demographic factors can differ considerably based on industry and organizational culture (Sinha et al., 2022). It has been found that demographic, organizational and environmental factors effect on overall employee well-being and productivity (Aquino et al., 2013) (Patil &Prabhuswamy, 2014). Thus, a comprehensive understanding of the demographic factors is essential for the implementation of QWL initiatives for employee satisfaction and organizational efficacy. While certain studies, including that conducted by Sinha et al., suggest that demographic variables do not have a significant impact on QWL in the banking sector (Sinha et al., 2022), other research indicates a more complex relationship. For instance, Penmatsa and Sreeram's findings reveal that demographic factors such as industry type, organizational level, marital status, and spouse earning status significantly impact on life satisfaction, with pharmaceutical executives reporting higher satisfaction levels compared to their counterparts in the information technology sector (Penmatsa& Sreeram, 2021). This observation implies that the pharmaceutical sector may provide a more advantageous work environment, potentially attributable to its structured framework and emphasis on manufacturing processes. Furthermore, the research conducted by Herlina and Bachri find that the demographic factors, in relation with organizational climate, significantly affect QWL, although the extent of this impact varies depending on particular demographic variables such as age, gender, and employment status (Herlina&Bachri, 2016). In relation to female employees, the study by Thriveni and Rama find the significant relation between demographic variables and work-life balance, an important component of QWL (Thriveni & Rama, 2018). This is particularly relevant in some sectors, where the workforce is notably diverse and comprises a significant number of women. Additionally, the research conducted by Kato et al. find that "meaning of existence in the workplace" and "pride in work" factors are essential for increasing QWL, further suggesting that elements of intrinsic job satisfaction hold significant relevance across various demographic groups (Kato et al., 2024). The pharmaceutical sector, known by its high-stress environments and rigorous regulatory requirements, demands a quality of work life (QWL) framework to improve stressors and promote employee welfare (Mishra, 2024). Crucial factors of QWL include fair salary, safe working environment, professional advancement, and social unity in the workplace, which together foster job satisfaction and organizational commitment (Ali, 2023). Also, intrinsic motivators, including a sense of competence and interpersonal relationships, are important determinants of QWL, further research suggest that it is important to customized QWL strategies for diverse workplace (Gist-Mackey et al., 2023). Mental health and well-being factors are also very important, as they effectively reduce stress and burnout (Mishra, 2024). Furthermore, reducing the monotony of work through interventions such as operational breaks, the rationalisation of work and rest schedules can boost employee happiness and reduce fatigue (Gornostaj et al., 2020). Ultimately, a holistic QWL program that incorporates psychological dimensions such as trust, care, and respect can significantly enhance employee well-being and productivity (Riyono et al., 2022).

2.1 Rationale of the Study

The pharmaceutical sector is a key driver of economic growth and employment in HimachalPradesh, it is playing a crucial role in healthcare and industrial development. In the Pharma sector there is a high-pressure work environment, regulatory demands, and the need for continuous innovation, ensuring a high Quality of Work Life (QWL) for employee well-being and organizational productivity (Mishra, 2024). The existing literature highlights that QWL is influenced by multiple factors, including compensation, working conditions, career

growth opportunities, and social integration at the workplace (Ali, 2023). Psychological aspects such as trust, care, respect, and contribution are also critical in shaping employee satisfaction and motivation (Riyono et al., 2022). In the pharmaceutical industry, job-related stress, task monotony, and work-life balance challenges significantly impact employee performance and retention (Gornostaj et al., 2020). Research has further emphasized the role of intrinsic job satisfaction factors such as pride in work and the meaning of existence in the workplace, suggesting that both mental and physical well-being are essential to improving QWL (Kato et al., 2024). Additionally, demographic factors, including age, gender, marital status, income, and work experience, have been found to shape employees' perceptions of QWL, with some studies indicating significant differences across industries and job roles (Dahiya & Rangnekar, 2019; Penmatsa & Sreeram, 2021).

Despite these insights, there remains a lack of sector-specific analysis focusing on how these antecedents and demographic variations impact QWL in the pharmaceutical industry of Himachal Pradesh. Given the sector's unique challenges—ranging from regulatory pressures to skill utilization—understanding these factors is very important for designing policies that enhance employee well-being, job satisfaction, and overall productivity. This study aims to fill this gap by systematically analyzing the factors influencing QWL and comparing the perceptions of employees based on demographic characteristics.

2.2 Research Gap

While existing studies have explored various dimensions of QWL, significant gaps remain in the context of the pharmaceutical industry in Himachal Pradesh:

1. **Limited sector-specific research** – Most studies on QWL focus on broader industrial sectors such as manufacturing, IT, and banking, with limited research on pharmaceutical employees in Himachal Pradesh (Sinha et al., 2022; Penmatsa & Sreeram, 2021).
2. **Lack of emphasis on psychological factors** – Studies highlight that trust, care, and meaning of work influence QWL, yet there is insufficient research on how these psychological constructs interact with demographic factors in the pharmaceutical industry (Kato et al., 2024; Riyono et al., 2022).
3. **Need for demographic-specific insights** – While research suggests that age, gender, marital status, income, and work experience impact QWL, no comprehensive study has examined these variations within the pharmaceutical sector in Himachal Pradesh (Dahiya & Rangnekar, 2019; Vaish & Shekhawat, 2013).
4. **Integration of QWL strategies** – Existing studies emphasize the importance of QWL programs, yet there is limited empirical evidence on how pharmaceutical firms in Himachal Pradesh implement these strategies to enhance employee well-being and job satisfaction (Ali, 2023; Gazi et al., 2024).

Addressing these research gaps is crucial for developing a complete understanding of QWL in the pharmaceutical sector and providing actionable insights for industry leaders and policymakers. This study aims to bridge these gaps by identifying key antecedents of QWL and analyzing how demographic factors influence employee perceptions, ultimately contributing to the enhancement of work-life quality and organizational effectiveness in the pharmaceutical industry of Himachal Pradesh.

2.3 Objectives of the Study

1. To explore the factors influencing the antecedents of Quality of Work Life (QWL) among employees in the pharmaceutical sector of Himachal Pradesh.
2. To compare and assess the Quality of Work Life (QWL) of employees in the pharmaceutical sector of Himachal Pradesh based on demographic factors.

2.4 Hypothesis of the Study

H01: There is no significant difference in the Quality of Work Life (QWL) among employees in the pharmaceutical sector of Himachal Pradesh based on gender.

H02: There is no significant difference in the Quality of Work Life (QWL) among employees in the pharmaceutical sector of Himachal Pradesh based on Marital Status.

H03: There is no significant difference in the Quality of Work Life (QWL) among employees in the pharmaceutical sector of Himachal Pradesh based on age.

H04: There is no significant difference in the Quality of Work Life (QWL) among employees in the pharmaceutical sector of Himachal Pradesh based on income level.

H05: There is no significant difference in the Quality of Work Life (QWL) among employees in the pharmaceutical sector of Himachal Pradesh based on work experience.

METHODOLOGY

Research Design: The present study employs a descriptive and exploratory research design.

Sampling Plan:

Sampling Unit- The target population for this study includes employees working in the pharmaceutical industry of Himachal Pradesh.

Sample Area- Pharmaceutical companies located in Himachal Pradesh, particularly those in the Solan district, were considered for this study.

Sample Size Determination- Cochran's formula (1963) was used to determine the sample size. A total of 650 questionnaires were distributed, yielding 436 responses. After eliminating 23 incomplete responses, the final sample size was 419, surpassing the minimum required sample size.

Sampling Technique: A multistage sampling technique was employed:

Stage 1-A list of 202 WHO-GMP Certified Manufacturing Units in Himachal Pradesh was retrieved.

Stage 2-The district with the highest number of companies, Solan (147 companies), was selected.

Stage 3-Companies with more than 100 employees were shortlisted.

Stage 4-Purposive Sampling was used to select respondents across different demographic categories and job levels (senior, middle, and entry-level employees).

Data Collection: The study utilizes both primary and secondary data. Primary data was collected through structured questionnaire distributed to employees. Secondary data was gathered from journal articles, company reports, and industry publications.

Description of the Questionnaire: The questionnaire was structured into two main sections:

Section 1:Captured demographic details such as age, gender, marital status, educational qualification, income, and work experience.

Section 2:Focused on QWL, using 23 statements adapted from Van Laar et al. (2007). Responses were recorded on a 5-point Likert scale (5 = Strongly Agree, 1 = Strongly Disagree).

Reliability: Cronbach's Alpha was used to measure the internal consistency of the questionnaire. A value greater than **0.70** confirms the reliability of the instrument.

Construct	No. of Items	Cronbach's Alpha
Quality of Work Life	21	0.83

Validity: Convergent Validity and Discriminant Validity were examined to confirm construct validity. Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) were conducted to validate the factor structure.

Data Analysis: The collected data were analyzed using SPSS 25.0 and AMOS 25.0. The analysis included:

Descriptive Analysis: Mean, standard deviation, and frequency distribution.

T-Test: Used to compare means between two groups.

ANOVA: Assessed differences across multiple groups.

Factor Analysis: Identified underlying factors influencing QWL. Exploratory Factor Analysis (EFA) is used to classify variables into factors based on correlations. Confirmatory Factor Analysis (CFA) is conducted using AMOS to validate the factor structure.

Pilot Study: A pilot test was conducted with 65 respondents to ensure the questionnaire's clarity and reliability. Based on feedback from HR experts and academics, necessary modifications were made before final distribution.

RESULTS AND INTERPRETATION

Objective 1: To explore the factors influencing the antecedents of Quality of Work Life (QWL) among employees in the pharmaceutical sector of Himachal Pradesh.

Exploratory Factor Analysis used to find the antecedents of the Quality of work life among employees in Himachal Pradesh's pharmaceutical industry. The degree to which the data meets the requirements for factor analysis is assessed using the KMO test (Table 1). Both the overall sampling efficiency of the model and the sampling efficiency of each variable separately are assessed by the test. The KMO value is higher than 0.70, and Bartlett's Test of Sphericity is also significant with $p < 0.05$, as the table below demonstrates.

Table 1

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.808
Bartlett's Test of Sphericity	Approx. Chi-Square	1764.898
	Df	190
	Sig.	0.000

Table 2 displays the total variance, which gives the percentage of total variance by all components. By restricting the number of components that may be extracted, four aspects of quality of work life were kept when analysing the results. If logic cannot be drawn from the Kaiser Criterion, researchers advise use several criteria for deriving elements based on a given number (Costello, 2005). The four components add up to 71.158 percent of the overall variation. Factor analysis was used in this study to extract four components that together

account for 71.158 percent of the data provided in the statements on the quality of work life. Component retention is shown by eigenvalues greater than one. As a result, four factors were retained after factor extraction.

Table 2

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	
1	6.602	33.009	33.009	6.602	33.009	33.009	3.863
2	3.649	18.246	51.254	3.649	18.246	51.254	3.661
3	2.619	13.093	64.347	2.619	13.093	64.347	3.464
4	1.362	6.811	71.158	1.362	6.811	71.158	3.244
5	0.975	4.876	76.034				
6	0.709	3.546	79.58				
7	0.605	3.024	82.604				
8	0.599	2.993	85.597				
9	0.455	2.273	87.871				
10	0.433	2.165	90.036				
11	0.354	1.77	91.806				
12	0.316	1.578	93.384				
13	0.253	1.264	94.648				
14	0.231	1.155	95.803				
15	0.21	1.049	96.851				
16	0.204	1.018	97.87				
17	0.157	0.785	98.655				
18	0.15	0.751	99.406				
19	0.08	0.401	99.807				
20	0.039	0.193	100				

Extraction Method: Principal Component Analysis

The Rotated Component Matrix indicates that the rotation component was executed once more (Table 3) for the variable quality of work life, presenting the loadings of each measure on the extracted variables. Each factor's associated variables are arranged in descending order against each column and row. Therefore, in the situation of variable quality of work life, only four factors with the biggest factor loadings and Eigen values greater than one were selected for this investigation.

Table 3

	Component			
	1	2	3	4
Q1	0.896			
Q2	0.722			
Q3				0.657
Q4				0.878
Q5				0.803
Q6				0.793
Q7	0.842			
Q8	0.891			

Q9	0.637			
Q10				0.558
Q11		0.717		
Q12		0.843		
Q13		0.858		
Q14		0.814		
Q15		0.684		
Q16			0.822	
Q17			0.754	
Q18			0.891	
Q19			0.761	
Q20			0.852	

Identification of factors related to quality of work life in Table 3.

Factor 1: Working Environment (WE): For the first factor, the factor loadings range from 0.637 to 0.896 (Q1-Q2, Q7-Q9). A workplace is a designated area used for work-related activities where people are expected to collaborate and engage with different coworkers. Maintaining service continuity, fostering good health, and reducing unfavourable labor-management relations all depend on the creation of safe and healthy working conditions. Good working conditions create a happy atmosphere and make employees valuable assets to the business. This entails setting up appropriate working hours and making sure that the workplace is both physically and mentally healthy.

Factor 2: Organizational Culture (OC)- The second factor, organisational culture (OC), has factor loadings ranging from 0.684 to 0.858 (Q11-Q15). The common behaviours of people who share the organization's values, vision, and norms—collectively referred to as its climate—are among the unique traits that make up an organization's culture. Promotional opportunities, promotions, and the standards for judging prizes are all directly governed by the organization's rules. Employees' quality of work life is influenced by the culture of the organisation.

Factor 3: Co-operation (CO): The third factor's factor loadings fall between 0.754 and 0.891 (Q16–Q20). Cooperation entails management and staff communicating about workplace decisions, disputes, and problem-solving. Career and work endeavours frequently take place in a social setting, where interpersonal relationships play a big role in determining one's quality of work life. Acceptance of workers is based on their abilities, potential, and work-related qualities rather than on unimportant characteristics like gender, race, or physical appearance.

Factor 4: Job Security (JS)- For the fourth factor, the factor loadings fall between 0.558 and 0.878 (Q3Q6, Q10). Positive aspects of jobs like varied tasks, a strong sense of identity, autonomy, meaningful work, and constructive criticism all add to employees' overall satisfaction. For workers who want autonomy and don't want to be subject to capricious personal policies from their employers, job security is a primary concern. The worry about job security highlights the value of long-term employment, which provides stability for workers and improves their quality of life.

Objective 2: To compare and assess the Quality of Work Life (QWL) of employees in the pharmaceutical sector of Himachal Pradesh based on demographic factors.

H₀₁: There is no significant difference in the Quality of Work Life (QWL) among employees in the pharmaceutical sector of Himachal Pradesh based on gender.

Gender

Table 4: Results of Independent sample t-test for Gender

Factors	Gender	Mean	SD	t-value	P value
Organizational Culture	Male	3.98	.65	-3.83	.000**
	Female	4.27	.36	-4.90	
Working Environment	Male	3.50	.77	-2.89	.004
	Female	3.76	.46	-3.60	
Cooperation	Male	3.87	.58	.515	.607
	Female	3.81	.48	.55	
Job Security	Male	4.13	.56	-2.69	.007*
	Female	4.31	.34	-3.39	

**** Significant at 1% level * Significant at 5% level (two Tailed)**

Table 4 categorizes respondents by gender into two groups: males and females. The significance values (p-values) for three factors are all below 0.05, indicating statistically significant differences between male and female employees in their perceptions of these factors. This suggests that gender significantly influences how employees perceive these aspects of their Quality of Work Life (QWL).

However, the p-value for cooperation is greater than 0.05, implying no significant difference between male and female employees in this regard. This result indicates that both genders place equal importance on cooperation. A comparison of mean values reveals that female employees have a more positive perception of organizational culture, working environment, and job security compared to male employees. Since significant differences have been found in QWL based on gender, the null hypothesis (H₀₁) is rejected.

H₀₂: There is no significant difference in the Quality of Work Life (QWL) among employees in the pharmaceutical sector of Himachal Pradesh based on Marital Status.

Marital Status

Table 5: Results of Independent sample t-test for Marital Status

Factors	Gender	Mean	SD	t-value	P value
Organizational Culture	Married	3.40	.394	2.80	.005*
	Unmarried	3.27	.281	3.28	
Working Environment	Married	3.42	.844	4.42	.000**
	Unmarried	2.99	.447	5.80	

Cooperation	Married	3.95	.629	2.29	.022*
	Unmarried	3.78	.366	2.91	
Job Security	Married	3.64	.825	-.716	.474
	Unmarried	3.72	.732	-.758	

** Significant at 1% level * Significant at 5% level (two Tailed)

Table 5 categorizes respondents based on marital status into two groups: unmarried and married. The significance value (p-value) is less than 0.05 for factors such as organizational culture, working environment, and cooperation, indicating a statistically significant difference in how unmarried and married employees perceive these aspects. The mean values for married employees are higher, suggesting that they place greater importance on these workplace factors compared to their unmarried counterparts. However, the significance value (p-value) for job security is greater than 0.05, implying that there is no significant difference between married and unmarried employees regarding their perception of job security. This suggests that both groups feel equally secure in their jobs. Since significant differences have been found in QWL based on marital status, the null hypothesis (H_0) is rejected.

H₀₃: There is no significant difference in the Quality of Work Life (QWL) among employees in the pharmaceutical sector of Himachal Pradesh based on age.

Age

Table 6: Results of ANOVA for Age

Factors	Age in Years	Mean	SD	F-value	P value
Working Environment	Up to 25	3.555	.192	105.76	.000
	25 – 35	3.418	.269		
	36 – 45	4.101	.654		
	Above 45	4.882	.164		
Organizational Culture	Up to 25	3.444	.192	67.75	.000
	25 – 35	3.429	.282		
	36 – 45	3.913	.498		
	Above 45	4.392	.130		
Cooperation	Up to 25	3.666	.577	67.70	.000
	25 – 35	3.277	.519		
	36 – 45	4.097	.760		
	Above 45	4.862	.206		
Job Security	Up to 25	4.356	.769	19.22	.000
	25 – 35	3.998	.693		
	36 – 45	4.479	.600		
	Above 45	4.921	.145		

** Significant at 1% level * Significant at 5% level

Table 6 categorizes respondents into four age groups: Up to 25 years, 25-35 years, 36-45 years, and above 45 years. The results of the ANOVA test reveal significant differences in employees' perceptions of various workplace factors, as indicated by p-values less than 0.05 for all factors. This suggests that employees from different age groups hold varying opinions regarding workplace values. Further analysis shows that employees aged above 45 years have higher mean scores for these factors compared to other age groups. This indicates that older

employees place greater importance on these workplace aspects than their younger counterparts. Since significant differences have been found in QWL based on age, the null hypothesis (H_{03}) is rejected.

H_{04} : There is no significant difference in the Quality of Work Life (QWL) among employees in the pharmaceutical sector of Himachal Pradesh based on income group.

Income Group
Table 7: Results of ANOVA for income

Factors	Income	Mean	SD	F-value	P value
Working Environment	Below 2 Lakhs	3.655	.328	293.090	.000
	2.1 – 5 Lakhs	2.773	.514		
	5.1 – 8 Lakhs	4.748	.399		
	Above 8.1 Lakhs	4.848	.174		
Organizational Culture	Below 2 Lakhs	3.253	.276	103.916	.000
	2.1 – 5 Lakhs	3.217	.302		
	5.1 – 8 Lakhs	3.918	.144		
	Above 8.1 Lakhs	3.878	.168		
Cooperation	Below 2 Lakhs	2.942	.357	434.738	.000
	2.1 – 5 Lakhs	3.031	.310		
	5.1 – 8 Lakhs	4.755	.352		
	Above 8.1 Lakhs	4.757	.336		
Job Security	Below 2 Lakhs	3.829	.274	267.946	.000
	2.1 – 5 Lakhs	3.364	.389		
	5.1 – 8 Lakhs	4.829	.305		
	Above 8.1 Lakhs	4.878	.168		

Table 7 categorizes respondents into four income groups: below 2 lakhs, 2.1-5 lakhs, 5.1-8 lakhs, and above 8 lakhs. The mean scores and standard deviations of employees in different income brackets were calculated, and the F-value was computed accordingly. The results summarized in Table 7 indicate that all p-values are less than 0.05, signifying a statistically significant difference among employees across different income groups in their perceptions of workplace factors. This suggests that employees with varying income levels hold different opinions on all the factors under consideration. Since significant differences have been found in QWL based on income group, the null hypothesis (H_{04}) is rejected.

H_{05} : There is no significant difference in the Quality of Work Life (QWL) among employees in the pharmaceutical sector of Himachal Pradesh based on work experience.

Work experience
Table 8: Results of ANOVA for Work Experience

Factors	Work Experience	Mean	SD	F-value	P value
Working Environment	Below 3 years	3.738	.216	143.21	.000
	3.1-6 years	2.921	.569		
	6.1-9 years	4.467	.736		
	Above 9 years	4.666	.516		

Organizational Culture	Below 3 years	3.250	.277	65.37	.000
	3.1-6 years	3.234	.299		
	6.1-9 years	3.781	.320		
	Above 9 years	3.888	.172		
Cooperation	Below 3 years	2.928	.359	207.98	.000
	3.1-6 years	3.003	.329		
	6.1-9 years	4.462	.712		
	Above 9 years	4.555	.544		
Job Security	Below 3 years	3.902	.180	134.37	.000
	3.1-6 years	3.411	.379		
	6.1-9 years	4.597	.612		
	Above 9 years	4.611	.646		

Table 8 categorizes respondents based on work experience into four groups: below 3 years, 3.1-6 years, 6.1-9 years, and above 9 years. The mean scores and standard deviations of employees with different levels of work experience were calculated, and the F-value was computed. The results, summarized in Table 8, indicate that all p-values are less than 0.01, signifying a highly significant difference in employees' perceptions of workplace factors based on their total work experience. Further analysis reveals that employees with more than 9 years of experience assign greater importance to these factors compared to other groups. Since significant differences have been found in QWL based on work experience, the null hypothesis (H_0) is rejected.

4.1 Main Findings

1. Key Factors Influencing QWL: Working Environment, Organizational Culture, Cooperation, and Job Security were identified as crucial determinants of QWL in the pharmaceutical sector.
2. Gender-Based Differences: Female employees perceive organizational culture, working environment, and job security more positively than males, while no significant difference was found in cooperation.
3. Marital Status-Based Differences: Married employees value organizational culture, working environment, and cooperation more than unmarried employees, but both groups perceive job security similarly.
4. Age-Based Differences: Employees aged above 45 years rate all QWL factors significantly higher than younger employees, emphasizing their stronger workplace expectations.
5. Income-Based Differences: Higher-income employees (above 8 lakhs) have the most favorable QWL perceptions, while those earning 2.1-5 lakhs report the lowest satisfaction.
6. Work Experience-Based Differences: Employees with over 9 years of experience perceive QWL factors more positively, whereas those with 3.1-6 years of experience have the lowest ratings.

DISCUSSION

This investigation delves into the determinants that affect the Quality of Work Life (QWL) within the pharmaceutical industry, underscoring demographic discrepancies and their ramifications on employee perceptions. The outcomes are congruent with extant literature while concurrently offering some contrasting perspectives. The findings suggest that the working environment, organizational culture, collaboration, and job security serve as pivotal factors influencing QWL. These results corroborate previous inquiries that underscore the significance of a nurturing work environment, equitable remuneration, and career stability in shaping employee welfare and productivity (Ali, 2023; Gazi et al., 2024).

Gender-based distinctions demonstrate that female employees possess a more favorable perception of the working environment and job security in comparison to their male counterparts. While this finding diverges from studies that assert male employees frequently report greater job satisfaction (Dahiya & Rangnekar, 2019), it is consistent with research indicating that women prioritize supportive organizational atmospheres and work-life integration (Thriveni & Rama, 2018). In terms of marital status, married employees evaluated organizational culture, collaboration, and working conditions more positively than their unmarried peers. This finding reinforces studies that suggest married employees tend to cultivate stronger emotional attachments to their workplaces due to the stability and responsibilities associated with marriage (Penmatsa & Sreeram, 2021).

However, studies also suggest that increased family obligations may contribute to lower QWL in certain domains (Vaish & Shekhawat, 2013). **Age-based differences** highlight that employees over 45 years perceive QWL factors more positively. This is consistent with prior research linking higher age to improved job satisfaction due to greater career stability and expectations alignment (Dahiya & Rangnekar, 2019). Contrarily, younger employees often report lower satisfaction, possibly due to career uncertainties and evolving professional aspirations (Herlina & Bachri, 2016). Income and work experience significantly affect QWL perceptions. Employees earning above ₹8 lakh report the highest satisfaction, whereas those in the ₹2.1–5 lakh range exhibit the lowest ratings. These results align with studies demonstrating a direct relationship between income levels and QWL (Blackford, 2015). Furthermore, employees with over **nine years of experience** perceive QWL more positively, reinforcing research that associates tenure with workplace familiarity, stability, and professional growth (Cocuľová, 2016).

Overall, the study underscores the need for **industry-specific QWL interventions**, particularly in the pharmaceutical sector, where job stress, task monotony, and regulatory pressures impact employee well-being (Mishra, 2024). The findings emphasize the importance of fostering a **positive organizational culture, providing job security, and addressing demographic disparities** to enhance QWL.

CONCLUSION

The study highlights key factors influencing the Quality of Work Life (QWL) in the pharmaceutical sector of Himachal Pradesh, including Working Environment, Organizational Culture, Cooperation, and Job Security. Significant differences in QWL perception exist based on gender, marital status, age, income, and work experience. Female, married, older, higher-income, and more experienced employees tend to have a more positive perception of QWL. These findings emphasize the need for organizations to adopt targeted strategies to enhance employee satisfaction and productivity.

IMPLICATIONS

1. **Improvement of Work Environment:** Organizations should focus on creating a healthier and more inclusive workplace to boost employee morale and productivity.
2. **Strengthening Organizational Culture:** Fostering a culture of shared values, vision, and transparency can improve employee engagement and retention.
3. **Enhancing Cooperation:** Encouraging better communication and collaboration between employees and management can significantly improve teamwork and job satisfaction.
4. **Ensuring Job Security:** Offering long-term stability and career growth opportunities can enhance employee commitment and reduce turnover.
5. **Gender-Specific Initiatives:** Organizations should introduce policies that support work-life balance and career advancement, particularly for female employees.
6. **Customized Employee Programs:** Implementing age- and experience-based development programs, such as mentorship and skill enhancement initiatives, can help cater to diverse workforce needs.

REFERENCES

- [1] Ali, W. (2023). Antecedents and Consequences of Quality of Work Life: An In-depth Review for Future Research Agenda. *Asian Journal of Management*. <https://doi.org/10.52711/2321-5763.2023.00008>
- [2] Aquino, A. de S., Cristina, A., & Fernandes, P. (2013). *Quality of work life*.
- [3] Blackford, K. (2015). *Quality of Working Life - An Exploration of Contributing Factors and their Relative Salience to Employees*.
- [4] Chakraborty, P. (2022). An Investigational Study on Factors of Quality Culture in Pharmaceutical Manufacturing Sectors. *Shanlax International Journal of Management*. <https://doi.org/10.34293/management.v9is1.4855>
- [5] Coculová, J. (2016). Analysis of Selected Factors of the Quality of Work Life as Determinants of Work Performance. *Journal of Applied Management and Investments*.
- [6] Dahiya, R., & Rangnekar, S. (2019). Harnessing demographical differences in life satisfaction: Indian manufacturing sector. *International Journal of Business Excellence*. <https://doi.org/10.1504/IJBEX.2019.10023030>
- [7] Dey, M., & Tripathy, P. (2015a). *Abhinav International Monthly Refereed Journal of Research in Management & Technology QUALITY OF WORK- LIFE-A FULCRUM TO EMPLOYER-EMPLOYEE RELATIONSHIP*.
- [8] Dey, M., & Tripathy, P. (2015b). Quality of work- life-a fulcrum to employer-employee relationship. *Abhinav-International Monthly Refereed Journal Of Research In Management & Technology*.
- [9] Dr. S.S.Saravanan, Dr. S. S. S. (2024). The Study on Impact Work Life Balance Initiatives on Employee Morale At Solara Active Pharma Science. *International Journal For Multidisciplinary Research*. <https://doi.org/10.36948/ijfmr.2024.v06i06.34369>
- [10] Gazi, Md. A. I., Masud, A. A., Yusof, M. F., Islam, Md. A., Rahman, M. K., & Wang, Q. (2024). Factors affecting the quality of work life for industrial labour force: empirical evidence from a developing country. *BMC Psychology*. <https://doi.org/10.1186/s40359-024-02073-1>
- [11] Gist-Mackey, A. N., Piercy, C. W., & Bates, J. (2023). Pharmacy work: Intrinsic motivation and extrinsic rewards across role and setting. *Journal of The American Pharmacists Association*. <https://doi.org/10.1016/j.japh.2023.11.008>
- [12] Gornostaj, O., Mirus, O., & Stanislavchuk, O. (2020). *Examination of working conditions of pharmaceutical industry employees as a component of the occupational health and safety management system*. <https://doi.org/10.32447/20784643.22.2020.07>
- [13] Herlina, T. E., & Bachri, A. A. (2016). Pengaruh karakteristik demografi dan iklim organisasi terhadap quality of work life (qwl) dosen politeknik kesehatan banjarmasin. *JWM: Jurnal Wawasan Manajemen*. <https://doi.org/10.20527/JWM.V3I3.4>
- [14] Huda, K. N. (2017). Measuring the Impacts of Quality of Work Life Indicators on the Marketing Representatives of Pharmaceutical Industries. *Bangladesh Pharmaceutical Journal*. <https://doi.org/10.3329/BPJ.V20I1.32093>
- [15] Jaiswal, A. (2014). Quality Of Work Life. *Journal Of Business Management & Social Sciences Research*.
- [16] Jamwal, A., Agrawal, R., Gupta, S., Dangayach, G. S., Sharma, M., & Sohag, Md. A. Z. (2020).

Modelling of Sustainable Manufacturing Barriers in Pharmaceutical Industries of Himachal Pradesh: An ISM-Fuzzy Approach. https://doi.org/10.1007/978-981-15-2647-3_15

- [17] Kato, Y., Sekiya, T., Ishii, R., Hirako, Y., Satoh, H., & Kimura, H. (2024). Quality of work life (QWL) of community pharmacists and its association with subjective evaluations of pharmaceutical services. *Exploratory Research in Clinical and Social Pharmacy*. <https://doi.org/10.1016/j.rcsop.2024.100458>
- [18] Limongi-França, A. C. (2015). *Qualidade de vida no trabalho*.
- [19] Mishra, L. (2024). Mental Health and Well-being Programs for Pharma Employees. *Indian Scientific Journal Of Research In Engineering And Management*. <https://doi.org/10.55041/ijsrem39519>
- [20] Navya, N. (2024). A Study On Quality Of Work Life. *International Journal of Progressive Research in Engineering Management and Science*. <https://doi.org/10.58257/ijprems35054>
- [21] Norizan, N. F. H. M., Kumar, V. D., Subramaniam, M., Francis, S., & Hamid, M. S. A. (2022). *Assessment of Quality of Life of Pharmaceutical Employee by Measuring Work-Life Balance*. <https://doi.org/10.37134/jcit.vol12.1.1.2022>
- [22] Patil, D. U., & Prabhushwamy, M. S. (2014). Quality of work life - linkage with human resource productivity. *International Journal of Scientific Research in Education*.
- [23] Penmatsa, R., & Sreeram, A. (2021). Study the impact of Demographics on Life Domain and Global Life Satisfactions. *Turkish Online Journal of Qualitative Inquiry*.
- [24] Pokharkar, D., Patil, S. S., Sorate, T. A., Gupta, K., & Niman, V. R. (2022). *Journal of Pharmacy and Experimental Medicine Innovative Technologies in Pharmaceutical Industries*.
- [25] Riyono, B., Hartati, S., & Fatdina, F. (2022). Quality of Work Life (QWL) From Psychological Perspective and The Development of Its Measurement. *Jurnal Psikologi*. <https://doi.org/10.22146/jpsi.67973>
- [26] S, S. S. N., & S, S. (2016). A study on measuring the quality of work life. *International Journal of Commerce and Management Research*.
- [27] Saraji, G. N., & Dargahi, H. (2006). Study of Quality of Work Life (QWL). *Iranian Journal of Public Health*.
- [28] Sinha, C. (2012). FACTORS AFFECTING QUALITY OF WORK LIFE: Empirical Evidence From Indian Organizations. *Business and Management Research*. <https://doi.org/10.52283/NSWRCA.AJBMR.20120111A04>
- [29] Sinha, D. S., Sinha, S., & Sarangi, P. K. (2022). A study of influence of demographic variables on quality of work life (QWL). *Journal of Information and Optimization Sciences*. <https://doi.org/10.1080/02522667.2022.2133207>
- [30] Thriveni, K. K., & Rama, D. V. (2018). Impact of Demographic Variables on Work-Life Balance of Women Employees (with special reference to Bangalore City). *Journal of Advances in Agriculture*.
- [31] Tokcan, H. (2022). Quality of Working Life. *Oxford Research Encyclopedia of Psychology*. <https://doi.org/10.1093/acrefore/9780190236557.013.904>
- [32] Vaish, S., & Shekhawat, B. S. (2013). Impact of socio-demographic factors on quality of life of primary chronic daily headache patients. *Indian Journal of Pain*. <https://doi.org/10.4103/0970->

5333.119343

- [33] Varghese, S. (2013). *Quality of Work Life: A Dynamic Multidimensional Construct at Work Place - Part I*.
- [34] Velayudhan, T. K. M., & Yameni, M. D. (2017). *Quality of Work Life – A Study*. <https://doi.org/10.1088/1757-899X/197/1/012057>
- [35] Wen-quan, L. (2009). A Study on Quality of Work Life. *Journal of Shijiazhuang of University of Economics*.
- [36] Geetha, V., Shenbagasuriyan, R., & Senthilrajan, K. (2012). A study on effectiveness of qwl towards dharani sugars and chemicals ltd. *International Journal of Current Research and Review*.
- [37] Khodizadee, N. (2017). Analyze the Relationship between QWL and Organizational Citizenship Behavior Zabol University. *Journal of Global Pharma Technology*.
- [38] Keidel, R. W. (1982). QWL Development: Three Trajectories. *Human Relations*. <https://doi.org/10.1177/001872678203500904>
- [39] Golembiewski, R. T., & Sun, B. (1990). QWL improves worksite quality: Success rates in a large pool of studies. *Human Resource Development Quarterly*. <https://doi.org/10.1002/HRDQ.3920010106>
- [40] Levine, M. F. (1983). *Self-developed QWL measures1*.