

Quality of Work Life of Sanitation Workers in Kerala: An Evaluative Analysis

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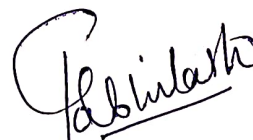
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DECLARATION

I hereby declare that this thesis entitled “**Quality of Work Life of Sanitation Workers in Kerala: An Evaluative Analysis**” is a bonafide record of research work done by me under the guidance of Dr.Edakkotte Shaji, Associate Professor (Retd), PG and Research Department of Commerce Government Arts and Science College Kozhikode (Affiliated to the University of Calicut), and has not been included in any other thesis submitted previously for the award of any degree. The contents of the thesis are undergone plagiarism check using iThenticate software at C.H.M.K. Library, University of Calicut, and the similarity index found is within the permissible limit. I also declare that the thesis is free from AI-generated contents.



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Certified that the thesis entitled “**Quality of Work Life of Sanitation Workers in Kerala: An Evaluative Analysis**” is a bonafide record of research work carried out by Sri.**ABHILASH.M.K** under my guidance and supervision for the award of Ph.D.Degree of the university of Calicut. No part of the thesis has been presented for the award of any degree, diploma or other similar title or recognition of any other university or institution before. He is allowed to submit the thesis to the University for Evaluation

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Dr. Edakkotte Shaji

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ABBREVIATIONS

AITUC	:	All India Trade Union Congress
ANOVA	:	Analysis of Variance
AVE	:	Average Variance Extracted
BPR	:	Business Process Reengineering
BPO	:	Business Process Outsourcing
CFA	:	Confirmatory Factor Analysis
CGA	:	Career Growth and Advancements
CH	:	Challenges
CITU	:	Centre of Indian Trade Union
CO	:	Compensation
EB	:	Expectation and Believes
EFA	:	Exploratory Factor Analysis
FE	:	Fairness and Equity
FQWL	:	Factors of Quality of Work Life
HS	:	Health and Safety
JA	:	Job Attributes
JS	:	Job Security
JS	:	Job Satisfaction
OC	:	Operational Challenges
OD	:	Organizational Dynamics
PC	:	Personal Challenges
PPE	:	Personal Protective Equipment
PQWL	:	Perception on Quality of Work Life
QWL	:	Quality of Work Life
SMEs	:	Small and Medium Enterprises
SS	:	Social Support and work place relationship

STS	:	Socio-Technical System Model
TD	:	Training and Development
WC	:	Working Condition
WL	:	Work Load
WLB	:	Work Life Balance
WM	:	Work Motivation

ABSTRACT

Rapid population growth, urbanisation, modernisation, and accelerated development have intensified environmental challenges, thereby diminishing the environment's capacity to sustain human activities. Among these, municipal solid waste has emerged as a critical concern, particularly in densely populated urban areas, where its increasing volume poses serious threats to both public health and the environment. As a result, effective solid waste handling, management, and appropriate disposal have become pressing environmental priorities. Furthermore, sanitation, a key indicator of quality of life, serves as an important measure of a country's socio-cultural and economic progress; however, inadequate sanitation and poor hygiene practices continue to impede development across health, education, and both rural and urban sectors.

Sanitation workers are the backbone of waste management systems and are essential for keeping the environment clean and protecting public health. However, they have to deal with difficult working conditions, health dangers, social stigma, and restricted access to protective gear and job security. Kerala is one of the fastest-growing states in India, with people living close together and urban elements spreading into rural and semi-urban areas. The quick rise in municipal solid garbage has made it even harder to manage. Limited land availability, insufficient infrastructure, and poor waste separation at the source make management much harder. Municipalities and businesses hire sanitation workers to handle the growing amount of trash. To make waste management in Kerala better, these workers need better infrastructure, policy changes, better working conditions, social recognition, and welfare measures.

In this context, the quality of work life (QWL) of sanitation workers is a critical aspect of ensuring the overall well-being and dignity of workers. The study uses a mixed-method approach combining survey and interview to gather data on their perception and challenges during calamities. For sampling purposes, the state of Kerala is divided into three regions on the basis of geographical location, namely North, Central and South Kerala. The study is both descriptive and analytical in nature and mainly depends on primary data. Primary data were collected from 380

sanitation workers working under municipalities and corporations by using a structured questionnaire. Inferential statistics were applied to augment the researcher's inference. The statistical analysis was carried out with the help of statistical software SPSS version 22 and AMOS version 23, data were analysed using frequency, percentage, mean, standard deviation one-sample t-test, independent sample t test, ANOVA/Welch test, correlation and structural equation modelling.

The study finds that sanitation workers possess a moderate quality of work life (QWL) in their employment. Although they convey satisfaction in terms of their working conditions, social support and workplace relationships, their perceptions remain moderate with respect to critical aspects such as compensation, workload, work-life balance, job security, health and safety, training and development, and opportunities for professional advancement. Moreover, data reveal that sanitation workers experience problems that exceed the average during calamities. These findings highlight the necessity for the implementation of specific initiatives to improve the quality of work life for sanitation workers in Kerala. Enhancing pay, incentives, and welfare benefits for low-income workers, while also mitigating workload pressures and expectations for high-income individuals, can foster greater job satisfaction and equilibrium across economic strata. Moreover, in times of calamity, authorities must bolster disaster preparedness by guaranteeing the availability of sufficient safety equipment, instituting explicit operational protocols, providing prompt support services, and refining disaster response systems through appropriate training, coordination, and thorough welfare initiatives.

The study concludes that improving the QWL of sanitation workers requires a multifaceted approach involving Government initiative, employees' responsibility, societal awareness, recommendations including stricter safety protocols, providing regular health check-ups and promoting awareness campaigns to reduce stigma associated with sanitation work, thereby enhancing the QWL of sanitation workers, contributing to their dignity, well-being, and overall sustainability of sanitation service.

Keywords: Sanitation workers, quality of work life, job satisfaction, calamities, work life challenges.

സംഗ്രഹം

ഭൂതഗതിയിലുള്ള ജനസംഖ്യാവളർച്ച, നഗരവൽക്കരണം, ആധുനിക വൽക്കരണം, ത്വരിതഗതിയിലുള്ള വികസനം എന്നിവ പാരിസ്ഥിതികമായ വെല്ലുവിളികൾ രൂക്ഷമാക്കിയിട്ടുണ്ട്, ഇത് മനുഷ്യരുടെ പ്രവർത്തനങ്ങളെ നിലനിർത്താനുള്ള പരിസ്ഥിതിയുടെ ശേഷി കുറയ്ക്കുന്നു. പ്രത്യേകിച്ച് ജനസാന്ദ്രതയുള്ള നഗരപ്രദേശങ്ങളിൽ മുനിസിപ്പൽ ഖരമാലിന്യങ്ങൾ ഗുരുതരമായ ഒരു പ്രശ്നമായി ഉയർന്നുവന്നിട്ടുണ്ട്. ഇതാകട്ടെ പൊതുജനാരോഗ്യത്തിനും പരിസ്ഥിതിക്കും സാരമായ ഭീഷണി ഉയർത്തുന്നുമുണ്ട്. തൽഫലമായി ഫലപ്രദമായ ഖരമാലിന്യ കൈകാര്യം ചെയ്യൽ, അതിന്റെ മാനേജ്മെന്റ്, ഉചിതമായ രീതിയിലുള്ള നിർമാർജ്ജനം എന്നിവ അടിയന്തിര പാരിസ്ഥിതിക മുൻഗണനകളായി മാറിയിരിക്കുന്നു. കൂടാതെ ജീവിതനിലവാരത്തിന്റെ പ്രധാന സൂചകമായി ശുചിത്വം മാറിയിരിക്കുന്നു. ഒരു രാജ്യത്തിന്റെ സാമൂഹിക-സാംസ്കാരിക, സാമ്പത്തിക പുരോഗതിയുടെ പ്രധാന അളവുകോലായി ഇതിനെ പരിഗണിക്കുകയും ചെയ്യുന്നു. അപര്യാപ്തമായ രീതിയിലുള്ള ശുചിത്വമാർഗ്ഗങ്ങൾ ആരോഗ്യത്തിനും വിദ്യാഭ്യാസത്തിനും ഗ്രാമ- നഗര മേഖലകളിലെ വികസനത്തിനും തടസ്സമായി മാറുന്നു.

മാലിന്യസംസ്കരണസംവിധാനങ്ങളുടെ നട്ടെല്ലായി പ്രവർത്തിക്കുന്ന ശുചിത്വത്തൊഴിലാളികൾ പരിസരം വൃത്തിയാക്കി സൂക്ഷിക്കുന്നതിലും പൊതു ജനാരോഗ്യം സംരക്ഷിക്കുന്നതിലും വലിയ പങ്കുവഹിക്കുന്നവരാണ്. എന്നിരുന്നാലും ബുദ്ധിമുട്ടുള്ള തൊഴിൽസാഹചര്യങ്ങൾ, ആരോഗ്യസംബന്ധമായ അപകടങ്ങൾ, സാമൂഹികമായ അനാദരവ്, സംരക്ഷണത്തിനുള്ള ഉപകരണങ്ങളുടെ പരിമിതി, തൊഴിൽസുരക്ഷ എന്നിവ ഇവർക്ക് നേരിടേണ്ടിവരുന്നു. ഇന്ത്യയിലെ ഏറ്റവും വേഗത്തിൽ വളരുന്ന സംസ്ഥാനങ്ങളിലൊന്നാണ് കേരളം. മാത്രമല്ല ആളുകൾ കൂടുതലായി അടുത്തടുത്തായി താമസിക്കുന്നതും നഗരഘടകങ്ങൾ ഗ്രാമപ്രദേശങ്ങളിലേക്കും അർദ്ധനഗരങ്ങളിലേക്കും വ്യാപിക്കുന്നതും കേരളത്തിന്റെ സവിശേഷതയാണ്. ആയതിനാൽ മുനിസിപ്പൽ ഖരമാലിന്യത്തിന്റെ ഭൂതഗതിയിലുള്ള വർദ്ധനവ് കൈകാര്യം ചെയ്യുന്നത് കൂടുതൽ പ്രയാസമായിരിക്കുകയാണ്. ഭൂമി ലഭ്യമാകുന്നതിലുള്ള പരിമിതികൾ, അടിസ്ഥാന സൗകര്യങ്ങളുടെ അപര്യാപ്തത, ഉറവിടത്തിൽനിന്ന് മാലിന്യം വേർതിരിക്കുന്നതിലെ പോരായ്മ എന്നീ പ്രശ്നങ്ങൾ കൃത്യമായ മാനേജ്മെന്റിന് പ്രശ്നം സൃഷ്ടിക്കുന്നുണ്ട്. തദ്ദേശസ്വയംഭരണ സ്ഥാപനങ്ങളിലേയും ബിസിനസ്സുകാർ വാടകക്കെടുത്തതുമായ ശുചിത്വ തൊഴിലാളികൾക്ക് വർദ്ധിച്ചു വരുന്ന മാലിന്യം കൈകാര്യം ചെയ്യേണ്ടിവരുന്നു. തൊഴിലാളികൾക്ക് മികച്ച അടിസ്ഥാന സൗകര്യങ്ങൾ, നയപരമായ കാര്യങ്ങളിലുള്ള മാറ്റം, മെച്ചപ്പെട്ട തൊഴിൽ സാഹചര്യങ്ങൾ, സാമൂഹികമായ അംഗീകാരം, ക്ഷേമ നടപടികൾ എന്നിവയിലൂടെ മാത്രമേ കേരളത്തിലെ മാലിന്യസംസ്കരണ പദ്ധതി മികച്ചതാക്കാൻ കഴിയുകയുള്ളൂ.

ഇത്തരമൊരു സാഹചര്യത്തിൽ, ശുചിത്വത്തൊഴിലാളികളുടെ തൊഴിൽ ജീവിതനിലവാരമാണ് (QWL) തൊഴിലാളികളുടെ മൊത്തത്തിലുള്ള ക്ഷേമവും അന്തസ്സവും ഉറപ്പാക്കുന്നതിൽ നിർണായക ഘടകമായി പരിഗണിക്കേണ്ടത്. ദുരന്തകാലങ്ങളെക്കുറിച്ചുള്ള അവരുടെ ധാരണകളേയും വെല്ലുവിളികളേയും അടിസ്ഥാനമാക്കിയുള്ള ദത്തശേഖരണത്തിനായി ഈ പഠനം സർവ്വേയേയും അഭിമുഖത്തേയും സംയോജിപ്പിച്ചുകൊണ്ടുള്ള രീതിയാണ് സ്വീകരിച്ചിരിക്കുന്നത്. സാമ്പിൾ ആവശ്യങ്ങൾക്കായി ഭൂമിശാസ്ത്രപരമായി കേരളസംസ്ഥാനത്തെ വടക്ക്, തെക്ക്, മധ്യം എന്നിങ്ങനെ മൂന്ന് മേഖലകളായി തിരിച്ചിരിക്കുന്നു. പഠനം പ്രധാനമായും

പ്രഥമാകരങ്ങളെ അടിസ്ഥാനമാക്കിയുള്ളതാണ്. ആത്യന്തികമായി പഠനം വിവരണാത്മകവും വിശകലനാത്മകവുമാണ്. മുനിസിപ്പാലിറ്റികൾക്കും കോർപ്പറേഷനുകൾക്കും കീഴിൽ പ്രവർത്തിക്കുന്ന 380 ശുചിത്വ തൊഴിലാളികളിൽനിന്ന് ഘടനാപരമായ ചോദ്യാവലി ഉപയോഗിച്ചാണ് പ്രാഥമികമായ ദത്തം ശേഖരിച്ചത്. ഗവേഷകന്റെ അനുമാനം മെച്ചപ്പെടുത്തുന്നതിനായി അനുമാന സ്റ്റാറ്റിസ്റ്റിക്സാണ് പ്രയോഗിച്ചത്. സ്റ്റാറ്റിസ്റ്റിക്കൽ സോഫ്റ്റ്‌വെയറിന്റെ സഹായത്തോടെയാണ് സ്റ്റാറ്റിസ്റ്റിക്കൽ വിശകലനം നടത്തിയിരിക്കുന്നത്, ഫ്രീക്വൻസി, ശതമാനം, വൺ-സാമ്പിൾ ടി-ടെസ്റ്റ്, ANOVA, പരസ്പരബന്ധം, ഘടനാപരമായ സമവാക്യ മോഡലിംഗ് (SEM) എന്നിവ ഉപയോഗിച്ചാണ് ദത്തവിശകലനം നടത്തിയിരിക്കുന്നത്.

ശുചീകരണതൊഴിലാളികൾക്ക് അവരുടെ തൊഴിലിൽ മിതമായ തൊഴിൽജീവിതനിലവാരം (QWL) ഉണ്ടെന്ന് പഠനം കണ്ടെത്തി. അവരുടെ തൊഴിൽസാഹചര്യങ്ങൾ, സാമൂഹികപിന്തുണ, തൊഴിലിടത്തിലെ ബന്ധങ്ങൾ എന്നിവയിൽ അവർ സംതൃപ്തി പ്രകടിപ്പിക്കുന്നുണ്ടെങ്കിലും, നഷ്ടപരിഹാരം, ജോലിഭാരം, തൊഴിൽ-ജീവിത സന്തുലിതാവസ്ഥ, തൊഴിൽ സുരക്ഷ, ആരോഗ്യവും സുരക്ഷയും, പരിശീലനവും വികസനവും, പ്രൊഫഷണൽ പുരോഗതിക്കുള്ള അവസരങ്ങൾ തുടങ്ങിയ നിർണായക കാര്യങ്ങളുമായി ബന്ധപ്പെട്ടുള്ള അവരുടെ ധാരണകൾ പരിമിതമാണ്. മാത്രമല്ല, ദുരന്ത സന്ദർഭങ്ങളിൽ ഈ തൊഴിലാളികൾ ശരാശരിയേക്കാൾ കൂടുതൽ പ്രശ്നങ്ങൾ അനുഭവിക്കുന്നുണ്ടെന്ന് ദത്തത്തിലൂടെ കടന്നുപോകുമ്പോൾ മനസ്സിലാക്കുന്നു. കേരളത്തിലെ ശുചിത്വതൊഴിലാളികളുടെ തൊഴിൽജീവിതനിലവാരം മെച്ചപ്പെടുത്തുന്നതിന് പ്രത്യേക സംരംഭങ്ങൾ നടപ്പിലാക്കേണ്ടതിന്റെ ആവശ്യകത യിലേക്കാണ് ഈ കണ്ടെത്തലുകൾ വിരൽചൂണ്ടുന്നത്. താഴ്ന്ന വരുമാനക്കാരായ തൊഴിലാളികളുടെ വേതനം വർദ്ധിപ്പിക്കൽ, പ്രോത്സാഹനങ്ങൾ, ക്ഷേമാനുകൂല്യങ്ങൾ എന്നിവ വർദ്ധിപ്പിക്കുന്നതിനൊപ്പം ഉയർന്ന വരുമാനക്കാരായ വ്യക്തികളുടെ ജോലിഭാരസമ്മർദ്ദങ്ങളും പ്രതീക്ഷകളും ലഘൂകരിക്കുന്നതും സാമ്പത്തിക തലങ്ങളിലുടനീളം കൂടുതൽ തൊഴിൽ സംതൃപ്തിയും സന്തുലിതാവസ്ഥയും വളർത്തിയെടുക്കുന്നതിന് സഹായിക്കും. കൂടാതെ, ദുരന്തസമയങ്ങളിൽ അധികാരികൾ ദുരന്തസന്നദ്ധത ശക്തിപ്പെടുത്തേണ്ടതാണ്. അതിനായി മതിയായ സുരക്ഷാപകരണങ്ങളുടെ ലഭ്യത ഉറപ്പാക്കുകയും വ്യക്തമായ പ്രവർത്തനമാർഗ്ഗരേഖകൾ രൂപീകരിക്കുകയും സമയോചിതമായ പിന്തുണാസേവനങ്ങൾ നൽകുകയും വേണം. ഇതോടൊപ്പം ഫലപ്രദമായ പരിശീലനം, ഏകോപനം, സമഗ്രമായ ക്ഷേമപദ്ധതികൾ എന്നിവ കൂടി നടപ്പിലാക്കണം .

ജീവനക്കാരുടെ ഉത്തരവാദിത്തം, സാമൂഹികമായ അവബോധം, കർശനമായ സുരക്ഷാ പ്രോട്ടോക്കോൾ ഉൾപ്പെടെയുള്ള സുരക്ഷാ ശുപാർശകൾ, പതിവായ ആരോഗ്യപരിശോധനകൾ നടത്തൽ, ശുചിത്വജോലിയുമായി ബന്ധപ്പെട്ട അപമാനം കുറയ്ക്കുന്നതിനുള്ള ബോധവൽക്കരണ കാമ്പെയനുകൾ പ്രോത്സാഹിപ്പിക്കൽ എന്നിവയിലധിഷ്ഠിതമായ ബഹുമുഖമായ സമീപനമാണ് ശുചീകരണതൊഴിലാളികളുടെ QWL മെച്ചപ്പെടുത്തുന്നതിന് സർക്കാർ മുൻകൈയിൽത്തന്നെ വേണ്ടതെന്ന നിഗമനത്തിലാണ് പഠനം എത്തുന്നത്. ഇതിലൂടെ ശുചീകരണതൊഴിലാളികളുടെ QWL വർദ്ധിപ്പിക്കാൻ കഴിയുന്നു. അതിനൊപ്പം അവരുടെ അന്തസ്സിനും ക്ഷേമത്തിനും ശുചിത്വസേവനത്തിന്റെ മൊത്തത്തിലുള്ള സുസ്ഥിരതയ്ക്കും സംഭാവന നൽകാനും കഴിയുന്നു.

താക്കോൽ വാക്കുകൾ: ശുചീകരണതൊഴിലാളി, തൊഴിൽ ജീവിതനിലവാരം, തൊഴിൽ സംതൃപ്തി, ദുരന്തങ്ങൾ, തൊഴിൽ ജീവിതത്തിലെ വെല്ലുവിളികൾ.

Chapter 1

Introduction

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1.1 Background of the study

Human resources, the fulcrum of the success of an organization are the repositories of talent, innovation and a collective potential, whose successful utilization and empowerment are crucial for driving competitiveness, resilience and sustainable growth. A content work force is crucial resource of any organization to thrive; it depends on the proper selection, motivation and overall wellbeing of the workers. In the modern civilized world, the most appropriate approach is to utilize their talents effectively while giving due consideration and treating them with dignity, recognizing them as human beings and upholding all human values. Quality of work life (QWL) is a comprehensive concept that involves many elements which helps to create a favorable working environment in any organization. QWL is a value based, generic and multifaceted term which covers a person's feelings about every dimensions of work like; remuneration, job security, working conditions, social integrations, brings a balance between work life and personal life and improving employees work related happiness. QWL can be described as the way an individual perceives and evaluates the characteristics intrinsic to his/her past experience, education, race and culture(Feuer, D, 1989). The concept was first emerged during 1960s specifically around 1969, when people were talking about how to match the interests of workers and organizations. In this approach, the role of trade unions was also seen as important.(Drexler J.A. JR. & Lawler III E.E. A, 1977).

Sanitation is one of the key indicators of quality of life and is often used to assess socio-cultural and economic development of the country. Poor sanitation and hygiene significantly limit the effectiveness of development efforts in areas such as health, education, and both rural and urban development. Rapid population growth, modernization, urbanization and fast development have created new challenges, reducing the environment's capacity to support human activities. The environmental problems have resulted to be a major concern for sanitation workers in managing solid waste of highly populated cities. As a result, municipal solid waste has grown to be a major issue that could endanger both human health and the

environment(Supangkat, S., & Herdiansyah, H., 2020). Today, increasing population density has created serious problems in waste management. Irresponsible human activities have harmed the environment and pushed the environment into a critical condition. In the post-globalization era, excessive consumerism and market-driven lifestyles have increased both the quantity and complexity of waste generated. Every human being has the fundamental right to live in an environment with clean air, safe water, and healthy soil. Maintaining a clean environment is not the responsibility of civic authorities alone; it is the shared duty of all members of society. A clean environment also helps to prevent health problems and reduces medical expenses.

In South Asia workers who are engaged in the job of cleaning toilets, empty tanks or pits, clean and unblock sewers and manholes face the problem of lack of effective social security measures, alternative livelihoods and personal protective equipment. They are excluded from the labour market and their work is unrecognized. They are facing discrimination in their lives, suffer social stigma and lack labour rights. Some countries have enacted laws to protect their rights, but application of these laws has been lacking (ILO, 2021)

World Health Organization defines as “sanitation generally refers to the provision of facilities and services for the safe disposal of human urine and faeces, the sanitation also refers to maintenance of hygienic conditions through services such as garbage collection and waste water disposal”. Safe disposal of human excreta, personal hygiene, usage and maintenance of safe drinking water, safe disposal of solid waste, food and home hygiene, safe disposal of liquid waste and community environment cleanliness are the seven components of sanitation task. Sanitation worker is “a person responsible to cleaning, maintaining, operating or emptying the equipment or technology at any step of sanitation chain”(WHO, 2018). Sanitation also means cleaning streets, parks, public places, sewers, drainage systems, and public toilets. In simple terms, sanitation workers include manual scavengers and sweepers who clean roads and open areas, collect waste, and maintain drains and public toilets.

In India, the sanitation workforce is estimated to comprise about 5 million individuals, of whom nearly 2 million are engaged in hazardous work involving direct exposure to human faeces (WaterAid India, 2024). The work of sanitation is intrinsically integrated with caste; sanitation workers are commonly referred to as Safai Karmacharis. To protect their interests, the Government of India enacted the National Commission for Safai Karmacharis Act in 1993. Under this Act, the National Commission for Safai Karmacharis functions under the Ministry of Social Justice and Empowerment, with the primary objective of recommending specific measures to the central government to eliminate inequalities in opportunities, status, and access to resources faced by sanitation workers (Govt. of India, 1993). Despite these efforts, the majority of sanitation workers in India are employed on a contractual basis, characterized by poor working conditions and low wages. Gender disparity is also prevalent in the sanitation sector, where women are mainly assigned tasks such as door-to-door garbage collection and sweeping, which are perceived as less physically demanding, while men are engaged in hazardous work such as cleaning sewers and drains, lifting and loading waste into trucks. Even when men and women perform similar tasks, women generally receive lower wages, reflecting societal biases that consider male workers to be more efficient. Such remuneration inequalities persist even in the government sector.

Kerala has made significant progress in sanitation, with 82 municipalities ranking among the top 1,000 cleanest cities in the country, Kochi corporation ranked 50th among all local bodies in the country (The Hindu., 2025). Sanitation workers in Kerala tend to receive relatively better wages and enjoy a higher social status compared to their counterparts in other states. In Kerala sanitation workers are a part of Public Health Wing of municipality and corporation. They are posted through employment service department and are working under Junior Health Inspector of municipality or corporation.

1.2 Significance of the study

In India, the caste system continues to determine the fate of sanitation workers, forcing many Dalits, their families, and communities into hazardous and

low-paid work. Among the various forms of sanitation work, manual scavenging remains the most dangerous and degrading task, despite being outlawed. Workers are often compelled to perform these activities without adequate protection or support. India first banned manual scavenging through the Employment of Manual Scavengers and Construction of Dry Latrines (Prohibition) Act, 1993. This was later replaced by the Prohibition of Employment as Manual Scavengers and Their Rehabilitation Act, 2013 to strengthen the ban and emphasize rehabilitation. Nevertheless, manual scavenging persists in the country. In response to a question in Parliament in July 2019, the Minister of Social Justice and Empowerment reported that a national survey conducted by NITI Aayog identified 39,625 manual scavengers, with an additional 14,505 identified by the states; Kerala alone accounted for approximately 600 manual scavengers (Govt. of India, 2019). To achieve universal sanitation coverage and improve hygiene across India, the Government of India launched the Swachh Bharat Mission on 2 October 2014, with the primary objective of eliminating open defecation and providing access to sanitation facilities for all by 2019 through the construction of household and community toilets and behavior change initiatives. Although the mission mobilized extensive resources and resulted in a significant increase in toilet coverage and declared Open Defecation Free (ODF) status for many villages, the progress of the programme was uneven, with vulnerable groups such as women, persons with disabilities, senior citizens, adolescent girls, sanitation workers, and waste segregators often left behind in terms of access, inclusion, and sustained sanitation benefits (Govt. of India, 2014).

As per the NITI Aayog Health Index Report for 2023-24 Kerala obtained 80 score in health sector (national average 77) and achieved fourth rank among Indian state for health performance (NITI Aayog., 2025). Nava Kerala Mission was started in 2016 which focus on four sectors namely health, education, agriculture and sanitation. In order to cover all these sectors four specific missions was launched; they are Ardrum, Haritha Keralam, Life Mission scheme and Education Scheme. Haritha Keralam is designed with a goal to improve sanitation in the state (Government of Kerala., 2016). Waste management scheme will be implemented to

clear out waste from commercial and residential places by disposing of waste to secure sites where people and environment will not face any consequences.

The success of Haritha Mission depends on the commitment of local self-governments. Sanitation workers are working on the lower part of the hierarchy and they are directly contacted with community. This grass root workers facing different problems on the execution of socially enforceable waste management system. These workers are handling the garbage manually with their bare hands; they do not have any personal protective measures like gloves, masks or boots. They are forced to enter into the manholes and drains for cleaning, the toxic gases and foul odour from these drains lead to suffering from respiratory diseases. The common diseases among these types of workers include back aches, skin infections, asthma, bronchitis, diarrhoea and tuberculosis. During the period of calamities like COVID, NIPPA, flood, communicable diseases and other natural calamities they are fearful about their and their family health. Sanitation work become a challenging sector with increasing population, change in life style, urbanization, consumption behavior of people etc. The quality of work life of sanitation workers is considered crucial as it directly impact their well-being, the productivity of their work and job satisfaction. They are facing number of challenges like health risk, physical hazards and also social stigma. The present study on QWL helps in understanding their quality of work life which helps to identify the area of improvements, enabling the policy makers and employers to create better working condition and promote their overall well-being. This study is a crucial step towards recognizing the contribution of work force and ensuring that they work in safe and healthy environment.

1.3 Statement of the problem

As per 2011 census urban population of Kerala state is 15.93 million representing about 47.72% of total population. Projected increase of urban population by 2051 is estimated to be 91%. The increase in the urban population is from five districts mainly Ernakulam, Thrissur, Kozhikode, Kannur and Alappuzha. The number of towns in Kerala has increased from 159 to 520 during the period between 2001 to 2011. Census also point out that 2.57% of urban households do not

have access to a sanitary toilet in their residential premises, of this 1.67% defecate in open while remaining 0.90% use shared public sanitation facility(ORGI, 2011). Urbanization is a growing reality in Kerala, and one of the major challenges arising from rapid urbanization is effective waste management. Urban Kerala consist of six municipal corporation and 87 municipalities. According to Article 246 of constitution, sanitation is a state subject. Government of Kerala formed different programs to manage healthy disposal of waste. Haritha Kerala Mission, Suchitwa Mission, Clean Kerala campaign, Haritha Karma Sena etc are some of the programs initiated by the state to overcome this problem.

A study on quality of work life of sanitation workers is increasingly important aspect in a society as sanitation workers are facing numerous occupational hazards, social stigma and inadequate working conditions. Sanitation workers, foot soldiers of Kerala hygiene system are usually working continues six to eight hours starting from early morning depends on place they are allotted. Besides the usual work they have to perform extra work at the time of natural calamities like COVID 19 and communicable diseases. During natural calamities they have the responsibility of cleaning First Line Treatment Centers of COVID-19. They have to manage the waste in hospitals that will be a threat for them at the time of communicable diseases. As a part of usual work they have to collect waste from all houses including the house in which COVID patients are staying. Majority of sanitation workers are women, they may feel that they are able to manage their family and work life. As per the normal family customs prevailing in the state female has to look after the family affairs, it creates many challenges both at home and work place. There is a pressing need to assess and address the QWL of sanitation workers to improve their well-being. This study looks at the factors that affect the quality of work life of sanitation workers, their perception about QWL, their job satisfaction, the main challenges they face during disasters and suggest interventions to enhance the QWL of sanitation workers for more dignified work environment.

1.4 Scope of study

Sanitation workers may be two types organized and unorganized(WHO, 2025). Organized workers are working under a formal set up but unorganized workers who are the largest population working hard for the waste management of the society. Some of them working under a labour contractor for daily wage; some others collect scrap which has resale value. In organized sector of Kerala the sanitation workers are appointed by municipalities and corporations, members of Haritha Karma Sena, Members of Kudumbasree Mission and some special workers in certain special projects (like AZHAKE in Kozhikode Corporation, Amruth Mithram project of Central Government) are working in solid waste management system. Waste management is done by local self-government, in Kerala there are 941 Gramapanchayaths, 87 municipalities and 6 corporations. Gramapanchayaths are using either HarithaKarmaSena members or Kudumbasree members for doing the sanitation job. Proposed study tries to examine the major factors affecting the quality of work life and how it effects the job satisfaction of sanitation workers appointed through employment service in various municipalities and corporations of Kerala.

1.5 Objectives of the study

The purpose of the study is to investigate the quality of work life of sanitation workers in Kerala. In order to realize the following objectives have been framed

1. To identify various factors that influences the quality of work life of sanitation workers in Kerala
2. To measure the perception of sanitation workers towards quality of work Life
3. To analyze the job satisfaction of sanitation workers and the influence of QWL on their overall job satisfaction.
4. To check the mediating role of perception in the relationship between quality of work life and job satisfaction of sanitation workers.
5. To examine the challenges faced by sanitation workers during calamities and how it affects their QWL.

1.6 Hypotheses of the study

- ☐ H1₁: There is an average level of influence of factors on quality of work life of sanitation workers in Kerala.
- ☐ H1₂: There is a significant difference in the quality of work life among sanitation workers according to their demographic classifications.
- ☐ H1₃: There is an average level of perception of sanitation workers regarding their quality of work life.
- ☐ H1₄: There is a significant difference in the perception of sanitation workers according to their demographic classifications.
- ☐ H1₅: Perception level has significant impact on QWL
- ☐ H1₆: There is an average level of job satisfaction among sanitation workers in Kerala
- ☐ H1₇: There is a significant difference in the job satisfaction of sanitation workers according to their demographic classifications.
- ☐ H1₈: QWL have significant influence on job satisfaction of sanitation workers.
- ☐ H1₉: Perception act as mediator in the relationship between Quality of work life and job satisfaction
- ☐ H1₁₀: There is an average level of challenges faced by sanitation workers during calamities.
- ☐ H1₁₁: There is a significant difference in the challenges faced by sanitation workers according to the demographic groups.
- ☐ H1₁₂: There is significant relationship between challenges and quality of work life of sanitation workers.

1.7 Operational definitions of the terms and concepts

The key terms used in this study are explained briefly below

➤ **Sanitation**

Sanitation is the process of cleaning the surrounding by the safe disposal of the waste and maintaining the clean water and toilets. A clean environment will prevent the creation and spread of many diseases, will keep a good public health. Absence of a proper sanitation facility may create and spread many communicable diseases, will harm to the existence of human community in the universe.

➤ **Sanitation workers**

Sanitation workers are the people who are responsible for doing sanitation jobs of the society. They keep community clean by collecting waste from both domestic and commercial places, clean the street, drains, manholes and maintain the sanitation system in the urban area. They are the workers appointed by municipalities and corporations to do the sanitation job in their respective area.

➤ **Solid waste**

Solid waste is any unwanted solid items generated through human activities such as households, agriculture, industry, hospital or any commercial establishments. Solid waste includes food waste, paper, metals, plastics, packing containers and other items that people throw away because of no further use for them. It may be biodegradable like food items, papers and so on and non-biodegradables like plastic and metals.

➤ **Hygiene**

Hygiene means the habit or practice of keeping cleanliness in self-body and surroundings in which we live. A good hygiene help to prevent germs, infections and diseases that leads to a better and healthy environment

➤ **Employee satisfaction**

It is the level of happiness that an employee feels about their work, remuneration, work place and overall working environment. It shows how much employees are satisfied with their salary working condition, job security and opportunity for growth.

➤ **Quality of work life**

Quality of work life is the overall wellbeing and job satisfaction of employees in their work place. It covers different factors which are affecting the employee's job like their working conditions, pay, job security, health and safety, work life balance, social recognition and so on. A good quality of work life motivates employee to work hard for the betterment of the organization.

➤ **Perception**

Perception means how we see and understand the things around us or it is a process of understanding what we see, hear, feel, smell or taste. In an employee's point of view perception means how workers think and understand about their job, work place and management. Their perception is shaped by their attitude, experience and working condition. If the workers have a positive perception they will be motivated to perform their job in an efficient manner. Perception regarding quality of work life means the judgment and interpretation of workers about multiple dimensions of their job, such as working conditions, remuneration, employment security, organizational support, work life balance, career growth opportunities, which collectively influence on the overall wellbeing and work performance of employees.

➤ **Calamities**

It refers to a disastrous event; either natural or human made those results in extensive destruction, adverse social consequences and economic loss on the affected community's capacity to cope using its own resources. It includes flood,

drought, Nipah Virus, COVID-19 and other communicable diseases which seriously disrupt public health system and social life.

➤ Evaluative analysis

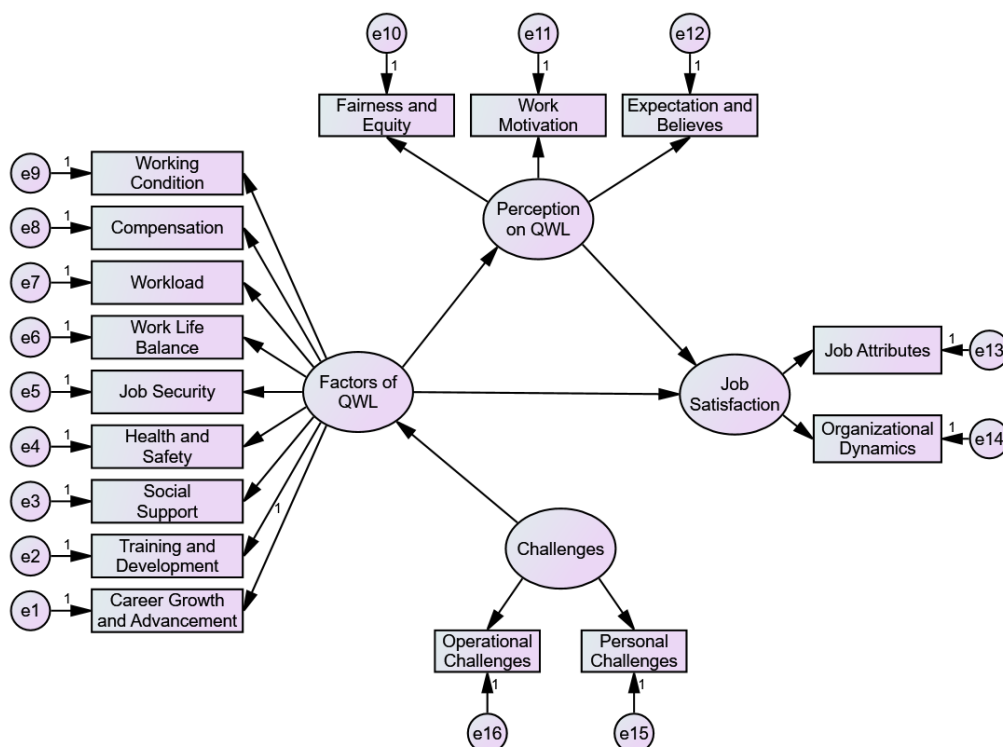
Evaluative analysis means not to make a simple description about something but to make a critically evaluate and assess a phenomena. Here the researcher made a thorough assessment and judgment about the quality of work life of sanitation workers in Kerala by examining various aspects of work life such as their working condition, work load, job security, and any other factors that contribute to their overall well-being in their roles

1.8 Conceptual Model

The conceptual frame work of the present study is explained in the following figure 1.1

Figure 1.1

Conceptual model of the study



1.9 Period of study

The present study has a period of four years commencing from 22nd March 2022. The secondary sources of data were collected for a period of four years and the primary data were collected during the period from November 2024 to June 2025. The detailed plan of the research was explained in table 1.1 below

Table 1.1

Detailed research program of the researcher

SL No.	Particulars	Duration
1	Registration Date	22-03-2022
2	Preparation and duration for PQE examination	10 months
3	Review of literature	12 months
4	Questionnaire preparation	6 months
5	Data collection	8 months
6	Data Analysis	6 months
7	Report writing	6 months

1.10 Limitation of the study

Some of the limitations of the study are listed below

1. The samples collected from only few selected municipalities and corporations in Kerala. Hence the conclusion arrived at may lack universal application
2. The result of the study is limited to the information provided by the respondents as there was no mechanism to check whether the information is correct or not'

3. Questionnaire is the tool which is used for collection of primary data relating to sanitation workers which has the limitation due to low response rate, complex and confusing questions and surveys that might be too long
4. Temporary workers are afraid of giving information especially about their facilities because of their fear of job loss.
5. Only the sanitation workers from municipalities and corporations were included, unorganized sanitation workers were not included in this study.

1.11 Lay out of the report

Chapter 1- Introduction

This chapter presents the background of the study, statement of problem, significance of the study, scope of the study, objective of the study, operational definitions, hypotheses, conceptual model, limitation and layout of the report.

Chapter 2- Review of literature

This part of the report made an attempt to give a comprehensive view of various aspects and opinion of authors and research scholars from the researches done both at national and international level

Chapter 3- Quality of work life and sanitation work- A theoretical over view

This chapter explicates a theoretical overview of the concept of quality of work life, its evolution, definitions, models, who is a sanitation worker and type of sanitation job.

Chapter 4- Research Methodology

This chapter is fully devoted to explain about the research methodology adopted for the study which consists of research design, sampling method and size, tools used for data collection and analysis, test of reliability, normality and validity.

Chapter 5- Facets of Quality of Work Life

This chapter is indented to discuss the result of analysis of data related with the demographic profile of sanitation workers in Kerala and about the different facets of quality of work life.

Chapter 6- Worker's Perception on Quality of Work Life

This chapter discuss in detail about the perception of sanitation workers regarding their quality of work life.

Chapter 7- Job Satisfaction of Sanitation Workers

In this chapter job satisfaction of sanitation workers is analysed and interpreted using primary data and relationship between job satisfaction and quality of work life is also covered.

Chapter 8- Work Life Challenges faced by Sanitation Workers during calamities

This chapter deals with various challenges faced by sanitation workers during calamities and discussed in detail and how employees QWL is influenced on their work life challenges is also covered in this chapter.

Chapter 9- Findings, suggestions and conclusion

This chapter summarises finding of the study, suggestions based on the findings, conclusion of the study and also suggest a few topic for further research.

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CHAPTER 2

REVIEW OF LITERATURE

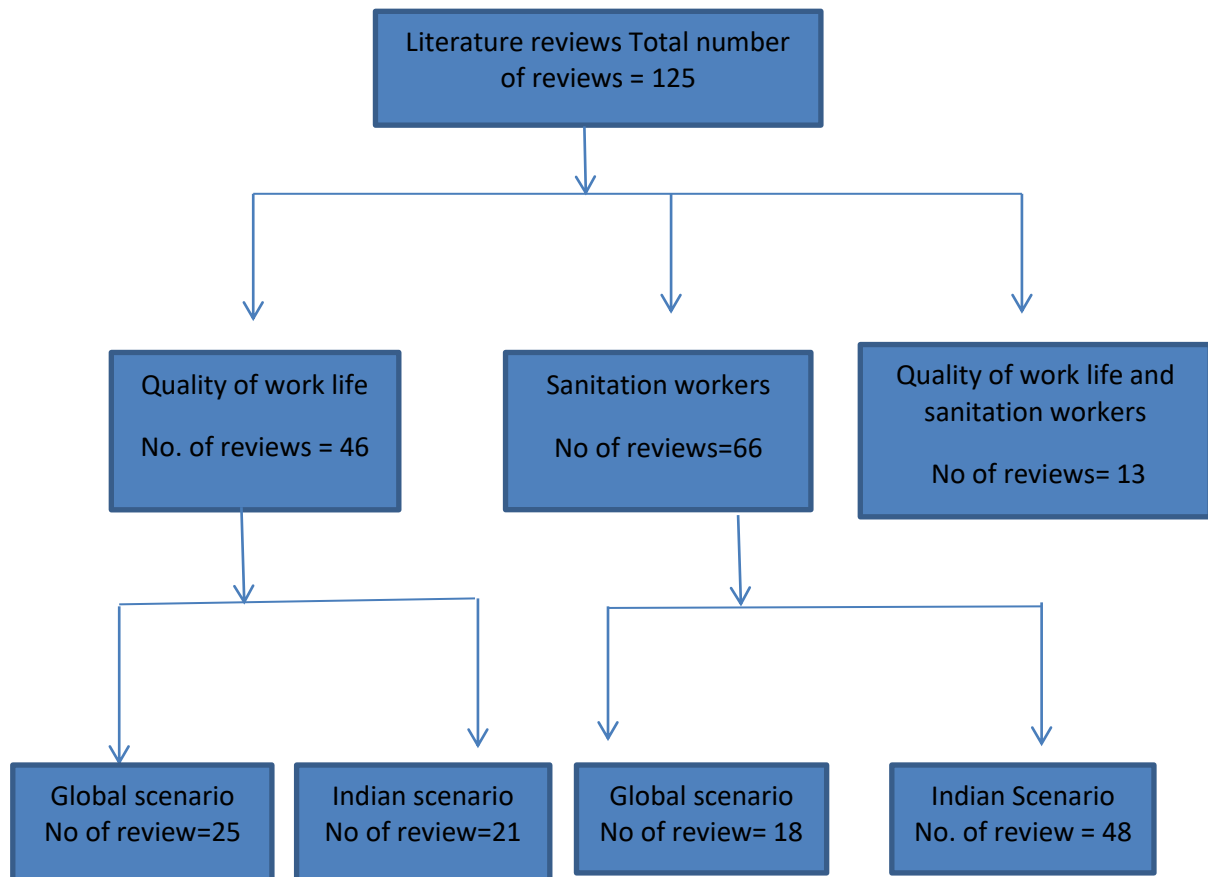
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2.1 Introduction

Quality of work life of employees is considered to be valuable contribution in the present scenario that highlights the need for job security, good working conditions, equitable and fair compensation and social support for sanitation workers. This concept was introduced in 1960's later on many researchers contribute to it and it is still improving based on the changing socio-economic situation of employee. Sanitation is one of the major determinants of development of the nation. A clean surrounding is essential for the maintenance of public health. Sanitation workers work hard for maintaining the public health.

This chapter is an attempt made to review the relevant studies to know the research gap in existing knowledge level. There are different methods for literature reviews like Bibliometric Analysis, Thematic Review, systematic literature review, meta-analysis etc. This study follows a thematic approach for writing literature review. This approach is concerned with critical evaluation of the related literature based on the themes (Snyder, H., 2019). Total of 125 reviewed is mainly divided in to three that is Quality of work life, sanitation workers and quality of work life and sanitation workers. The studies about QWL and sanitation workers are again divided in to two that is global scenario and Indian scenario. Therefore this chapter is divided in to five major heads as below

1. Quality of work life in global scenario
2. Indian view of quality of work life
3. Sanitation workers in the global scenario
4. Sanitation workers in India
5. Quality of work life and sanitation worker

Figure 2.1*Literature review of the study*

2.1.1 Quality of work life in global scenario

The concept of Quality of work life was evolved from the contributions of several figures in the field of organizational behavior and management.

Richard E Walton (1973) a professor of Harvard Business School is the primary contributor published a paper titled "Quality of Work Life: What Is It?" define the concept as "A process in which a company creates a working environment that enhances employees' well-being, job satisfaction, and overall work experience." The author identified eight main aspects of quality of work life, including adequate and fair compensation, safe and healthy working environment,

opportunity to use and develop human capacities, opportunity for career growth and security, social integration in the work organization, work life balance, Constitutionalism in the work organization and finally work and the total life space.

Nadler,D.A.et al(1980) in his study explore the key determinants that affect how well labour management measures to improve QWL performance. Through the empirical research, author was able to pinpoint a number of variables that affected the project's performance, casting light on crucial components like leadership, employee involvement, and communication. The author in his study tries to introduce valuable insights in to how organization can foster harmonies labour relationship and improve overall wellbeing of their work force and highlights in the context of contemporary labour management and organizational strategies.

Fuller,S.H(1980) emphasized that management, labour unions, and employees are all involved in the decision-making process when using a holistic approach to quality-of-work-life projects. Project outputs are more successful as a result of this teamwork, which encourages a sense of ownership and mutual understanding among stakeholders. The importance of teamwork, ongoing development, and employee engagement in generating successful outcomes for both the workforce and the organization as a whole is highlighted in the article.

Wurf,J (1982) in his article examined the intrinsic relation between QWL and business ethics in the private sector. It emphasizes the importance of reasonable working conditions and fair pay from the viewpoint of a union. Collective bargaining, which is often aggressive in both the public and commercial sectors, is the way how unions attempt to accomplish these goals. These initiatives seek to increase a worker's sense of dignity and fulfillment, highlighting the significance of addressing both corporate ethics and the quality of working life for a productive workplace.

Mirvis, P. H. & Lawler III, E. E. (1984) in their study introduced Accounting for Quality of work life; it goes through the rational for the quality of work life report, theory behind QWL, measures of QWL and concluded with an analysis of factors to be considered in preparation of future report. There are two

common criteria to the definition of QWL first one is work and the other work environment that influence the employees work life and second one is criteria for employee welfare and wellbeing. Paper viewed that QWL is an integrated form of economic, social and psychological relationship between organization and employees. They developed an Organizational Assessment Methodology to account for QWL.

Havlovic, S. J, (1991) in his study focused on the influence of QWL, factors on human resource outcomes like absenteeism, accidents, and grievances. The study uses data which were collected from Midwestern Heavy Manufacturing firm and the data includes 48 months of measurements before QWL and 81 months of measurements after QWL. After the adoption of QWL process it is observed that the rates of minor accidents, grievances, absentee and labour turnover rates are reduced. By allowing the discussion related with security issues inside the plant among the workers it shows that workers take their full potential in reducing accidents.

Lau, R.S.M & May, B. E., (1998) investigated how the QWL have an effect on market and financial performance of a company in the areas of sales growth, asset growth, return on equity and return on asset. The study revealed that companies which provide a better working environment and that satisfies the employees exceptional growth. If the employees feel proud in their job they may show a better commitment towards the organization and thereby increase employee morale. The end outcome is that businesses with a stronger reputation for rewarding employees will likely see their own development and profitability increase.

Lewis.D and et al (2001) in their article entitled “Extrinsic and intrinsic determinants of quality of work life” focus on the objective of whether the extrinsic and intrinsic or prior traits best predict satisfaction with quality of work life in health care sector. Extrinsic traits considered are salaries, tangible benefits and safety and hygiene of the work place. Intrinsic traits consist of skill level, autonomy & challenges and orientation to work. Prior traits are those of the workers involved like gender, employment status etc. They identified the following traits which have an important role in determining the quality of work life of health care workers- pay,

benefits, supervisor's style, communication and discretion. They concluded that managers in the field of health care sector having an intention to improve QWL focus on these traits and give less attention enhancing staff autonomy or discretion.

Green, F. B., & Hatch, E. (2002) researchers critically examine whether the business process reengineering (BPR) has the unintended consequence on the satisfaction and wellbeing of the employees within the organization. To assess the effects of BPR on many aspects of working life, such as job happiness, job security, and general job contentment, the authors use a multidimensional lens. They evaluate the potential trade-offs between improved operational efficiency and potential negative effects on employee welfare through a methodological approach. The study indicates that control and supervision are less important than challenge and empowerment. The quality of work life will increase in a company where empowered labour is present as a result of business process re-engineering and helps in achieving organizational objectives.

Greenhaus, J. H. and et al (2003) emphasizes the significance of attaining work-family balance and its favorable correlation with a number of quality of life aspects. Author reports that individuals who have more work-family conflict have generally poorer levels of overall quality of life. On the other hand, people with higher levels of work-family facilitation—a sign that their roles in the family and at work complement one another—exhibited higher levels of quality of life.

Zin, R. M., (2004) in his study identifies the relationship between QWL factors and organizational commitment among private sector professional engineers in Malaysia. The researcher uses Walton's model of QWL to analyze the impact of factors on organizational commitment. QWL factors like supervision pay & benefit and integration has an influence upon the effective commitment. Variables like supervision pay & benefit and social relevance has a positive influence on normative commitment. Variables like participation, supervision and pay & benefit has significant effect on the continuance commitment.

Saraji, G. N. & Dargahi, H. (2006) in their study reported that a high quality of work life is important for every organization to attract and keep skilled

employees. The study was conducted among hospital employees of Tehran University of Medical Sciences. Researcher uses 14 factors effecting the QWL like job security, sexual harassments, discrimination in job, interesting and satisfying work, trust in senior managers, working together, recognition by superior, carrier prospects, control by supervisor, health and safety standards, balance of work and life, managers treatment of staff, amount of work to be done and stress. It was noted that majority of workers are unsatisfied with majority of QWL factors and hospital authority should take necessary step to satisfy the employees

Beh, L. S., & Idris, K. (2006) the study focused on career related variables of QWL, career satisfaction, career tenure, career achievement and career balance are variables that have a positive impact on the QWL of workers. Predictors of QWL were found by using step wise regression method which includes organizational climate, career achievement, career satisfaction and career balance. Among them organizational climate is the most important factor which has a great influence on the quality of work life of employees.

Martel, J. P., & Dupuis, G. (2006) made an attempt in their study to critically examine the existing theories and methodologies of QWL, highlighting the inherent short coming and gap in the existing literature. They put forward a new model which offset the short coming of the existing model which encompasses a comprehensive frame work that consider both individual and organizational factors providing a holistic understanding of QWL. It accounts for various dimensions, including job satisfaction, work environment, work-life balance, and psychological well-being.

Royuela et al (2008) made an attempt to study the difference in the definition of QWL among academic committee and those put out by institutional entity with a focus on European commission. They scrutinize how institutions and academia perceive and measure QWL, shedding light on the divergent criteria and indicators they employ. The study found that Institutions may place more emphasis on economic variables and labour market performance, but the academic community gives social and psychological aspects of quality of work life more weight.

Reddy, L. M., & Reddy, M. P (2010) investigate about from where the concept came?, they argued that it originated from the motivational theories of Maslow, Mc Gregory and Herzberg. They put forward the following dimensions for QWL- job security, health and wellbeing, work and non-work balance, competency developments, job satisfaction, adequate and fair compensation

Engler, R., et al. (2012) in their paper titled “Design applied to improve the quality of work life of scavengers”, the study was conducted at Nova Lima city of Brazil. There was an association of 25 people associated with the activity of collecting recycle materials from the households as a source of income and they are the part of the Association called ASCAP. The study reveals that the storage space provided by the local authority was not enough to store, segregate and that is why the efficiency of the workers were adversely affected. The garbage collectors were working even without protective mask and gloves. The study suggested a variety of product should be designed by the ASCAP in order to do the job more easily and efficiently. Mechanization is a good weapon that improves the work life of sanitation workers in the world

Bolhari, A. et al., (2012) used different psychological and behavioral measures to evaluate work stress levels and quality of work life. The results of the study showed that occupational stress has a considerable detrimental impact on the employees of e-workspaces' quality of work life. Reduced work-life balance, higher burnout, and reduced job satisfaction were all linked to high levels of stress. These findings highlighted the significance of recognizing and managing occupational stress in remote work settings to improve workers' wellbeing and output.

Mogaddam, A., & Azad, N.(2015) reveals several significant factors such as job security, workplace environment, and opportunities for professional development emerged as crucial contributors to enhanced QWL. Additionally, positive interpersonal relationships and a healthy work-life balance were identified as pivotal elements for overall job satisfaction. This study offers insightful information for businesses looking to enhance the happiness and well-being of their staff.

Sinval, J et.al (2020) undertook a study to examine the internal structure of measures like dimensionality, reliability, and measures in variance and its interaction with other variables such as burnouts and job engagements, in order to determine the validity of quality of work life scales. Considering the similarities in their cultures and histories, the researcher chose Brazil and Portugal for the study of the cross-cultural adaptation of the quality of work-life scales. Health and safety, economic and family needs, social needs, esteem needs, actualization needs, knowledge needs, and aesthetic needs are the seven major needs that are measured. The data were gathered from 566 Portuguese and 597 Brazilian workers, and they fit the quality of work life scale second order model well and have high reliability

Medina-Garrido, J. A. et al. (2023) a group of researchers examined how work–family policies are related to employee well-being and job performance in the Spanish banking sector. They collected data from 1511 employees and uses a structural equation model, found that mere existence of work-family policy does not directly improve job performance of employees. However genuine access to such policies significantly boosts employee well-being which has a positive impact on job performance. This shows the importance of enforcing supportive policies will boost employee well-being and organizational productivity.

Taye, B. E. et al. (2023) in an article entitled “Quality of work life and organizational commitment of the academic staff in Ethiopian universities” were published in 2023 by Taye et al. They investigated about the factors of QWL and its effect on organizational commitment. The study uses data collected from 185 academic staff in Ethiopian universities. By using Structural Equation Modeling, found that compensation, rewards, and work-life balance are significantly and positively related to organizational commitment. The findings underscore the importance of strategic human resource management in enhancing academic staff engagement and improving university services.

Ahmad, M. et al., (2023) conducted a study on the Impact of organizational climate and QWL on the creativity of civil servant teachers in state vocational high schools in Serang, Indonesia, during the COVID-19 pandemic. Study uses multiple

linear regression analysis to show the relationship among the variables. With a significance value of .000 ($\alpha < .005$), the results showed that teachers' creativity was positively and significantly impacted by both organizational climate and QWL. Furthermore, with a determination coefficient of 86.1%, the combined impact of organizational climate and QWL on creativity was significant. According to these findings, encouraging a positive work environment and improving QWL are essential for encouraging teacher innovation, particularly during trying times like the pandemic.

Nigam et al. (2023) studied about United States health workers perceived working conditions and mental health by using quality of work life as a tool. The author considered change in quality of work life before and after COVI-19. The results of the study point out that poor mental health including higher levels of burnout, anxiety and depression are seen among the health workers. Staff shortage, work place harassment and reduced trust in management are the present working condition of health care workers. The study recommended for creating positive organizational factors such as supervisors support, sufficient time to complete the work and trust in leadership will help to create a better mental health.

Seid et al. (2025) carried on a systematic review and meta-analysis of studies on quality of work life among nurses in Ethiopia, highlighted that poor QWL compromises work performance, motivation and retention of employees. Study recommended for a better salary, higher educational opportunities and a secure work environment should be provided to the nurses that will boost professional QWL.

2.1.2 Indian view of quality of work life

The concept of QWL was also used by researchers in India during its initial stage of development itself. Industrial revolution in 19th and 20th century made a challenging working condition to employees, nominal wages, and long hours of work prompting workers to organize and demand better treatment. The root of Labour movements in India trace back during British colonial ruling, the first recorded labour strike was in 1890 by textile workers in Bombay demanding for a

better working condition(Chandavarkar, R., 1994). In 1920 All India Trade Union Congress (AITUC) was formed, which is the first trade union in India. Later on in 1947 Indian National Trade Union, Hind Mazdoor Sabha (HMS) in 1948, Centre of Indian Trade Union (CITU) in 1970 and many on latter period was established(Sinha, P. R.N et al., 2017). The concept of QWL in Indian industrial sector was begun to use during 1970s and 1980s due to the global development in industrial relations and human resource management. Initially Industrial sectors are giving more importance to productivity and profit by neglecting employee's well-being. But later on due to the force of different trade unions, labour laws and growing awareness of human rights the focus gradually shifted towards improving working condition of employees. Post liberalization era witnessed a rapid growth in private sector and entry of many multinational companies to India, organizations began to invest more on employee welfare schemes, training and development, and organizational culture to improve QWL.(Kumar, S. & Tripathi, S., 2016). Different researchers from India developed their own contribution to the concept of QWL, some of them were discussed below

Kornbluh, H. (1984) in his study focus on the intersection of workplace democracy and the overall quality of work life. It highlighted what are the potential advantages and challenges while adopting democratic principles in an organizational working environment. He scrutinizes issues like employee involvement in decision-making processes, the restructuring of organizational hierarchies, and the resultant effects on job satisfaction and general well-being. The study point out that when employees are given greater chance in decision making will lead to more satisfying and fulfilling work experience. It also admits that there are challenges in implementing workplace democracy, and that these challenges would probably differ depending on the organizational setting.

Shamir, B. & Salomon, I. (1985) jointly published an article entitled "Work-at-home and the quality of working life" which explore the implication of work-at-home arrangements on the quality of working life (QWL). They analyzed several aspects of the work experience, comparing working from home to traditional

workplace settings. The study goes through the consequence of employees when the job is shifted from employer premises to employees home, considering the factors such as autonomy, social interaction, and work-life boundaries. The result inferred that working from home can offer increased flexibility; it may also lead to challenges relating to isolation and blurred distinctions between work and personal life

Igbaria, M. et al (1994) in their study fills a significant knowledge gap about the particular difficulties and factors affecting job satisfaction and involvement in this particular professional domain. The authors create a complex framework for analysis by fusing components of job participation theory and quality of work life views. They considered a number of factors, including as job happiness, career advancement, and the degree of alignment with organizational objectives. The study results show complex connections between work experiences, job involvement, and the overall quality of work life of information systems and staff. The authors identify key factors that significantly influence job satisfaction and engagement, shedding light on critical areas for organizational improvement and intervention.

Bal Shrikrishna, (2009) In his PhD thesis titled “The Impact of Quality of Working Life on Job Performance and on job Satisfaction of Employees” point out the key components influencing QWL are organizational culture, workplace relationships, training and development opportunities, reward systems, job security, and autonomy. By analyzing responses from employees in both public and private sectors, the study demonstrates that improved QWL leads to sensitive job satisfaction, which in turn positively impacts individual and organizational performance.

Jayakumar, A., & Kalaiselvi, K., (2012) believes that QWL is the favourableness and unfavourableness of a job environment in which the workers are engaged. This concept was familiar among the academicians only in 1970’s but the movement for QWL by the trade unions begins only in 1980’s in the world. In India even today workers and unions are on a defensive stage, concentrates on how to

retain their job rather than how to improve their QWL. Through better QWL an organization can create a better environment where the workers are able to do their work joyfully.

Ahmad, S. (2013) reported that QWL is drawing more attention today globally because more than one third of the lives of an employee are spent in work place. His study concentrates firstly on the seven dimensions of QWL namely health and safety, employment security, job satisfaction, occupational stress, work environment, work life balance and human relations. Secondly about the strategies to improve the QWL like job design and work organization, employee participation, work force awareness, career guidance and inter group relationship and thirdly about the role of human resource manager in proper implementation of QWL, for that purpose he has to develop a self-managing work team, provide proper rewards, create an alternative work schedule and a supportive organizational culture.

Bindu, J & Yashika, S., (2014) in their paper analyzed the development of QWL on the academic side especially on higher educational sector. QWL of academicians in private technical institute are very poor. The study reveals that dimensions of QWL and job satisfaction are positively related. Faculties also show a positive relationship only when there is a possibility for growth. For academicians, four main factors that affect quality of work life are decision-making power, opportunities for growth and development, recognition and appreciation, and chances for promotion.

Battu, N., & Chakravarthy, G. K. (2014) made an intention to compare the QWL of nurses and paramedical staffs in private and public sector hospitals in Vijayavada. QWL of both nurses and paramedical staff are good, many staff members dedicate their lives to serving people and protecting patients' lives without expecting many extra benefits. Study finally concluded that private sector hospital management in case of private hospitals and government in case of public hospitals should take necessary measures on working condition, organizational climate and work stress.

Ashwini, J. & Anand, D (2014) intends to assess the QWL among the employees in service sector, the main focus of the study was on knowing the overall well-being and job satisfaction of employees in this sector. The study takes in to account various factors like job security, work environment, inter personal relationship and work life balance. The research highlighted the significance of job security and conducive work environments in enhancing overall job satisfaction and well-being. The study underscored the pivotal role of positive interpersonal relationships and balanced work-life equilibrium in contributing to a high quality of work life

Bindi K. R(2017) made an effort to determine the level of quality of work life employees of major Business Process Outsourcing organizations located in the Info Park, Kakkanad Kochi, being the communication hub in the State of Kerala. Job and career satisfaction, employee engagement, working environment, the home-work interface, control at work, and general well-being are some of the different elements that are relevant to the quality of work life in BPO. The investigation indicates that the quality of work life in the investigated BPO industry is either medium or good.

Asharini, N.A et al. (2018) in their study reveals that Quality of work life does not greatly affect organizational commitment, but job satisfaction has a positive effect on it. QWL and job satisfaction do not directly impact employee performance; however, organizational commitment significantly enhances employee performance. Furthermore, QWL does not indirectly affect employee performance, while job satisfaction indirectly boosts performance through the mediating role of organizational commitment. The study suggests that the company should focus on strengthening employees' organizational commitment to improve overall performance.

T. S. Nanjundeswaraswamy is one of the eminent researcher who has done a lot of research in the field of QWL, the author in his article with his co-researcher D.R.Swami on the topic“An Empirical Research on the Relationship between Quality of Work Life and Leadership Styles in SMEs” they point out that a job is

said to be excellent when it is given prime importance to both technology and human needs. QWL interventions have to be considered that positively affect the employees satisfaction and performance. Researchers put forward nine components of QWL which is suitable for Indian SMEs, they are- work environment, relation and co-operation, organization culture and climate, compensation and reward, training and development, facilities, job security, job satisfaction, adequacy of resources and autonomy of work. The study clearly indicates that QWL is a multi-dimensional aspect so that this aspect should be taken into account at the time of designing the job(Nanjundeswaraswamy, T. S.& & Swamy, D. R., 2013). In another article by the same author with Sandhy M.N. which focus on identifying key components and its significance influence on employee over all work satisfaction and wellbeing. They identified job satisfaction, work-life balance, job security, working conditions, career development and participation in decision-making and organizational culture. High level of QWL leads to increased productivity, employee motivation and employee retention, benefiting to both organization and employees.(Nanjundeswaraswamy, T. S. & Sandhya, M. N., 2016). How different leadership styles influence on QWL and employee performance were also studied by him. They examine transformational and transactional leadership styles as mediating factors. Based on their study they concluded that leadership style plays a significant mediating role in enhancing the positive effects of QWL on employee outcomes like satisfaction, commitment, and productivity. Transformational leadership shows a stronger impact in fostering a supportive work environment and motivating employees. The research highlights the importance of adopting appropriate leadership approaches to improve QWL and, consequently, employee performance. (Nanjundeswaraswamy, T. S. et al., 2020).

Ancy John (2022) in the thesis titled “Quality of Work Life of Healthcare Professionals in Kerala” which covers motivational factors for quality of work life, job satisfaction, financial and non-financial rewards, stress and stress management strategies and symptoms of stress were experienced by healthcare professionals. Better quality of work life can be seen where there is less stress from top to bottom, there for it is crucial to create a balance between personal and professional lives.

The study concludes pointing that the health system requires suitable physical infrastructure, equitable compensation, training programs for professional development, tension-free lifestyles, and to hire additional staff to meet the staff deficit in the hospital thereby the work load of healthcare experts will be lessened and they will have more free time.

Jayaraman, S et al., (2023) examined QWL as a precursor to work–life balance with collegiality and job security acting as moderators, and job satisfaction serving as a mediator. The result of the study shows that higher QWL significantly enhances work–life balance; collegiality and job security positively moderate this relationship, while job satisfaction mediates the effect of QWL on work–life balance. These results suggest that organizations aiming to improve employees' work–life balance should focus on enhancing QWL, fostering collegial relationships, ensuring job security, and boosting job satisfaction.

Priya, M. G. S. & Anandh, K. S., (2024) studied about the factors influencing QWL of professionals in Indian construction industry. Job satisfaction, career growth, work family interface, work culture and management behavior are the key determinants of QWL. Work commitments, career development opportunities and supportive work environment will enhance QWL of construction professionals.

Gaur, J. & Tarkar, P.,(2025) investigate about how balancing work life dynamics influence job satisfaction among Indian working class from diverse industries. Remote work options, flexible working arrangements and family friendly organizational policies are significantly affected on work life balance which will lead to overall satisfaction and well-being. Study highlighted the importance of supportive work environments that help employees to manage their professional and personal life.

2.1.3 Sanitation workers in the global scenario

Sanitation workers play an important role in maintaining a clean and hygiene environment in the world. They are entrusted with the responsibility of cleaning the

public places, managing the waste and ensuring the safe disposal of human waste. Look around the world the job of sanitation work is highly informal, unpaid or under paid, unregulated exposing workers to hazardous substances and infectious diseases without adequate protection or healthcare benefits (World Bank, 2019). In South Asian and Sub-Saharan African countries, manual scavenging and open defecation-related work persist; marginalized communities are forced to do these jobs and violating basic human rights (UN-Habitat., 2020). These disparities exist even in high income nations; they are facing health challenges because of inadequate enforcement of safety standards (WHO, 2021). Different studies related with the work of sanitation done by different researcher across the world, some them are listed below

Edwards, L. N. & Edwards, F. R. (1982) conducted a study to know the relationship between public unionism and remuneration of public sanitation employees, the study reveals that remuneration pattern of the public sanitation workers who have union is higher than those workers who have no union. The change in the total remuneration range from 1% to 63%. Unions are given more importance to fringe benefits than monetary benefits. The impact of unionism is greater in those cities that do not employ a professional manager.

Zock, J. P., 2005 identifies that cleaning job is one of the largest employments among the total working population in the world. This job includes cleaning floors, furniture, windows, vehicles, machines and other work equipment. The occupational hazard faced by the cleaners depends up on the working task, cleaning equipment used, cleaning product used and environment to be cleaned. The working time of cleaners may be either before the official hours of the premises or after the official hours. The possibilities of occupational accidents are high because buildings are designed for purposes other than cleaning. Use of different chemical substance for cleaning will be a chemical hazard in the form of dermal and respiratory problems for the cleaners. The author highlighted certain measures to protect the interest of cleaning staff they are rotation of cleaning job, training programs should be arranged to create an awareness about the hazards, promote the

use of equipment, use of carts to carry the cleaning equipment, waste bag should be handled by using gloves and proper vaccination should be taken for them.

Yan, Y. et al. (2015) studied about the health status and occupational protection of sanitation workers in Wuhan City. Rapid urbanization increases work load and work complicity of sanitation workers in developing countries in the world. Study reveals that prevalence of illness is higher among sanitation workers than the general population of China. Workers and their supervisors neglect the use of masks, soaps, hand sanitizers and job training which will protect them from long term health effects. Study concluded that compared to administrative staff, sanitation workers had much more skin problems and further reported that the young workers had more knowledge about the diseases so they use protective measures than old one. The study recommended for creating awareness among the workers about the use of PPEs that is why dermatological problems can be reduced to minimum.

Abedi Ali Jafar et. al.(2017) reported that possibility for spreading communicable diseases among sanitation workers are higher, The researcher analyzed the socio demographic profile of the respondents like their age, religion, sex, educational qualification, social class, own a pet . The study reveals that the knowledge about the open garbage dump near to the residential area and stray dogs increase the risk factor for canine rabies transmission among sanitary workers. They recommended that proper training should be provided to the risk groups and dog handlers for the control of rabies and measures should be taken to control the population of stray dogs near the residential area

Haregewoin, Bekele (2020) in his study on “Socio-economic Analysis of Sanitation Workers in Municipal Solid Waste Collection in Addis Ababa, Ethiopia” made an attempt to study the perception and lived experience of sanitation workers in relation with the management of solid waste. For the purpose of analysis they used the convenient method of sampling and point out that the role of sanitation workers is inevitable for the socio economic life of peoples of the city of WEREDA. The dignity and socially degradable treatment in life is the major concern of sanitation workers, also identified that there is improper waste handling at secondary

stage and delayed waste collection, public and environmental hazards, dignity and violation of rights.

Deguchi, M. & Chie, M. (2020) emphasized the underappreciated workers in Japan who are forced to do their job without much precaution about their health but to provide essential service to the public in dangerous situation, the study also revealed that sanitation workers concern about the privatization of public sector that may undermine the general interest of the society especially at the time of pandemic. The study found seven themes like alerted by overseas news of potential dangerous, Fear of contracting COVID 19, Negotiated for safer protocol and gear, increased work load, discrimination and stigma and increased public attention and awareness.

Zaqout, M et al., (2020) made study about the dangerous job of Cleaning of drainage, pits and man holes performed by sanitation workers. Manually removing of faecal sludge from pits and tanks are the common practice in almost all middle income countries including Bangladesh. They take employees in private co-operatives, government employees and self-employed workers who are engaged in the removal of waste in the pits. Workers are against the mechanization as they fear about loss of their job and they cannot think about an alternative job. But due to the influence of government organization and non-government organization the attitude of private co-operative workers are improved a little. All these three category of workers are not in accordance with the ILO criteria for 'decent work'. Authors concluded that social and financial barriers hinder the workers from sustainable livelihood. The authorities should think not only about universal standard of sanitation in the country but also on those workers who work for the attainment for that goal

Tripathy, P., & Carrière, D. (2020) in their article addresses the common misconceptions and constrains viewpoints about dense Asian cities, which frequently characterize them as slums, turmoil, and suffering. By emphasizing the vital roles played by members of the labouring classes, such as security guards and sanitation workers, authors draw attention to the complex realities of urban life. These people manage the daily complexities of socio-political, economic, and

infrastructural networks while upholding the structured and organized metropolitan order. The invisible labor of sanitation workers is equally vital, as they manage waste disposal with minimal disruption, they show flexibility and innovation in changing crowded urban settings by repairing, cleaning, and maintaining infrastructures like pipelines and sewers. The paper makes the case that maintaining an efficient and well-organized city requires ongoing adaptation and reform, which is frequently carried out by the working classes. To reconstruct and redefine the lively life of the city, these individuals take on the challenging task of managing people, politics, hierarchies, and systems. The paper delves into the unacknowledged contributions of these workers who possess essential spatial knowledge, skills, and strategies.

Patwary, M. M et al.(2021) published an article which attempt to study working conditions of sanitation workers of low middle income countries during the period of corona pandemic. They argued that workers in middle income countries are forced to do continuous and additional work without adequate remuneration, proper personal protective measures and without the knowledge of treatment of COVID 19. The study put forward certain suggestions like countries with low income has to modify its present national policies and must follow international guide lines on health and safety at work place and authorities should provide better hygiene for all in accordance with United Nations Sustainable Development Goals.

Hassan, M.M et al.,(2021) tried to know the work challenges, knowledge about occupational hazards, social and health status and the use of personal protective measures by the sanitation workers in Multan, were the workers are facing not only the physical hazards but also social and economic marginalization. Most of the workers are using tobacco in their life and they do not get enough support and privilege in the family affairs.

Botchwey, C. O. A. et al., (2022) argued that pure water, better hygiene and satisfactory sanitation are the back born of social and economic growth. They have an intention to know about the occupational health and safety practice of sanitation workers. Occupational stress, hazardous conditions, remuneration and job security

are the four indices that affect the working condition of sanitation workers. Inadequate PPEs supplied by the university authorities is another problems faced by this workers. The study identified that major challenges faced by them are poor remuneration inadequate tools, poor supervision, unfavorable weather and abuse as well as assault

Tolera, S. T. et al., (2024) made a meta-analysis of studies on sanitation workers worldwide, noticed that 36%of the workers among the workers sustained occupational injuries due to inadequate occupational and health safety services. The author calls for a stronger policy, national regulation and OHS initiatives to protect sanitation workers.

Neiroukh, H. et al., (2025) made a cross sectional study to examined injuries and skin conditions of sanitation workers in West Bank (Palestine), reveals that more than half of the workers injured during their work due to sharp tools and falls. Many workers lacked adequate training and protection despite frequent exposure to heat and prolonged standing.

Gada, N. P et al., (2025) conducted a community based survey of sanitation workers from five municipalities in Nepal found that musculoskeletal disorders affected around 36 % of workers specially sweepers, while waste collectors frequently face needle stick wound. The paper also point out the need for targeted health intervention and safer work practice.

2.1.4 Sanitation workers in India

As per the last census (2011) total population of India is 121.09 crores. Out of this population 31.5% that is 37.7 crores are living in urban area. Sanitation workers have a crucial role in maintaining health and hygiene of people especially in urban areas. Even though they have a crucial role, they are often face hazardous working conditions, marginalization and limited access to health and welfare facilities. The literature about sanitation workers highlights the existence of caste based discrimination, occupational related health issues and systematic neglect by policy frame work (Bezwada, W., 2021). Number of studies documented about the

pathetic nature of their work, shame related with their job and urgent need for policy intervention to ensure their dignity and well-being(Rao, S., 2020). This literature reviews has an aim to go through the socio-economic condition of sanitation workers in India, challenges faced by these workers and to find out the research gap for further studies.

Sundari, S. (2003) discovered that Employees who are doing sanitation works in the urban cities of India are usually migrant labours from rural area; they are generally living in slums of the cities. The study discovered that migrant households are living in unhygienic and congested places having no basic facilities like potable water, good air and good sanitation facilities. Author put forward a suggestion that a comprehensive package for improving the urban environment and health.

Beck, H. & Darokar, ShaileshKumar,(2005) in their study on National scheme for liberation and rehabilitation of scavengers in Maharashtra was attempted by Mahathma Phule Backward Class Development Corporation Ltd. Most of the liberated scavengers are either working under the municipal corporation or under some other formal organization doing the job of sweeping the road, gardening, cleaning the office premises, clerical or supervisory work. For rehabilitation of manual scavengers different training programs like carpentry, plumbing, masonry, wiring, bicycle repairing etc were given to such workers for rehabilitating them to other jobs but good number of workers have hardly shown any interest in opting for such program.

R. Duraipandi,(2008) in his Phd thesis reveals about the income of scavengers that there is a huge deviation in the annual average per capita income, per capita debt, per capita savings and investment between male and female scavengers. The inequality is high among female than male scavengers. Earning members in male and productive assets in female scavengers are dominant factors which influence the consumption pattern. Lack of literally skills to take advantages of government reservation in education and employment they are not able to participate in job mobility. He concluded that Tamilnadu Scavengers Association

had made many things for the rehabilitation of scavengers but there is much more thing is to be done; among the southern state this state recorded the worst condition for manual scavengers.

Mishra, A. et al., (2012) investigates the socio-economic conditions of sanitation workers in Ahmedabad, Gujarat. The study also comprehensively examines their livelihoods and educational backgrounds, shedding light on the challenges they face. The study point out that a sizable proportion of these workers are mired in a cycle of poverty that includes poor pay and little possibilities for further education. The report emphasizes the urgent need for policy initiatives to enhance sanitation workers' livelihoods and educational chances. It promotes all-encompassing changes that deal with wider socio-cultural causes that contribute to their marginalization in addition to economic issues.

Kumar, V. & Pandit, R. K, (2013) in their study entitled “Problems of Solid Waste Management in Indian Cities” attempt to analyze the problems faced by Indian cities in the matter of solid waste. Management of solid waste is the obligatory function of urban local bodies, but in reality they have given last priority for this because of lack of financial resources, inefficient management, inappropriate technology, weak legislative measures and unawareness among the public make this service inefficient and unsatisfactory. The study recommended that to educate the people about the waste management, segregation of bio degradable and non-degradable waste, separate community bins are made available for dry and wet waste.

Bhargava, M. & Kumar, N.,(2014) in their study divide their paper in to two parts, one part says about the pathetic working condition of Indian scavengers who are manually removing the night soil from dry latrine, septic tank and cleaning the sewers and manhole. Society treats them as untouchable. Second part of the paper emphasis on the mechanization of all these works. They point out that with the use of simple electro chemical segment which work as a mechanized gadget and clean the sewer vents and septic tanks without manual application. With the use of

Archimedes Screw working principle they demonstrate us how we can simply mechanize this dirty job.

Baruah, A., (2014) in his paper proposed the constitutional commitment and measures taken by the successive governments to improve the working conditions of scavengers in India. It is stated that peoples engaged in the job of scavenging, mending of shoes, hair cutting and so on are treated as untouchable because of their unclean profession. By the middle of 19th century different efforts were taken to improve the level of this class of community but this didn't happened. This matter was taken up seriously by philanthropist and social reformers. Constitutional framers institute a wide range of minority rights in the form of article 14,15,16,25,26,29,341 and 342 of the constitution. 2013 Act bears stricter provision to abolish manual scavenging completely from the society. The study point out that law itself cannot do anything; the attitude of the society should be changed for that improving the awareness among the people is the only way

Sainath, C., & Ahmed, K. M., (2014) published a research paper in the Indian Journal of Basic and Applied Medical Research , sheds light on the critical occupational health risks faced by sewage and sanitary workers. The study dives into the different risks connected to this line of work, highlighting how destructive they are to the health of the workers. It talks about common risks which include pathogen exposure, physical injury, and exposure to toxic substances. This study promotes legislative changes and better working conditions to reduce occupational dangers and improve the general health and safety of these essential labourers by recognising the unique problems faced by sewage and sanitary workers

Gandhi, N., (2014) the author critically examine the Indian society in the matter of caste discrimination especially faced by sanitation community. She has an intention to go through the living condition and educational status of sanitation workers. Workers from the Dhalit caste are engaged in unclean occupation were considered as polluted persons and they are treated as untouchable. In Ahamadabad Municipal Corporation majority of sanitation workers are from Valmiki families, one of the oppressed caste in India are doing the job of cleaning sewage drains and

manually removing the human excreta besides sweeping the road. The study reveals that workers have only primary education and they are not aware about the importance of education especially education of girl child. Struggle by the Dalith community should continue until they get equal right, equal opportunity and a dignified life

Karthikeyan, P., et al., (2014) focused on the ‘untold miseries of manual scavengers’ especially women scavengers in India, where an estimate of 1.2 million are involved in sanitation work, among them majority are from marginalized community especially Dhalits and women. Income generation alone does not improve the socio economic status of this section of the society. Education of women make a drastic change in the living style of women in India, now a day’s woman is doing almost all jobs a man can do.

Joy, K. J. et al., (2014) edited a book entitled "Conflicts around Domestic Water and Sanitation in India: Cases, Issues, and Prospects," provides a comprehensive analysis of water and sanitation conflicts in India. It emphasizes how critical it is to find comprehensive solutions to India's water and sanitation problems in order to advance social justice, economic growth, and environmental sustainability

Pathak, B.(2015) argued that manual scavengers are treated as untouchable and such untouchability create social discrimination among Hindus leading to conversion of faith to another religion. Changing religion did not make any major difference in their social or work status. The practice of manual scavenging in India goes against the Universal Declaration of Human Rights adopted by the UN in 1948, which states that all people have equal dignity and rights. The author suggested a simple and low-cost solution called the two-pit pour-flush toilet, also known as Sulabh Shauchalaya, to replace the unhygienic manual scavenging system. This technology was approved by government of India, WHO, UNICEF, World Bank, UNDP etc

Rangamani, S et al., (2015) focus light on the workplace dangers and health issues the sanitation workers face. By instructing local volunteers to gather health-

related information from sanitation workers, the researchers carried out a study on lay health monitoring. The study identified a number of serious health issues among sanitation workers like musculoskeletal issues were widespread, with a significant number of workers experiencing back discomfort, joint pain, and muscular cramping. Cough, shortness of breath, and allergies were also prevalent among the workers' respiratory complaints.

Rayen, L. P & Nisee, T. J,(2016) argued that the term ‘scavengers’ was replaced in the government documents as sanitation workers from 1995 onwards. In the study author reported that working environments of sanitation workers of Thirunelveli Corporation are dirty, cold, heat, wind and rain for a long term. People are not bothered about the condition and treat them as ‘second class citizen’. Majority of the workers are illiterate women and they belong to SC category followed by ST category. The study reveals that the main reason for opting this job is lack of education among the workers; they think that because of the absence of education they cannot get any other job to look after their family.

Bharti, O. K. et al., (2016) made an attempt to know about work practice, injuries, illness, working conditions and work hazards in the course of discharging the sanitation work by Shimla Municipal Sanitation workers. The other reason is Alcoholic hepatitis, accidents, brain hemorrhage due to high blood pressure, kidney failure and cancer. Study also says that the possibility for communicable disease is high among sanitation workers, shifting of communicable disease to non-communicable disease is a common phenomenon now a days and suggested that compulsory and regular health checkup has to be made among the workers

D’Souza, Paul, (2016) “Clean India, Unclean Indians Beyond the Bhim Yatra” is a paper by Paul D’souza , the author reports national wide protest conducted by safai karmacharis in the name of Bhim Yathra. Safai karmachari Andolan made a country wide travelling which cover 500 districts in 30 states having a slogan “stop killing us”. A large number of workers who are working in dry latrine, sewers and septic tank workers in dangerous situation in their work

place, result to death. The study suggested that manual work would be replaced by machines.

Sabale, S. D.(2017) conducted a study with the objective to explore the increasing plight of caste based sanitation job in Pune city. He also focused on the caste analysis of such workers in use of mechanization in the dirty job of scavenging, contractualisation of work and occupational health and safety measures. The study found that majority of the workers belong to Dalits and are hereditarily forced to do the contractual job of scavenging in order to secure job security and to get rid of inevitable exclusion. The study revealed that instead of using labour intensive technology for the manual scavenging liberation of such workers from their dirty job by rehabilitating from the rigid social and occupational stigma that is why the traditional scavengers in Pune city are shifted from formal safai employment with a long term unemployment and social exclusion.

Priya, A. & Sharma, S.(2017) point out that VALMIKI who are considered lower caste category in India are still doing the work of manual scavenging at UP, MP, Gujarat, Bihar, Rajasthan, Jammu Kashmir and Uttarakhand. Social exclusion of Dalits, Adivasies, women and minorities from the main stream of job sector, they are still treated as untouchable. Even among the educated society they think it is the duty of someone to clean the dirty places and public toilets. Swach Bharath Mission, the prestigious mission of the Government completely ignores the role of Safai Karmacharies and their family. The study states that the budget allocation for the mission has more than 900 crores but there is no initiation towards mechanization of sewage system and wash rooms in India.

Sheerin & Pavithra (2017) in their study evaluated areas like occupational hazards, saving habits and health and psychological problems. 63% of workers are not interested in their job as they are selected for this job on the basis of their caste. Sexual harassment, negative attitude of higher authorities, discrimination in the society, high consumption of alcohol and health issues like gastrointestinal diseases, orthopedic, skin related issues, asthma are the major problems put forward by the researcher. To improve the quality of life of sanitation workers author has suggested

regular health check-up, prevention of manual scavenging and creating awareness about government schemes.

Bagchi, D., & Mitra, I. K.(2017) in their study on the survival of migrant sanitation labours both in formal and informal sectors of solid waste management industry in contemporary Kolkatha. The paper categorized formally appointed municipal workers and self-employed waste pickers as bio political labours. There always exists a gap between these two categories, legislations formed for eradication of manual scavenging have a positive effect on the formal workers but this increase the pressure of doing such job on the other categories. So no legislations help to save the waste pickers from the risk of bio hazards or accident of work.

Ghosh, J.(2017) made an attempt to know about the pathetic working condition of Indian sanitation workers. The researcher uses secondary source of data to prove his arguments. Manual scavenging is more dangerous task forced to be done by the marginalized and oppressed Dalit community, some of the independent survey states that at least 1370 death per year is occurred in this job every year. As per 2011 Census there are 180657 manual scavengers in the country. Author says that the actual statistics may be more than six times the number. More manual scavengers are working not in private sector but in public sector- Indian Railway is the largest employer of manual scavengers in the form of sweepers as the majority of the trains are using open toilets that dump the faeces on to railway track.

Salve, P. S et al.(2017) Critically examines the reasons that keep the generation of safai karmacharis in the same occupation, reasons are caste system, addiction to tobacco chewing, smoking, alcohol etc, health problem, indebtedness, government policy, attitude of workers towards themselves and their job. Authors put forward certain recommendation to break this vicious cycle and free the future generation of Safai Karmacharies from this dirty job. The author recommended for putting an end to caste based recruitment and promote recruitment through government policy, focus on education and development of their grandchildren, promote financial literacy, provide after retirement medical benefits, reduce the

number of years' service to claim housing and increase the accountability of labour unions.

Masuki, Y. (2018) in his article “Historical Development of Low-Cost Flush Toilets in India: Gandhi, Gandhians, and “Liberation of Scavengers” studied the historical developments in liberation of manual scavengers by the act of Ghandi and their coworkers called Ghandians. The author is of the opinion that in order to eliminate the discrimination against scavengers among the minds of upper caste can be removed by creating a sense of dignity of labour of scavenging and latrine cleaning, also states that untouchability mind was not only among upper caste but also with sanitation; it can be eliminated by improving their working condition and use of scientific method rather than changing the whole system of toilet from dry latrine to flush one.

Kumar, M. A. (2018) in his study classify scavengers in to two groups, that are a scavenger who is working under a municipality is called Safai Karmachari(employees) and those who are working in the private home is called Safai Kamgar(worker). Among the Dalit community Balmiki is treated as the scavenging community and they are highly marginalized. Even among the scheduled caste other castes are systematically excluded them and treated them as alcoholic, gambler, sweeper and manual scavengers. Author concluded that after 70 years of independence still the women from this community are marginalized both in private and public places because of stigma attached with their occupation.

Prasad, C. S. & Ray, I. (2019) in their research paper named “When the pits fill up: (in) visible flows of waste in urban India” attempt to explain after effect of Swachh Barath Mission in urban India. The author explained that mission working with the aim of open defecation free nation, in rural area house hold toilet construction are going on but in urban area constructions where already completed they are facing the problem of emptying the toilet pits and transport of waste. These activities are invisible in the national faecal sludge and waste management policies. It was concluded that showing the pit-to-ditch service process and its practices

clearly to both national policymakers and local authorities is necessary to achieve a clean India.

Kadlak, H. et al. (2019) discuss about the problem of women sanitation workers which were not much discussed in academic area. These working women are directed by two authorities one from family that forced to do all kind of dirty jobs and other from social authority such as caste and socio cultural norms that forced to do certain kind of work without question. The paper further contributed with a recommendation that it is essential to create a bridge between workers and academicians who helps for the formation of policy and welfare programs for these employees.

Menezes, G. O., (2019) focused that manual scavenging is a harmful issue which effect on multi-level due to the interconnectivity of the cause and damages which created on the civilized society. We cannot eradicate this practice by a single legislation; the job is a health hazard for the workers and their coming generation even after they left the job both psychologically and physically. Author blamed both politicians and bureaucracy for their role for not enforcing the law for eradication of this practice.

Ansari, A. M et al., (2019) published a paper titled “Tobacco abuse and dental problems among sanitation workers of Allahabad city: a cross sectional study” in International Journal of Community Medicine and Public Health says that sanitary workers have different names like health labourers, manual scavengers, garbage man, trash man etc who are engaged in cleaning, waste carrying, drainage and toilet cleaning in cities. The result of the study shows that the dental problems among the smokers and tobacco chewers are higher than those who are not using it. Missed teeth also show higher among users. Among non-users young generation account for higher proportion but the proportion of non-abusers decrease with increase in age.

Kannolath, R. B., (2019) in his study explain health issue of sanitation workers in India. For the purpose of the study researcher classified workers in to two categories manual scavengers and safai karmacharies. Major health issues among

sewage cleaners are work related symptomatic morbidities mainly of eye, respiratory, musculoskeletal system and skin. Common diseases among the workers are musculoskeletal disorder, problems related with harmful gas, respiratory problem and dermatological problem. The study also recommended that country need to frame some tremendous policy change for upliftment of sanitation workers not mere political drama for the media.

Salve, P. S & Jungari, S., (2020) published an article “Sanitation workers at the frontline: work and vulnerability in response to COVID-19” they enquire about the role of sanitation workers in the battle against the COVID 19 pandemic where work of sanitation workers are considered dangerous, the death rate of sanitation worker (9 per 1000 population) is higher than death rate of general population (7 per 1000 population). Most of the Indian sanitation workers are contractual workers they are under paid (around 250-300 per day in case of male, 150-200 per day in case of women). From the lesson of corona experience we have to implement powerful and sustainable sanitation facilities in big cities. This will be possible only after giving fair wages, proper medical facilities, proper safety equipment, respect and security of employment to sanitation workers.

Chugh, A et al., (2020) the paper focused on the marginalization of sanitation workers amidst Covid 19. The study identified that manual scavengers in India are in the shadow of caste and dehumanizing. Inabilities of the government to implement the law, absence of permanent employment or decent wages are the reason behind the marginalization of this category of workers. Covid 19 made the situation more vulnerable as they face the challenges of freedom, restoration and rehabilitation- liberation from their heredity job. The paper concludes by supporting the ideals of Article 38 of the Constitution, which aims to promote social, economic, and political justice for the welfare and development of manual scavengers.

Lenka, A. K., (2020) reports the health issues, identity problems and livelihood status of sanitation workers in Bhuvaneswar one of the city of Odisha. There are 3000 sanitation workers working under the municipal corporation both under public and private sector. 232 samples were collected under purposive

sampling method for this study. The study point out that social identity of 94% of the workers are SC/ST, also pointed that majority are migrated from villages and are living in Kucha houses having no toilet facilities and using public water supply facilities, around 90% workers are getting 2000-5000 monthly remuneration which is not sufficient to live in a city. Study concludes by stating that government should provide basic facilities like house, electricity, pure water and proper sanitation facilities to sanitation workers.

Shanker, G & Bagdi, H., (2021) attempt to specify violation of human rights against sanitation workers. Authors given certain recommendations like authority should invest in modern machinery to save the poor workers lives, use of bio-toilets in Indian Railway, strict implementation of law for prohibiting manual scavenging, enrolling new generation of such workers in to skill development courses and NGOs and SHGs should fund small enterprises where banks are not providing financial assistance.

Ghosh, L., (2021) discovered threat faced by sanitation worker is about handling of medical waste during COVID 19; he critically examines the bio-medical waste management rule of 2016. Sanitation workers have to manage the waste like used face mask, gloves and medical kits that increases the intensity of risk. It was identified that doctors, nurses and other health staffs while treating the patients had the knowledge and institutional support about the precautions to be taken, but sanitation workers have only a mask for their safety. Central pollution control board suggests yellow, red, blue and white colored bin has to be used in quarantine places for placing different wastes. But in reality it is not practice, it create a serious reason for spread of virus among sanitation workers.

Vyas, M. & Jha, M. K., (2021) argued that poor sanitation is the primary source for the outbreak of any communicable diseases among the public. Due to the neo liberation that keeps the job of sanitation worker contractual that bears the burden of fighting against the pandemic at the risk of their health. Controls are exercised by the Mumbai authorities over the migrants as resident and as labour through policy making, waste management, geographical zone and workers. The

study clearly indicates that pandemic taught the authority the need for segregation and segmentation of Mumbai city area and control of worker and labour force. In order to fight against this pandemic basic issues faced by sanitation workers and their working conditions should be addressed.

Mo, T. S. & Nalini, R., (2021) analyzed the complex intersectional relationship between marginalization and mental health; they put forward a conceptual model which specifies the relationship between marginalization and mental health. The caste, class, migration, education, occupation and gender are intersecting identities and they have strong influence on social positioning. All the above factors lead towards marginalization and this marginalization have a negative relationship with the mental health of women sanitation workers. Mental health care interventions are based on an intersectional social justice framework that helps guide public policy and social work to address the specific healthcare needs and rights of marginalized groups.

Koonan, S., (2021) discussed about the legal disclosures of manual scavenging in India from pre- colonial to the present. He point out the reason for the emergence of scavenging caste, also points that Muslim rules in India forced the people to do manual scavenging because the practice of Burqa among the Muslim women and the need for bucket privies led to the emergence of manual scavengers in the country. Before independence the rules are almost created by the upper caste of the community so they need a class for cleaning their dry latrine, no much legal enactments had taken place during that period. Social movements led by some of the marginalized communities and the Supreme Court judgment related with case of Safai Karmachari Andolon became the back born for the formation of certain laws in the country.

Gautam, M. et al., (2021) presented a frame work with the goal of enhancing the security and wellbeing of these de-sludging operators. To comprehend the current issues and prospective remedies, the researchers carried out a thorough examination in two Indian cities, they identified a number of elements that contributed significantly to the hazardous working circumstances, including the

usage of antiquated equipment, a lack of personal protective equipment, inadequate training, and insufficient governmental restrictions. The framework encompasses various aspects, including the introduction of modern equipment, implementation of safety guidelines, and providing training and education to the operators. Additionally, the authors emphasize the importance of creating awareness among the public regarding the risks associated with de-sludging operations.

Monteiro, T. S & Nalini, R., (2021) highlights the unique position of women sanitation workers who exist at the intersections of multiple marginalizations, such as gender, caste, and occupation. These factors expose them to a range of stressors, discrimination, and adverse working conditions, which significantly impact their mental well-being. The article put forward a comprehensive conceptual model to explore the intricacies of mental health concerns within this vulnerable population, the model accounts for the elements that affect the mental health of female sanitation workers on an individual, interpersonal, and systemic level. The study emphasizes how crucial it is to understand institutional policies, cultural practices, and societal norms shape people's experiences and mental health outcomes. The purpose of the paper is to argue for specialized remedies and draw attention to the particular difficulties experienced by female sanitation employees. In order to lessen the negative impacts of marginalization on these employees' psychological wellbeing, the authors emphasize the importance of implementing gender-sensitive policies, giving access to mental health treatments for empowering these workers.

Saldanha, S et al., (2022) the paper assesses the impact of various enactments and reforms on the life of Safai Karmacharies and their family. Women are doing around 95% of manual scavenging in India and entrusted with the responsibility of cleaning human excreta from dry latrines from centuries. The socio cultural history of scavenging in India roughly around 95% of scavenging workers belongs to Scheduled Caste. The resistance on the part of these workers met with punitive legislations like Municipal Act 1900 in Haridwar, which says that hereditary sweepers could be fined for neglecting to clean private residence,

Municipal Servant Act 1890 by the Bombay Municipality prevented workers within the presidency from leaving their work without two months' notice, punishable by imprisonment, fine or both. After independence in 1960 All India Safai Mazdoor (Cleaning workers) congress and its various political affiliations launched campaign for renewed actions. The article looks back 120 years of attempt to regulate manual scavenging in India reveals that caste based discrimination and dangerous labour conditions are still exist.

Kaur, S., (2022) explores the profound issue of social exclusion experienced by sanitation workers in the urban context, specifically focusing on those belonging to the Rukhi and Balmiki communities in Mumbai. They are facing multifaceted challenges like limited opportunity for education, housing, health care and trapped in poverty perpetuated by their occupation and societal biases, and how caste based prejudices affects upon the socio economic status and social mobility. Author emphasizes the urgent need for inclusive policies and actions to alleviate the persistent social marginalization that Rukhi and Balmiki sanitation workers confront by shedding light on their experiences and a call to action for policymakers and activists to work towards a more equitable and inclusive society where sanitation workers can live with dignity and access the opportunities they deserve. It also adds to our understanding of identity-induced marginalization

Mane Sushant Vitthal, (2022) discovers that sanitation workers have experienced a number of issues with their socioeconomic standing and physical health, but there is no correlation between their demographics and the issues they confront. The sanitation employees at Kolhapur Municipal Corporation have access to a variety of welfare programmes, but after measuring their level of knowledge, it was discovered that neither they nor the various financial institutions that support them are aware of these programmes. It helps the employees to know about their actual financial welfare and social status and concluded with the urge for developing and implementing policies to help the workers in order to overcome their vulnerability associated with their job.

Masuki, Y., (2022) tries to explain the struggle faced by Indian sanitation workers in early 20th century. In the study author specifies how humanitarian intervention was made through ideological and practical approach to address the problems of sanitation workers and uses the different views of Gandhi and Abedkar, former highlighted the value of scavenging work by paying attention to its moral and hygienic aspects whereas latter questions the structural inequality in the division of labour. Dhalits let movements against manual scavenging forced the governments to take legal frame work for abolishing of manual scavenging. Author concluded that it is not a good thing to the modern scientific and democratic Indian society to think about manual scavenging and untouchability of scavengers.

Wankhede A. ., (2025) attempt to focus the reason for the failure of enactments for the prohibition of manual scavenging and untouchability of Dalit. Safai Karmachari Andolan an social welfare association mostly work for elimination of untouchability by mass mobilization of Dalits and leading both nonviolent movement and legal actions for protecting their rights. In 2003 they approach Supreme Court after realizing the ineffectiveness and non-implementation of legal provisions for protecting the interest of manual scavengers. Supreme Court in different cases strongly opposed both the central and state governments for non-implementation of court judgments and legal provisions which already exit for protecting the interest of the oppressed community. Author identified that there are two reasons for the failure of judicial activism in ending manual scavenging- One limitation of rights-based discussions is that they cannot effectively address ongoing human rights violations when society lacks a supportive socio-cultural system to follow these norms. The second is conditional prohibition of manual scavenging in 2013 Act maintain the status go of discrimination, stigma, prejudice, humiliation for Dalit employed in manual scavenging.(Wankhede A. ., 2025)

2.1.5 Review on quality of work life and sanitation workers

Earlier part of this chapter discuss about the quality of work life and sanitation workers in the global and Indian context. Now it is indeed to discuss

about the studies which focus on the QWL of sanitation workers. The following studies describe about the present literature.

Tiwari (2008) discuss about the job related health issues of sewage and sanitation workers, study point out that frequent exposure to toxic gases, musculoskeletal problems and infections are the major health issues faced by sanitation workers. Study shows the strong evidence of linking between working environment and health outcomes.

Gurjar, R. S., & Mendiratta, S. (2013) in their study they provide evidence of systematic neglect of workers wellbeing. Poor wages, absence of safety practices and inadequate welfare measures are the major findings in their study about the socio-economic conditions and health risk of sanitation workers in Urban India.

Singh, A., & Chaturvedi, S. (2015) argued that work place stressors faced by municipal solid waste workers will reduce their quality of life. The study covers the workers from north India; they are facing high level of stress, musculoskeletal complaints, and poor access to medical care.

Vijayalakshmi, D. (2016) contributed social and psychological dimension to quality of work life studies through her study about job satisfaction and social recognition of sanitation workers in Tamil Nadu. The study result reveals that social stigma and lack of dignity at work are the factors which reduce overall job satisfaction of sanitation workers.

Jadhav, P. R., & Chavan, R. B. (2017) argued that occupational hazards faced by sewage workers in major Indian cities affecting on their quality of their life. The study reported that respiratory issues, occupational injuries and lack of personal protective gears are the major problems faced by workers.

Patil, V. K., & Kulkarni, R. S. (2018) connect environmental and economic factors of sanitation workers with their quality of life. The study covers the living and working conditions of sanitation workers in Western India, showing relationship between poor infrastructure, low income, and lowered life satisfaction.

Kumar, P., & Saini, S. (2019) point out the psychological aspect of quality of work life of sanitation workers, employees with higher psychological wellbeing and greater social support tends to report better QWL. A better mental health and strong support system is essential for enhanced job satisfaction and work life outcome for sanitation workers.

Sheikh, A., & Sharma, H. (2020) attempted a study the waste collectors' quality of life in Indian metropolitan cities; the author reported that the major challenges faced by the workers are health issues, absence of social protection and limited possibility of upward mobility.

Thangadurai, T., & Gomathi, N (2020) in their study on the quality of work life of scavengers in Tamilnadu and found that unsafe working condition, low income, health hazards, and social stigma severely affect their quality of work life. It also point out that lack of awareness about legal rights and rehabilitation schemes further worsens their situation. The study highlights the gap between legal provisions and actual implementation, emphasizing the need for rehabilitation and awareness programs.

A study by **Madhumithra et al. (2021)** examines the QWL and its key determinants among the sewage workers in Puthucheri using a cross sectional research design. The result of the study reveals that poor QWL experienced by many workers due to the factors such as hazards working condition, low income, lack of safety measures and limited access to health services. They identified low education, job insecurity, and poor health statuses are major determinants of QWL.

Fatmi, S. I. A. et al.,(2022) examines the health related quality of life among sewage and sanitary workers in Karachi, Pakistan. The study highlighted the physical and mental health challenges faced by these workers due to the unhygienic and hazards working condition. Finding of the study indicates that low income, lack of personal protective equipment and limited access to health services are the major factor which reduce their quality of life. The article emphasizes the need for better work place safety, better health services and policy interventions are needed to protect and enhance the wellbeing of workers.

E Balasubramanian, T. & Janarthanan Pillai, M.(2024) examines the quality of work life of cleanliness workers in Tamilnadu, which highlighted the issues such as low wages, insecurity of job, health risk and absence of social recognitions which are the significant factors which effect the QWL of cleanliness workers. The paper point out the importance of providing better safety measures, fare compensation and welfare benefits to improve the wellbeing of sanitation workers.

Sulochana, S. & VP, K.,(2024) focused on the relationship between job satisfaction and work life balance among women sanitation workers in Coimbatore. It also examine how factors like low wages, long working hours and absence of social recognition influence their job satisfaction. Poor job satisfaction of workers negatively effects on women workers to balance their work responsibility with their family responsibility. An inclusive work place policy and supportive measures are required enhance the job satisfaction and work life balance of women sanitation workers.

Robert, S. & Muthulakshmi, D. A.,(2025) attempted a study on sanitation workers in Varkala municipality of Kerala, highlights that respiratory problems and musculoskeletal issues are the major health risk faced by sanitation workers and they also face psychological stress in their work. The study also found that inadequate safety measures, access to health care and social sigma tied to their profession are the major problems faced by these workers.

2.2 Research Gap

In an area of research, a gap is something that remains to be done or learned. The researcher goes through various studies relating to the quality of work life of sanitation workers done by the academicians and scholars of different parts of the world. Sanitation workers are an inevitable part in the society for maintaining public health and hygiene. Review of literature revealed that several studies and reports about sanitation workers especially about the marginalization and discrimination exhibited by the different society of the world towards them was reported by different researchers both at national and international level. A close watch of the

review of literature revealed that there are certain studies which cover quality of work life and its dimensions on sanitation workers, but a comprehensive study on the quality of work life of sanitation workers in Kerala is untapped. In Kerala a detailed study with respect to the quality of work life of sanitation workers, work life challenges particularly during different calamities, perception of sanitation workers regarding quality of work life and job satisfaction of sanitation workers are totally uncovered and untapped one. So considering the massive importance of quality of work life and to fill the gap, the present study is an attempt.

2.3 Conclusion

This chapter gives a detailed review of earlier studies by different researchers on the quality of work life and sanitation workers. The total studies are divided in to four areas like quality of work life in the global scenario, Indian scenario, sanitation work in the global scenario and sanitation job in Indian scenario. This chapter helps to find out various variables used for the present study, which is an aim to fulfill existing research void in the present literature by investigating about the factors affecting quality of work life of sanitation workers in Kerala

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Chapter 3
Quality of work life and sanitation work -
A theoretical over view

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3.1 Introduction

This chapter delves in to the theoretical frame work for evaluating quality of work life of sanitation work force in Kerala. Theoretical grounding serves as the backbone of any scholarly research by offering a coherent framework to interpret, explain, and analyze the research problem. It guides the formulation of research questions, the design of methodology, and the interpretation of findings(Grant, C & Osanloo, A., 2014). A strong theoretical foundation ensures that the research is not merely descriptive but also analytical, allowing for the identification of patterns, causes, and consequences related to the working conditions of sanitation workers. It provides a lens to critically examine how structural factors: such as caste, class, labour policies, and societal attitudes-influence the quality of work life outcomes(Anfara, V. A & Mertz, N. T., 2014). Here it begins with the conceptual foundation of QWL and followed by the evolution of this concept, it also covers the socio-occupational realities of sanitation workers.

Human resources are the most valuable asset in any organization. Every individual in the organization are identical and are having difference of interest complaining all these difference of mind towards a common objective.

The effective management of this divergent human resource is the prime factor behind the success of every organization, through proper motivation management can create a good morale of the employees that should be channelized towards the ultimate goal of the organization. When it comes to discriminatory grounds, colour is typically associated with their race. The colour draws attention to particular inequalities and marginalization that are not addressed by the basis of race, colour and should play a distinct role in human rights and equality disputes(Sealy-Harrington,j & Watson Hamilton, J. O, 2018).

3.2 Quality of work life

The concept of QWL gained its importance among industrialist and researchers because of multifaceted factors that promote employee well fare, job satisfaction, work life balance and better performance of employees. QWL refers to the degree to which individuals are able to satisfy important personal needs through

their experiences in the workplace(Nanjundeswaraswamy, T. S. & Swamy, D. R., 2013a). It encompasses aspects such as job security, work environment, compensation, work-life balance, and employee participation in decision-making(Walton, R. E., 1973). This concept has been widely used in formal and informal working group, its application in the field of marginalized working group especially sanitation workers remain unexplored.

3.2.1 Evolution of quality of work life

The conceptual metamorphosis of quality of work life has been a protracted and multifaceted process, spanning decades with its purview expanding from narrow focus on job satisfaction to more expensive emphasis on holistic employee well-being and work life equilibrium. The evolution of the concept of quality of work life from over decades, which adopting to make changes in work place, social expectation and technological advancements. Quality of work life's early origin can be found in the human relations movement of the 1930s, which was led by research like the Hawthorne experiments that demonstrated how crucial worker well-being impacts productivity (Roethlisberger, F. J & Dickson, W. J., 1939) By the 1970s, QWL expanded beyond simple working conditions to include broader elements such as job design, employee participation, and organizational culture (Davis, L. E. & Cherns, A. B., 1975). The concept of Quality of Work Life (QWL) has evolved significantly over time, reflecting changes in workplace dynamics, societal expectations, and organizational priorities. Initially emerging during the 1960s and 1970s, QWL focused on improving work environments to enhance employee satisfaction and productivity (Nanjundeswaraswamy, T. S. & Swamy, D. R., 2013). In the 1980s and 1990s, globalization and technological advances shifted the focus of QWL toward balancing work and personal life, emphasizing flexibility and employee empowerment(Sirgy, M. J, Efraty, D, et al., 2001). Present definition of QWL consists of psychological well-being, equal pay for equal job, job security, opportunities for growth, reflecting a holistic approach to employee satisfaction and organizational effectiveness. In recent decades, the focus has shifted toward a more holistic understanding, encompassing emotional well-being, organizational culture,

and psychological empowerment, especially in response to globalization, technological change, and the changing nature of work (Koonmee, K et al., 2010). QWL is now treated as an important element of long-term human resource management. Organization that put a high priority on QWL results increased productivity, lower employee conflict, and more employee engagement. More over the concept supports the more general objectives of ethical governance and corporate social responsibility, highlighting its applicability in modern management techniques.

3.2.2 Definition of Quality of work life

Walton (1973) defined Quality of Work Life as "the degree to which employees are able to satisfy important personal needs through their experiences in the organization" and emphasized that work should contribute not only to material needs but also to personal growth and human dignity (Walton, R. E., 1973)

Davis and Cherns (1975) stated that QWL is "the quality of the relationship between employees and the total working environment, which influences the degree of their satisfaction and well-being" (Davis, L. E. & Cherns, A. B., 1975)

Rethinam and Ismail (2008) defined QWL as "the degree to which employees enjoy their work, are treated with respect and dignity, have opportunities for growth, and maintain a balance between work and personal commitments" (Rethinam, G. S. & Ismail, M., 2008b)

Nanjundeswaraswamy and Swamy (2013) described QWL as "a multidimensional construct, encompassing job satisfaction, work environment, fair compensation, opportunities for growth, and a balance between work and personal life"(Nanjundeswaraswamy, T. S. & Swamy, D. R., 2013a)

Islam et al. (2020) "An umbrella concept encompassing employees' job satisfaction, work conditions, career growth opportunities, and the balance between work and personal life"(Islam, T. et al., 2020)

Mohan and Ashok (2021) “The degree to which employees are able to satisfy their important personal needs through their experiences in the organization, including psychological well-being, job security, and work-life balance”(Mohan, R & Ashok, J., 2021)

Yadav and Rani (2022) “A multidimensional construct that reflects an individual’s work-related well-being and the extent to which the work environment meets their physical, psychological, and social needs”(Yadav, R. & Rani, A., 2022)

3.2.3 QWL models/frameworks

Different researchers and practitioners developed different models or frame work for QWL, each emphasizing on different dimensions of employee satisfaction, well-being and organizational effectiveness.

3.2.3.1 Walton’s model (1973): Richard Walton in 1973 proposes a comprehensive frame work for describing the factors affecting the QWL experienced by employees in an organization. He put forward eight criteria for measuring QWL, they are adequate and fair compensation, Safe and healthy working condition, Immediate Opportunity to Use and Develop Human Capacities, Opportunity for Continued Growth and Security, Social Integration in the Work Organization, Constitutionalism in the Work Organization, Work and Total Life Space and Social Relevance of Work Life(Walton, R. E., 1973). Walton model shifted the focus from simple job satisfaction to a holistic view of work life, it encourage HR practices that promote human value and this approach is still use as a basis for many QWL and HRD practices across the world.

3.2.3.2 Davis and Cherna’s Socio-Technical Systems Model (1975)

Socio-Technical System model was developed by E.L. Trist, Fred Emery, and later expanded by Davis and Cherna. They emphasized the need to optimize both social and technical aspect of working environment to improve organizational performance and employee well-being. They developed certain principles for STS model- the design of social and technical system neither should dominate but should support each other for maximum efficiency (Compatibility), only essential aspects

should be specified by the designers (Minimal Critical Specification), variance should be controlled where they occurred (Variance Control), for ensuring smooth coordination decision should be made at boundaries (Boundary Location), information should be flow smoothly to those who need (Information Flow), design of work should encourage skill variety, autonomy and task significance (Multi-Skilling and Enriched Jobs), support system will encourage desired behaviour with in the socio-technical design (Support Congruence), design is not static it may subject to change (Design as a Continuous Process) and it lead to higher satisfaction and innovation (Importance and Applications). STS model create a balance between technical efficiency and social well-being. (Davis, L. E. & DCherns, A. B., 1975)

3.2.3.3 Hackman and Oldham's Job Characteristics Model (1976)

How certain job features influence employee motivation, satisfaction, and performance was explained by Hackman and Oldham with their JCM model in 1976. They developed five core job characteristics, through these job of an employee can be designed which will intrinsically motivate employees. They are Skill variety, Task identity, Task Significance, Autonomy and Feedback (Hackman, J. R., & Oldham, G. R, 1976). The five job characteristics mentioned above influence three psychological states. The first three contribute to a sense of meaningfulness in work, autonomy leads to a feeling of responsibility for outcomes, and feedback provides knowledge about the results. From the above psychological states model predict several positive outcomes like high internal motivation, work performance, job satisfaction, low absenteeism and labour turn over.

3.2.3.4 Taylor's QWL Framework (1979)

It is a comprehensive structured approach to understand overall experience of employee in his work place. He point out eight core component that contribute to a high QWL, which include fair and adequate compensation, safe and healthy working conditions, opportunity to use and develop human capacities, growth potentials, social integration in the working environment, constitutionalism, work and total life space and the social relevance of work. All these factors emphasizes on physical and psychological aspect of work which highlights need for fairness, social

connection and personal development. His model has an influential in promoting a balanced, humanistic approach to organizational design and employee well-being.(Taylor, J. C., 1979)

3.2.3.5 Nadler and Lawler's Model (1983)

This model focus on how different aspects of work effected employee motivation, satisfaction and job performance. For improving the QWL management should create a multiple dimension of the work system and employee needs and organizational effectiveness must be balanced. The model has nine elements-adequate and fair compensation, safe and healthy working environment, development of human capacities, growth and security, social integration in work organization, constitutionalism in work organization, work life balance, total life space and social relevance of work.(Nadler, D. A. & Lawler, E. E., 1983)

3.2.3.6 Mirvis and Lawler's QWL Approach (1984)

The model gives more importance to work environment that not only improve productivity but also help for employee satisfaction and well-being. They key factors put forward by these model for QWL include meaningful work, fair compensation, opportunity for growth and supportive interpersonal relationship. Model suggest that employee should be participated in decision making that will help the employees to know that how their work is structured and managed, it will create greater job satisfaction and commitments. Model recognizes the need for the balance between the individual goals and organizational goals.(Mirvis, P. H. & M Lawler, E. E., 1984)

3.2.3.7 Srivastava's Indian QWL Model (1984)

Dr. A.K. Srivastava developed the Indian QWL Model which concentrates on the unique socio-cultural and organizational context of India. Improved wages and better working condition is not only the factors which improve QWL of workers but also the factors like psychological and social aspects that contribute to the employee well-being. He identified several factors that affect the QWL of employees in Indian organizations, they are- job and career satisfaction, work

environment, organizational climate, motivational aspects, work life balance, social integration in work place and Constitutionalism in the Work Organization. This model focuses on the need for a balanced approach that consists of physical, emotional, social and organizational well-being of the employees.(Srivastava, A. K., 1984)

3.2.3.8 Rao's Integrated QWL Model (1992)

This model exhibits a holistic and developmental approach to QWL which align individual needs, organizational goals and societal expectation. This model promotes a win- win approach that connects personal growth of employees to organizational effectiveness. The key elements of the model are individual needs and growth, organizational culture and practice, work environment, social integration and team work and social interface. Why this model is called 'integrated'? Because it bring together individual, organizational and societal prospective on QWL. Higher QWL in an organization not only increase productivity but also lead to overall development of employees and society. (Rao, T. V., 1992)

3.2.3.9 Saylor's Nursing QWL Model (1992)

This frame work developed for measuring the QWL among nurses, their job satisfaction and well-being are not only for them but also for quality of patient's services. He identified seven factors influencing the QWL of nurses; they are work life balance, work design, work context, work world, institutional characteristics, client services and professional relationship. For improving the QWL of nurse's individual level intervention and institutional level interventions are required. (Saylor, C., 1992)

3.2.3.10 Sirgy et al.'s QWL Model (2001)

This model integrated need satisfaction theory and spillover theory to explain the concept of QWL. As per this model the key domains are health and safety needs, economic and family needs, social needs, esteem needs, actualization needs, knowledge needs and aesthetic needs.(Sirgy, M. J, Efraty, D., et al., 2001)

3.2.3.11 European Foundation for the Improvement of Living and Working Conditions (Eurofound, 2002)

In 1975 European Union Agency was established which contribute to the planning and design of better living and working condition in Europe. In 2002 Eurofound focused its research about labour market and social conditions in Europe, put forward policy development in the areas such as working condition, industrial relations, Social Cohesion and Inclusion and employment trends. Major contributions of Eurofound are European Working Conditions Survey (EWCS) and the European Quality of Life Survey (EQLS), which provide valuable data across EU countries which help policy makers to develop new policy related with work place practices.(European Foundation for the Improvement of Living and Working Conditions. 2002)

3.2.3.12 Easton and Van Laar's Work-Related Quality of Life (WRQoL) Model (2008)

This model was developed for better understanding of employee well-being in the work place. How employees psychological, organizational and job related factors effect on the working lives of employees were covered under this model. Six core factors determine employees' quality of work life: job and career satisfaction, working conditions, overall well-being, workplace stress, control at work, and the interaction between home and work. This model helps to identified areas needing improvement, create targeted intervention and support employee centred policies.(Van Laar, D et al., 2007)

3.2.3.13 Rethinam and Ismail's Framework (2008)

They formed a comprehensive frame work to explain QWL of employees, as per their view QWL means “favorable conditions and environments of a workplace that support and promote employee satisfaction by providing opportunities for job involvement, career growth, and a healthy work-life balance.” Work related factors and non-work-related factors are two major components of QWL, work related factors consist of job satisfaction, job security, employee participation and

organizational commitments likewise non work related factors consist of personal well-being, work life balance, emotional needs and family responsibilities. This model is a relevant one in today's dynamic work environment where employee well-being place a major role in organizational existence and growth.(Rethinam, G. S. & Ismail, M., 2008a)

3.2.3.14 Guna Seelan Rethinam & Maimunah Ismail's Model (2008)

They propose a new model to measure QWL by integrating psychological, environmental and organizational factors that has an effect on employee well-being and satisfaction. Job satisfaction, work life balance, working condition, organizational support and employee engagements are 5 key dimensions that determine QWL of employees. This model gave importance for organizational outcomes in the form of productivity, commitment etc and employee outcome in the form of satisfaction and well-being.(Rethinam, G. S & Ismail, M., 2008)

3.2.3.15 Easton & Van Laar's Work-Related Quality of Life (WRQoL) Model (2008–2013)

This model was proposed in 2008 and further developed and validated over the following years. Six factors were identified: job and career satisfaction, general well-being, the home–work interface, stress at work, control at work, and working conditions. This model was widely used to measure QWL of workers in education and healthcare sector (Easton, S & Van Laar, D., 2013)

3.2.3.16 Work-Life Quality Framework of Sirgy et al.'s (2010)

They conducted a study about need satisfaction of employees at work place based on Maslow's need hierarchy theory. QWL of employees are maximized when employee's need for health and safety, economic and family, social, esteem, actualization, knowledge aesthetics are fulfilled through organizational policies and practices (Sirgy, M. J. et al., 2010)

3.2.3.17 Nanjundeswaraswamy & Swamy's QWL Model (2013)

He developed a comprehensive model for assessing QWL among employees focusing on various dimensions that influence on working place satisfaction, productivity and over all well-being of employees. There are 10 key areas that effect on QWL are work environment, organizational culture and climate, relation and cooperation, training and development, rewards and compensation, facilities, job satisfaction, job security and safety, autonomy of work and adequacy of work (Nanjundeswaraswamy, T. S. & Swamy, D. R., 2013)

3.2.3.18 Hernaus & Mikulic's Integrated QWL Model (2014)

This model is valuable because it bridges the gap between traditional hard (objective) and soft (subjective) elements of QWL, thus allowing organizations to design more holistic strategies to enhance employee satisfaction, performance, and retention. It integrates traditional organizational development strategy with socio technical system approach (Hernaus, T. & Mikulić, J., 2014)

3.3 Sanitation workers

Sanitation workers are the work force who are responsible for cleaning and to maintain clean and hygiene society. National Urban Sanitation Policy (2008) defines sanitation as “safe management of human excreta, including its safe confinement treatment, disposal and associated hygiene-related practices”. The policy demands to the state government for the formulation of State Sanitation Strategy for the concerned states in line with constitutional provisions because under the Constitution water and sanitation are state subjects (Government of India., 2008). Sanitation is coming under entry 6 of state list established through Article 246 of constitution of India. In India, about half of the total population of 1.21 billion (2011 Census), does not have basic sanitation facilities at home, indicating health problems and economic backwardness (Khambete & Aarti Kelkar, 2012)

According to Oxford Learner's Dictionary, a sanitation worker is a person who removes waste from outside homes. Sanitation workers are also known as waste collector, garbage man, trash man, bin man, dust man etc. They are employed

by public or private organizations to collect and transport municipal solid waste and recyclables from residential, commercial, industrial, and other sites for further processing and disposal. A report by World Bank, ILO, Water Aid and WHO defines "sanitation workers" to include toilet cleaners and caretakers in domestic, public and institutional settings; those who empty pits from pit latrines, vaults of septic tanks and other faecal sludge handlers; those who clean sewers and manholes; and those who work at sewage treatment plants, faecal sludge treatment plants and disposal sites (World Bank, ILO, Water Aid & WHO, 2019).

Safai Karmachari” is the Hindi word to denote sanitation workers in India they includes manual scavengers who works as sweepers mainly employed to clean streets and open spaces, collect solid waste, and clean open drains, public toilets doing the job of manual scavenging. Sanitation workers are also known as "Pourakarmikas" doing the work of manual scavenging. B.R. Ambedkar says “In India a man is not a sanitation worker because of his work, but he is a sanitation worker because of his birth irrespective of the question whether he does sanitation work or not” (Ravichandran, B., 2011). Lower caste by birth itself is known in the name of their job, even though they are not willing to do their caste job. The caste system, which has its roots in Hinduism, has changed over time due to influences from Buddhism and British rule (Deshpande, M. S., 2010).

In a Malayalam novel “Thottiyude Makan” the author says that son of a sanitation worker who is from the lower caste is called as son of sanitation worker at school by everyone. Hindu culture requires the removal of faeces as far as possible from the household’s environment and determines that those considered most impure and polluted-the lowest caste groups- must perform this task (Joshi, D. & Ferron, S., 2007)

Government of India passed National Commission for Safai Karmachari Act in 1993 for the protection of interest of sanitation workers. According to this Act a National Commission for Safai Karmachari is working under the Ministry of Social Justice and Empowerment. The main objective of the commission is to recommend specific action programs to the central government aimed at eliminating status

inequalities and providing facilities and opportunities for sanitation workers. Kerala have better wages and are at a better level socially as compared to the workers from other states. In Kerala sanitation workers are a part of Public Health Wing of municipality, corporation and Gramapanchayath. They are posted through employment service department and are working under Junior Health Inspector of municipality or corporation.

Indian Caste System maintained its hierarchy which is a base for access to different resources. It has social roots, religious influence and historical backgrounds. It restricts interaction across the caste lines, create gender inequality, language barrier and distinguish people based on the family job. The Most hectic and ugly job of manual scavenging is the burden and is often confined to a set of lower caste generally called the Bhangis, or ‘erstwhile untouchable’ castes who are considered untouchables even by other untouchable castes. Moreover among the Bhangis, 80 percent of the manual scavengers are women. Apart from the health and sanitation issue, manual scavenging thus has other critical dimensions, viz, human rights, human dignity as well as caste and gender oppression (Joy,K.J et al., n.d.)

3.4 Manual scavenging in India

Urbanisation in the early periods create a problem of managing human waste, rulers bring peoples from remote areas to carry the job of removing human excreta. This inhumane practice persists in certain areas due to systemic issues such as caste-based discrimination, poverty, and inadequate enforcement of laws. As per 2011 censuses there are 7,94,390 dry latrines in the country(Census of India, 2011). Who clean this dry latrine? Manual scavengers are compelled to do this dirty job. Indian Railway is the largest employment producer in this field, as per a study in India about 1.3 millions are engaged in the job (Karthikeyan P, 2014). In 2013 government of India passed The Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, but this practice continues in many part of the country due to the marginalization of oppressed community, poverty and lack of alternative livelihood. Due to the hazards working condition they have to face different health issues like skin diseases, respiratory problems and even fatal accidents in septic

tanks and sewers (NCSK, 2022). Although government initiatives such as the Swachh Bharat Mission aim to eliminate manual scavenging, inadequate enforcement of laws and limited rehabilitation measures have hindered significant progress (Human Rights Watch, 2014)

3.4.1 Legal frame work for prohibition of manual scavenging in India

The practice of manual scavenging was illegal from 1950 when the constitution of India came into force. Article 17 abolishes untouchability and its practice in any form. Several statutes have been adopted to make the employment of manual scavenging a criminal offence as well as to promote the social and economic welfare of manual scavenging community (Sujith Koonan, 2017). Some of the legislative measures taken by Government of India after Independence for the prohibition of manual scavenging are listed below

3.4.1.1 The Employment of Manual Scavengers and Construction of Dry Latrines (Prohibition) Act, 1993:

This was the first major law enacted after independence to address manual scavenging. It banned the employment of manual scavengers and the construction of dry latrines, with penalties for those who violated the provisions. (The Employment of Manual Scavengers and Construction of Dry Latrines (Prohibition) Act, 1993.). This Act was introduced in the context of growing national and international awareness about human rights violations associated with manual scavenging and its deep-rooted connection to caste-based discrimination (Ramaswamy, V., 1994)The Act explicitly prohibited the employment of individuals for manually cleaning human excreta from dry latrines. A dry latrine is defined as a latrine that requires manual cleaning due to the absence of a water flushing system (The Employment of Manual Scavengers and Construction of Dry Latrines (Prohibition) Act, 1993., 1993). The Act banned the construction or continuance of dry latrines, emphasizing the need to transition to modern sanitation facilities. Violations of the Act were punishable by imprisonment for up to one year or a fine of Rs.2000, or both. These penalties applied to both employers of manual scavengers and individuals constructing or maintaining dry latrines. The Act assigned significant

responsibilities to local authorities, such as municipalities and gramapanchayats, to identify, report, and ensure the demolition of dry latrines in their jurisdictions. However, its implementation was hindered by a lack of accountability and awareness (The Employment of Manual Scavengers and Construction of Dry Latrines (Prohibition) Act, 1993., 1993) The Act did not provide a robust framework for enforcement. Many local authorities failed to comply with their obligations. The Act applied only to certain states and union territories, leading to inconsistencies in its application (Ghosh, A., 2003).

3.4.1.2 The Prohibition of Employment as Manual Scavengers and Their Rehabilitation Act, 2013

Prohibiting an employment through enactment will not make much change in the situation, especially in a society where peoples are doing sanitation jobs as a part of their caste and beliefs. Employees in these fields have no other option of livelihood; they are doing this job from generation to generation. The better way of banning this inhuman practice is to rehabilitate these workers through helping them to find out a new income generating way. Unlike its predecessor, the 1993 Act, this law that is 2013 Act adopted a more comprehensive approach by not only prohibiting manual scavenging but also including robust provisions for the rehabilitation of those involved in this practice. The Act explicitly prohibits the employment of individuals both in public and private establishment as manual scavengers, including in the cleaning of insanitary latrines, sewers, and septic tanks. Local authorities, in collaboration with social justice departments, are mandated to conduct surveys to identify manual scavengers after finding out they have to be rehabilitated through one time cash assistance, skill development training for alternative livelihood, housing assistance and education to dependents. Act promotes the use of mechanized equipment to clean sewers and septic tanks to prevent the deployment of manual labour. The Act establishes vigilance committees at the district, state, and central levels to monitor its implementation. These committees are tasked with overseeing the prohibition of manual scavenging and ensuring the rehabilitation of affected individuals (The Prohibition of Employment as Manual

Scavengers and Their Rehabilitation Act, 2013., 2013). The Supreme Court of India has emphasized the effective implementation of the Act in cases like *Safai Karamchari Andolan v. Union of India* (2014). The Court directed state governments to strictly enforce the provisions of the Act and compensate families of workers who died due to unsafe sewer or septic tank cleaning (*Safai Karamchari Andolan v. Union of India*, 2014).

3.4.1.3 National Commission for Safai Karamcharis Act, 1993

“Safai Karmachari” is the Hindi word to denote sanitation workers in India. Government of India passed this Act for formulating a statutory body to address the grievances, welfare and upliftment of sanitation workers especially those who engaged in manual scavenging. The Act provide power to the central government to constitute a statutory commission with the aim of study the issues related with implementation of scheme for welfare and rehabilitation of manual scavengers. Under this Act the commission was formed on 12th August 1994 for a period of three years. According to Section 1(4) of the Act, it was scheduled to cease operations on 31 March 1997; however, the government extended its validity until 2004. From 29 February 2004, the Commission has functioned as a non-statutory body under the Ministry of Social Justice and Empowerment. The period of commission is extent by the department through government resolution; the last extension resolution was 12-02-2025, as per this resolution the tenure of commission from 01-04-2025 to 31-03-2028. Commission was entrusted to monitor the implementation of laws and programs for removal of manual scavenging and to protect the interest of sanitation workers. It has also responsible for making valuable recommendation and suggestion regarding policy and legislative changes that has to be taken by central government from time to time (The National Commission for Safai Karamcharis Act, 1993, 1993)

3.4.1.4 National Safai Karmachari’s Finance and Development Corporation (NSKFDC)

NSKFDC was formed on 24th January of 1977 under the Ministry of Social Justice and Empowerment as a ‘not for profit’ company under companies Act 1956.

It is apex body for all-round development of Safai Karmacharies, scavengers and their dependent all over India through various loans and non-loan schemes. The loan schemes of corporation includes green business scheme which are provided for forming business unit which reduce carbon emission, Sanitary mart scheme, Swachhata Udyami Yojana (SUY), educational loan schemes, general term loans, Mahila Adhikarita Yojan (MAY), Mahila Samridhi Yojana (MSY), Micro credit finance (MCF) and pay and use toilet scheme. Under all the above schemes manual scavengers will get financial assistance to find out a lively hood which help him to stop that job. Some of the non-loan schemes like awareness camps, work shop/ job fares are also constituted by them for educate the scavengers about the evils that they have to face when they are moving through their live as manual scavenger(NSFDC, 2025). Table 3.1 shows the Notional Allocation fund to various states for the Financial Year 2025-26 (Rs. In Crores)

3.5. Types of sanitation work

Sanitation job consist of a wide spectrum of activities that help to maintain the surrounding of a society clean and maintain a sustainable environment that promote healthy community. Every tire of sanitation workers from the point of collection of waste to the point of treatment of waste is doing a highly hazardous job which protects the public health. Their tireless efforts have a significant impact on promoting a healthier and safer environment for everyone. Sanitation work consist of many activities, major activities are listed below

3.5.1 Street cleaning

One of the major tasks performed by the sanitation workers is cleaning the public places such as parks, sidewalks, street by using brooms, rakes, shovels and other hand tools to remove litters, debris and dirt. A large number of peoples are regularly visiting the street and they using many type of products which create a huge volume of garbage. They may throw it in the street even when there is existence of dust bin. Sanitation workers appointed by the municipal authorities collect all these garbage segregate it as degradable or non-degradable and finally

carry these things to respective processing centres. Street cleaners often face occupational risks such as dust inhalation and traffic hazards (ILO, 2021).

3.5.2 Garbage collection

It is the process of collecting waste from commercial institutions and residential complexes. In cities there is not enough space for treating the house hold waste in their own homes, they are forced to remove their waste to some other places, here the garbage collectors who collect house hold waste and wastes in commercial enterprises especially in hotels, cool bars, vegetable markets, fish markets, fruits market etc on a regular basis (WHO, 2019) . In Kerala Haritha Karma Sena one of the program under Haritha Keralam Project of Kerala Government, Sena members collect non degradable waste from house holds monthly by charging 50/ rupees from a house.

3.5.3 Transportation and storage of garbage

The collected garbage has to be moved towards the treatment plants, this process include storage and transportation task. In storing place the collected non degradable waste has to be segregated on the basis of its reuse and then it has to be stored separately until it should be loaded to the respective vehicles to carry it towards its own processing centers. Proper trucks and other approved vehicles were used to carry the waste for disposal or treatment. They guarantee that the garbage is safely contained and guard against spills or littering while in transit.

3.5.4 Sewer and Drain maintenance

Proper functioning of underground sewage system is the highlight of a city, for that smooth flow of waste water should be ensured by removing blocks in the sewages and drains. Earlier days in order to remove the debris in the drain sanitation workers are enter in to the drain and remove it by manually. Such tasks often expose workers to hazardous gases, pathogens, and unsafe working conditions (ILO, 2021). In the present technological world specialized equipment, such as high-pressure water jets, vacuums, and inspection cameras were available to clear blockages and clean sewer lines.

3.5.5 Recycling Works

Reduce, reuse and recycle is the common slogan used universally for managing non degradable waste. For recycling for waste first of all it has to be sorted to find out the material which is usable for recycling. Workers are working at recycling centers or facilities where they sort different types of recyclables, such as paper, plastic, glass, and metal. They use conveyor belts, hand picking and machinery to separate material and remove containment. Their efforts contribute to reducing waste, conserving natural resources, and promoting environmental sustainability.

3.5.6 Public Toilet and Facility Cleaning

Public toilets and facilities are used by many, so there is a chance of spreading of communicable diseases through the unhygienic situation in these places. Sanitation workers keep clean these public places like bus station, public rest rooms, toilets, schools and other community facilities (MoHUA, 2020).

3.5.7 Manual Scavenging

It is the most inhuman practice exist among the job of sanitation work, here the worker manually remove the human excreta from the dry latrine, septic tanks or open drains. Even though it is officially banned in India through Prohibition of Employment as Manual Scavengers and their Rehabilitation Act of 2013, still it is exist in India. This is considered the most hazardous and stigmatized form of sanitation work (Government of India., 2013).

3.6 Conclusion

The current chapter has explored the theoretical overview about quality of work life and about sanitation workers which offer insight to the broad knowledge about evolution of the concept of quality of work life; different definition given by different experts from time to time and different QWL model developed by different researchers were included. What is sanitation work as per the current literature is also included in this chapter followed by the pathetic situation of manual scavengers

in India. It is now essential to examine the result of analysis conducted on primary data with the specific objective to find out the QWL of sanitation workers in Kerala. These findings and interpretations are included in the following chapters.

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Chapter 4

Research Methodology

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4.1 Introduction

This chapter outlines the methodology employed to carry on the research to accomplish the desired objective of the research. It consist of how the data is collected, how it's arranged in an order and which statistical tools were used to analyses the data. The purpose of studying sanitation workers in Kerala is to understand their crucial role in upholding public health and hygiene and their quality of work life. They are the essential contributors to solid waste management system in urban and semi urban areas of the state. As per 2011 census urban population of Kerala state is 15.93 million representing about 47.22% of total population. The increase in the urban population is from five districts- Ernakulam, Thrissure, Kozhikode, Kannur and Alappuzha. The number of towns in Kerala is increased from 159 to 520 during the period between 2001 to 2011. Census also point out that 2.57% of urban households do not have access to a sanitary toilet in their residential premises. Out of this 1.67% defecate in open while remaining 0.90% use shared public sanitation facility(Census of India, 2011). Urbanization is the reality in Kerala, the major challenges faced by Kerala due to the rapid urbanization is management of waste. Urban Kerala consist of six municipal corporation and 87 municipalities. This study seeks to elucidate the socio-economic status, occupational hazards, and community effects of sanitation workers, while advocating for enhanced working conditions, superior healthcare facilities, and more inclusive social norms that recognize their essential contributions.

4.2 Research design

The research design of the proposed study is descriptive and analytical in nature as the researcher try to describe and analyze the degree of quality of work life among sanitation workers in Kerala

4.3 Source of data

The data for the study were collected from both primary and secondary sources.

4.3.1 Primary data

It is crucial in research as it is original information collected directly from the respondent ensuring authenticity and relevance to the specific objective of the study (Kumar, R., 2019). A structured questionnaire was used as an instrument to collect first-hand information from the sanitation workers for the purpose of studying the objectives and testing the hypothesis. It has two part, first part consist of socio economic profile of the workers and the second part collect the opinion of workers about various dimensions of quality of work life, their perception about quality of work life, how QWL factors influenced on the job satisfaction and what are the work life challenges that they face during the period of different calamities.

4.3.2 Secondary data

The data which are available in the public domain is called secondary data. It is useful for validating findings or conducting longitudinal studies when repeated data collection is impractical (Saunders, M. et al., 2019). Researcher uses data from published works, newspapers, PhD thesis, government publications like censuses data, economic review published by both central and state governments, report of RBI, reports of ILO, websites of various government, semi governments and private organizations

4.4 Population of the study

Population of the study is spread among municipalities and municipal corporations of Kerala. In Kerala there are 87 municipalities and 6 municipal corporations with permanent and temporary workers engaged in sanitation work. There are 7924 workers working in different municipalities and corporations. The following tables shows the number of sanitation workers in municipality and corporation

Table 4.1*Sanitation workers in Kerala*

Zone	District	Municipalities		Corporations		Total
		Tempo- rary	Per- manent	Tempo- rary	Per- manent	
South Kerala	Thiruvananthapuram	40	117	363	1019	1539
	Kollam	64	60	100	198	422
	Pathanamthitta	27	106			133
	Alapuzha	45	328			373
	Kottayam	100	320			420
Central Kerala	Idukki	0	43			43
	Ernakulam	65	380	0	799	1244
	Thrissur	135	223	335	246	939
	Palakkad	237	367			604
North Kerala	Malappuram	84	299			383
	Kozhikode	15	207	124	759	1105
	Wayanad	28	64			92
	Kannur	17	297	28	194	536
	Kasaradode	22	69			91
Total		879	2880	950	3215	7924

(Source- primary data)

4.5 Sampling Design

A definite plan for getting the sample from the specified population is called sample design. Sampling design is said to be effective only when it's efficient, unbiased and economical. It must clearly define the sampling frame, sample size and sampling unit to reach a meaningful result(Kothari, C. R., 2004). Sanitation workers are working at organized sectors and unorganized sectors. The present study indented to cover sanitation workers working under organized sector under 87 municipalities and 6 corporations of Kerala.

4.5.1 Sample size determination

Since this is a finite population and the population size is exactly known sample required was calculated using Taro Yamane formula (Yamane, T., 1973)

$$n = N/1+N(e)^2$$

Where n = required sample size

N= Total population

e- Margin of error (0.05)

By using Taro Yamane formula sample size will be

$$n = 7924/1+7924(0.05)^2$$

380.

Sample size determination by using Krejcie and Morgan equation (Krejcie, R. V. & Morgan, D. W., 1970)

$$S = X^2NP(1-P)/ d^2(N-1)+X^2P(1-P)$$

Here S is required sample size, X² is the table value of chi-square for 1 degree of freedom at the desired confidence level that is 3.841, N is population size, P is the population proportion (assumed to be 0.50 since this would provide maximum sample size) and d is the degree of accuracy expressed as a proportion (0.05)

$$\begin{aligned} \text{Here } S &= 3.841*7924*0.50(1-0.50)/ (0.05)^2(7924 - 1)+3.841*0.50(1-0.50) \\ &= 366. \end{aligned}$$

Both the equations shows almost near figures, researcher has taken **380** as the sample size for the study

4.5.2 Sampling technique

Multistage stratified random sampling technique is used for selecting the sample respondents

4.5.3 Process of sampling selection

The following steps were used for sample selection process

1. In the first stage the state of Kerala is divided in to three regions on the basis of geographical location namely South Kerala, Central Kerala and North Kerala. Southern Kerala comprise Thiruvananthapuram, Kollam, Pathanamthitta, Alapuzha and Kottayam districts, Central region consist of Palakkad, Thrissur, Ernakulam and Idukki districts and Northern region includes Kasargod, Kannur, Kozhikode, Wyanad and Malappuram districts.
2. At the second stage, for the purpose of the study from each region 25% of municipalities from south zone, central zone and north zone are selected at random by using lottery method and one corporation is also selected at random from each zone. The following table shows the municipalities and corporation selected from each zone for data collection.

Table 4.2

Municipalities and corporations selected for the sample selection

Zone	Name of municipalities/corporation
South Kerala	Municipalities- Punalur, Panthalam, Cherthala, Kottayam, Pala and Ettumanoor Corporation - Thiruvananthapuram
Central Kerala	Municipalities- Angamaly, Eloor , Guruvayoor, Plakkad, Ottapalam , Shornoor and Pattambi Corporation - Thrissur
North Kerala	Municipalities- Perinthalmanna, Kondotty, Vadakara, Koyilandy , Feroke, SulthanBathery, Thalassery and Kasaragod Corporation- Kozhikode

3. For the purpose of deciding the number of sanitation workers to be selected from each zone, researcher divided the population in to four strata such as

temporary workers working under municipalities, temporary workers in corporations, permanent workers in municipalities and permanent workers in corporation. The researcher decided to draw proportionate number of sanitation workers in each strata, which is as shown below

Table 4.3

Proportion of sample selection

Zone	No. of Temporary workers from municipalities	No. of Temporary workers from corporation	No. of Permanent workers from municipalities	No. of Permanent workers from corporation	Total
South Kerala	9	11	33	56	109
Central Kerala	18	16	40	38	112
North Kerala	13	18	64	64	159
Total	40	45	127	158	380

(Source- Primary Data)

- Out of 380 respondents selected for study 109 respondents from South Kerala were selected, from Central Kerala 112 respondents were selected and 159 respondents were selected from North Kerala of which a total of 40 respondents are temporary workers from municipalities, 127 respondents are permanent workers from municipalities, 45 respondents are temporary workers from corporation and 158 respondents are permanent workers from corporations.

4.6 Research instrument

For the purpose of collecting primary data a structured questionnaire is prepared based on the review of literature and expert opinion. The questionnaire has five parts, the first part consist of demographic profile of sanitation workers which

include gender, age, education, religion, social class, place of residence, marital status, family type, income, place of job and employment status. Second part of questionnaire deals with the nine factors of quality of work life of sanitation workers, third part include the questions relating to the perception of workers towards quality of work life, fourth part consist of questions about job satisfaction and last part consist of questions about work life challenges faced by them during different calamities.

4.7 Variables used for the study

For accomplishing the above mentioned objectives the study has to go through various factors that affect the quality of work life of sanitation workers of Kerala, workers perception towards quality of work life, job satisfaction of workers and different challenges they face during different calamities. Table 4.4 indicates the major variables framed based on the objective of the study

Table 4.4

Variables of the study

SL NO.	Purpose	No.of variables	Variables used
1	Factors affecting Quality of work life	9	1. Working Condition 2. Compensation 3. Work load 4. Work life balance 5. Job security 6. Health and safety 7. Social support and work place relationship 8. Training and development Facilities 9. Career growth and Advancements
2	Perception on Quality of Work life	3	1. Fairness and Equity 2. Work Motivation 3. Expectation and beliefs
3	Job satisfaction	2	1. Job attributes 2. Organizational Dynamics
4	Challenges during Calamities	2	1. Operational Challenges 2. Personal Challenges

(Source; Adopted from literature review)

4.8 Period of data collection

Primary data were collected from sanitation workers working under different municipalities and corporations during the period from November 2024 to June 2025. Secondary data were collected during the period from March 2022 to January 2026.

4.9 Pilot study

Pilot study is used as a tool for preliminary investigation to refine and validate the questionnaire prepared for a comprehensive research study. It helps to assess the clarity, relevance and reliability of items in the questionnaire in capturing essential data related to working condition, remuneration, work load, challenges and socio economic conditions of sanitation workers. This enables researcher to find out potential misunderstanding, gap in the questionnaire and uncertainty in the questionnaire. From the result of the pilot study researcher can improve the overall quality and effectiveness of research instrument. Accuracy and reliability of data collection tool is essential for the generation of trustworthy findings of the research. Here a structured questionnaire was used for collecting first hand data from the sanitation workers and was carefully evaluated to confirm that it effectively measures what the researcher is intended to measure? Validity testing is important to make sure that each question fits with the study goals and correctly measures the important variables. Before the finalization of research instrument a pilot study was conducted among 125 sanitation workers from the Municipality and Corporation of Calicut and Malappuram districts. Cronbach's alpha Co-efficient is used to test the reliability of the measurement scale and an exploratory factor analysis was conducted on the pilot data. Based on the result of EFA certain statements not having enough factors loading were deleted from the questionnaire. Thus modifications were made to the questionnaire after the pilot study before making the final collection of data.

4.10 Reliability and validity assessment of measurement scale

Reliability and validity are the foundational concept used to evaluate and confirm accuracy and credibility of scale. Validity explains how well the collected

data covers the actual area of investigation (Ghauri, P & Gronhaug, K., 2010). There are two types of validity: content validity and construct validity. Construct validity is further divided into convergent and discriminant validity. Content validity is defined as “the degree to which items in an instrument reflect the content universe to which the instrument will be generalized” (Straub, D et al., 2004). Construct Validity explains the empirical relationship between measuring instruments & theoretical concepts (Straub, D et al., 2004)

The scale is used to assess the ‘**Quality of Work Life of Sanitation Workers**’ is validated by using Exploratory Factor Analysis (EFA) on 125 sample collected for pilot study and Confirmatory Factor Analysis on 380 samples collected for the main study . It is applied to assess the quality of the factor structure by statistically testing the significance of the overall model, as well as relationships among items and scales based on sample data (Joseph F. Hair et al., 2010)

Here, the validation and reliability statistics are done for the Likert scale items namely, Factors of Quality of Work Life (FQWL), Perception on Quality of Work Life (PQWL), Job Satisfaction (JS), and Challenges (CH). Exploratory Factor Analysis, Confirmatory Factor Analysis and Cronbach’s Alpha Co-efficient are employed to test the validity and reliability criteria. The results of each variable are presented below.

4.10.1 Validity and Reliability of Factors of Quality of Work Life (FQWL)

Factors influencing Quality of Work Life (FQWL)) of Sanitation Workers is validated by using Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis. It is used to measure the quality of the factor structure by statistically checking the significance of the overall model, as well as associations between items and scales based on sample data. The variables are: - Working Condition (WC), Compensation (CO), Workload (WL), Work Life Balance (WLB), Job Security (JS), Health and Safety (HS), Social Support and Work Place Relationship (SS), Training and Development facilities (TD) and Career Growth and Advancements (CGA).

4.10.1.1 Exploratory Factor Analysis (EFA) – Factors of Quality of Work Life (FQWL)

Exploratory Factor Analysis (EFA) requires certain hypotheses to be satisfied namely correlation and sampling adequacy. The KMO Bartlett test include Bartlett test of sphericity that assess the multivariate normality of variables in addition to analyzing whether the correlation matrix is an identity matrix (George, D. & Paul Mallery., 1999). The KMO test can measure whether the sample size is adequate for conducting factor analysis (George, D. & Paul Mallery., 1999).

The Cronbach's alpha Co-efficient is used to test the reliability of the measurement scale. A Cronbach's alpha value greater than or equal to 0.70 is considered acceptable for the factor to be reliable (Joseph F. Hair et al., 2010) regarding the proposed measurement scale of the study.

Exploratory Factor Analysis (EFA) using Principal Component Method (PCM) with Varimax Rotation is used to analyze the factor structure and correlation between 42 statements included in the scale for measuring the **Factors of Quality of Work Life (FQWL)** of sanitation workers in Kerala. The results are presented below.

Table 4.5

Result of KMO and Bartlett's Test – Factors of Quality of Work Life (FQWL)

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.875
Approx. Chi-Square		6333.827
Bartlett's Test of Sphericity	df	861
	Sig.	.000

(Source- primary data)

A Principal Component Analysis is conducted on the 42 statements with Varimax Rotation. The Kaiser-Meyer-Olkin (KMO) measure confirms the sample suitability for the analysis, KMO value is **0.875** which is above the recommended limit of **0.70**. Bartlett's test is another indication of the power of association among

variables. Bartlett's Test of Sphericity Chi-Square = **6333.827**, **p<0.01** specifies that the connection between the items is adequately large for Principal Component Analysis (PCA). A preliminary analysis is run to find Eigen Values for each component in the variable. Nine components have Eigen values **above Kaiser's criterion of 1** and combination explained **85.910%** of the variance.

Table 4.6

Result of Exploratory Factor Analysis – Factors of Quality of Work Life (FQWL)

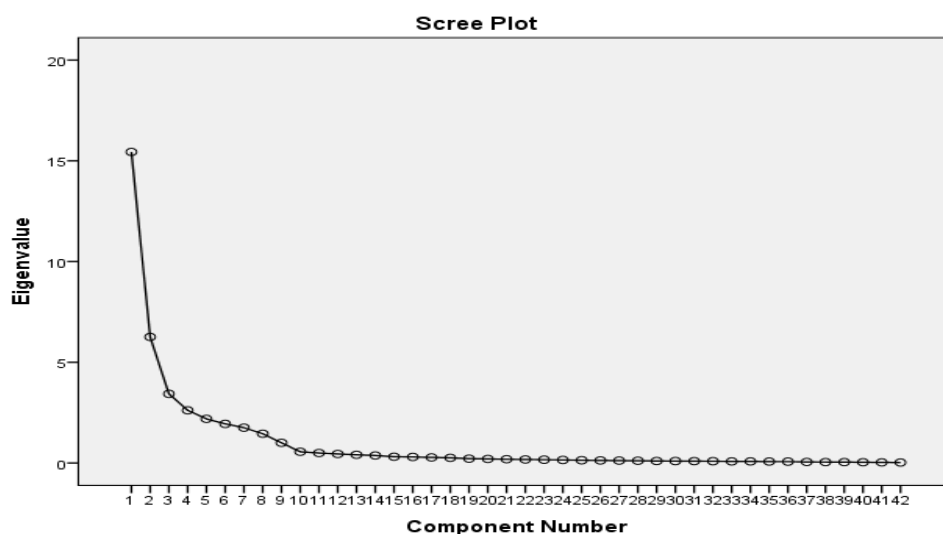
Constructs	Statements	Code	Factor Loadings	Eigen Value	Variance Explained	Cronbach's Alpha
Working Condition (WC)	Reasonable working hours	WC1	.901	15.43	36.75%	0.943
	Hazardous working condition	WC2	.772			
	Adequate equipment	WC3	.828			
	Group cohesion	WC4	.867			
	Preference for collective work.	WC5	.875			
	Harassment and discrimination free workplace.	WC6	.872			
	Reasonable work load	WC7	.890			
Compensation (CO)	Fare pay	CO1	.617	6.257	14.89%	0.948
	Market rate pay	CO2	.681			
	Social security	CO3	.766			
	Reimbursement for expenses	CO4	.718			
	Grievance redressal	CO5	.664			
	Retirement benefits	CO6	.676			
Work Life Balance (WLB)	Manageable work load	WL1	.753	3.433	8.173%	0.926
	Sufficient breaks	WL2	.770			
	Workload affects quality service	WL3	.842			
	Consideration for personal affaires	WLB1	.789			
	Work does not affect family life.	WLB2	.775			
	Technology for balancing family and work life	WLB3	.816			
	Flexible work schedule	WLB4	.851			

Constructs	Statements	Code	Factor Loadings	Eigen Value	Variance Explained	Cronbach's Alpha
Job Security (JS)	Stability of employment	JS1	.822	2.189	5.213%	0.974
	Authority support for job security	JS2	.839			
	Skills are valued by authorities.	JS3	.816			
	Job security helps workers focus on task	JS4	.833			
	Commitment to worker retention during crises.	JS5	.851			
Health and Safety (HS)	Safe and comfortable workplace	HS1	.833	1.942	4.623%	0.934
	Risk of illness	HS2	.797			
	Adequate protective gear for safety.	HS3	.812			
	Timely preventive vaccinations.	HS4	.858			
	Provides insurance.	HS5	.818			
Social Support and Work Place Relationship (SS)	Social status	SS1	.814	1.754	4.177%	0.964
	Work environment builds self-esteem	SS2	.833			
	Sense of community and openness.	SS3	.843			
	Freedom from discrimination	SS4	.892			
	Dignified and growth-oriented job	SS5	.784			
	Idea and feeling based interactions.	SS6	.822			
Training and Development facilities (TD)	Adequate training	TD1	.908	1.453	3.459%	0.913
	Job specific training	TD2	.849			
	Training enhances performance and career growth	TD3	.852			
Career Growth and Advancements (CGA)	Opportunity to expand capabilities	CGA1	.910	1.003	2.388%	0.967
	Growth oriented job	CGA2	.880			
	Work environment motivates to reach potential	CGA3	.890			
Total Variance Explained – 85.910%						
(Source- Primary data)						

The result of Exploratory Factor Analysis (EFA) displays that the result is based on **9 constructs** and all items have loadings on their own factors. The **nine-factor solution** is clarifying **85.910%** of variance of the total variance. A total of seven indicators are included in first factor ‘Working Condition’ (WC) which elucidating over **36.75%** of variances, six indicators are included in the second factor ‘Compensation’ (CO) which revealing over **14.89%** of variance, three indicators are included in the third factor ‘Workload’ (WL) which interpreting over **8.173%** of variance, four indicators are included in the fourth factor ‘Work Life Balance’ (WLB) which explicating over **6.222%** of variance, five indicators are included in the fifth factor ‘Job Security’ (JS) which clarifying over **5.213%** of variance, five indicators are included in the sixth factor ‘Health and Safety’ (HS) which indicating over **4.623%** of variance, six indicators are included in the seventh factor ‘Social Support and Work Place Relationship’ (SS) which clarifying over **4.177%** of variance, and three indicators are included in the eighth factor ‘Training and Development facilities’ (TD) which elucidating over **3.459%** of variance and three indicators are included in the ninth factor ‘Career Growth and Advancements’ (CGA) which explaining over **2.388%** of the total variance. In total, nine- factors solution revealing over **85.910%** of variance of the total variance explained.

Figure 4.1

Scree-Plot of Exploratory Factor Analysis – Factors of Quality of Work Life (FQWL)



(Source- Primary data)

The Scree plot displays Eigen values on the y-axis, representing the amount of variance explained by the respective variable ‘factor of quality of work life’ and x-axis, providing the number of indicators of the variable. The elbow shape of the curve explains the significant explanation of the variance of each factor from the order of highest to lowest. Since the Eigen value is considered, nine factors have the values of greater than 1. Hence, the solution explaining nine factors for determining the proposed variable.

Construct Validity: -

The above table 4.7 shows all the factor loadings are above 0.40, and criteria of **Construct Validity** including both the **Discriminant Validity** (loading of at least 0.40, no cross-loadings of items above 0.40) and **Convergent Validity** (Eigen values of 1, loadings of at least 0.40, items that load on posited constructs)(Straub, D et al., 2004). The result of Exploratory Factor Analysis shows that the selected factors under the construct ‘**Factors of Quality of Work Life (FQWL)**’ has good level of validity.

Reliability: -

Reliability of the measurement scale is checked using **Cronbach’s Alpha Co-efficient**. An alpha value of 0.70 or above is considered to be a standard for representing strong internal consistency. Accordingly, the **Cronbach’s Alpha Reliability Co-efficient** values of all the constructs of the dimension of the study namely, Working Condition (0.943), Compensation (0.948), Workload (0.926), Work Life Balance (0.953), Job Security (0.974), Health and Safety (0.934), Social Support and Work Place Relationship (0.964), Training and Development facilities (0.913), and Career Growth and Advancements (0.967) are above 0.70, hence strong internal consistency is ensured and the instrument is considered as highly reliable.

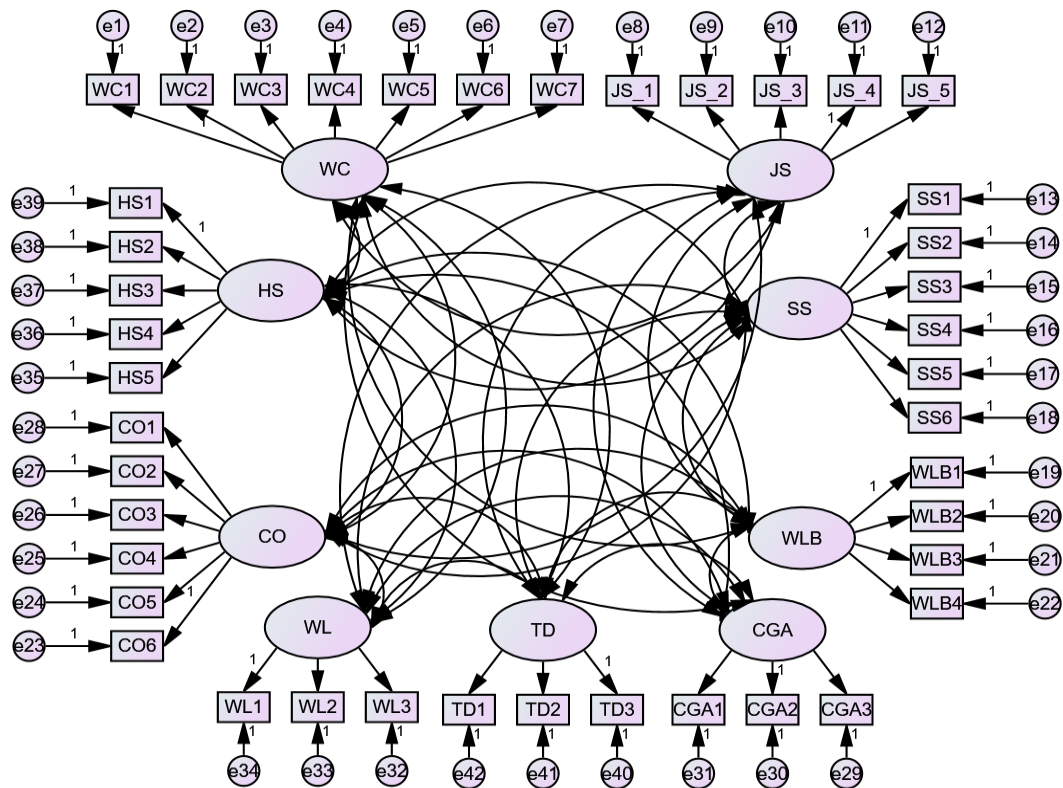
The next step is to conduct Confirmatory Factor Analysis (CFA) for the variable ‘Factors of Quality of Work Life’ (FQWL) and its constructs identified from Exploratory Factor Analysis (EFA) to evaluate the underlying structure of them.

4.10.1.2 Confirmatory Factor Analysis – Factors of Quality of Work Life (FQWL)

A Confirmatory Factor Analysis (First Order CFA) is applied to validate the measurement scale of ‘Factors of Quality of Work Life (FQWL)’ of Sanitation workers in Kerala. It explains the underlying structure of the constructs within the variables of the study by taking proposed model, measurement model, fit indices and validity, reliability statistics. It verifies the factor structure of the measurement scale with the help of pre-structured theoretical model and confirming the relationship between latent constructs and observed variables. The best fitting of the model is examined with the help of different indices and validity statistics is measured in the light of composite reliability, average variance explained and maximum shared variance of inter constructs of each dimension.

Figure 4.2

Proposed Model – Factors of Quality of Work Life (FQWL)



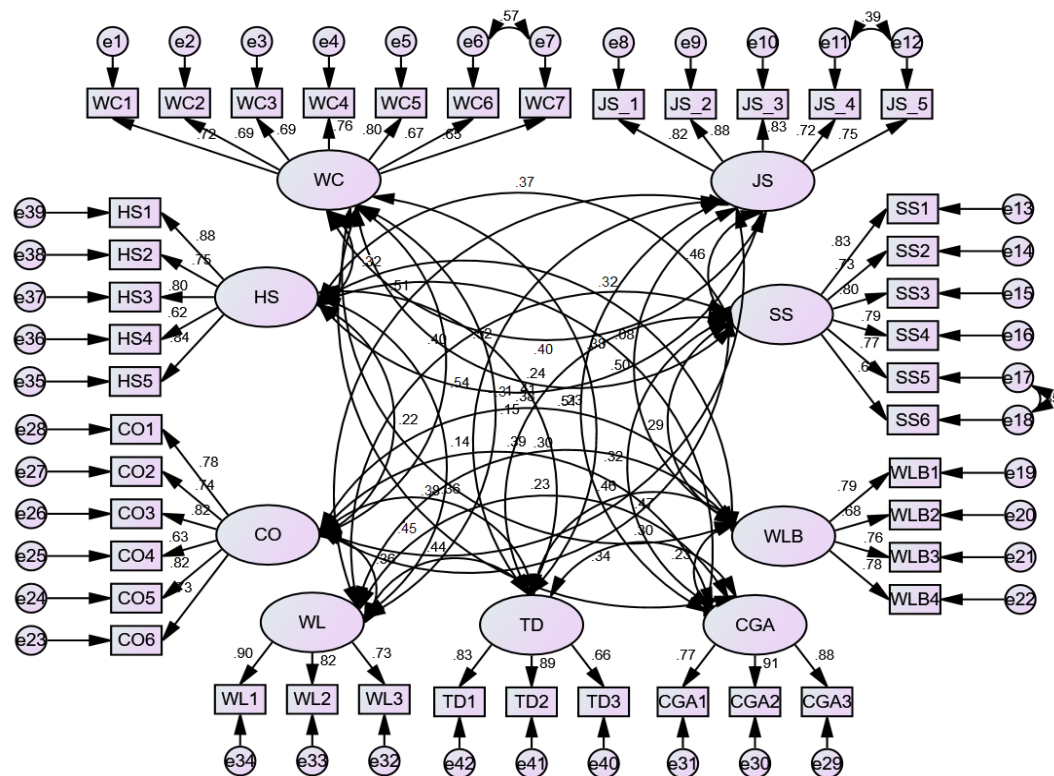
(Source- Primary data)

The theoretical model for representing the factors of quality of work life explored nine constructs with 42 statements. Each constructs have minimum of three observed variables. The inter-relationship among the constructs confirm the discriminant validity of the scale. In this style, the measurement model is explained with the values of factor loading of observed variable and relationship of inter constructs. According to the values, the validity and reliability of the measurement model is confirmed by scrutinizing the fitness of the model for representing the theoretical perspective. According to the theory, the factors of quality of work life of sanitation workers are measured by explaining the nine constructs. From the analysis result itself, it is clearly defined the role of each factors for determining the quality of work life.

Measurement model, fitness of the model, path estimates, validity and reliability statistics are presented below.

Figure 4.3

Measurement Model – Factors of Quality of Work Life (FQWL)



(Source- Primary data)

The measurement model for representing the scale of ‘factors of quality of work life’ of sanitation workers in Kerala implies the significant relationship between observed variables (indicators) and latent constructs (factors). Here, nine latent constructs are identified from the 42 observed variables have factor loading exceeds 0.70 showing a strong relationship between each indicator and its corresponding factors. The factors also have good covariance among themselves. Model fitness is assessed using various fit indices and result satisfies validity and reliability requirements, indicating the model effectively measure the quality of work life of sanitation workers. These results are presented below.

Table 4.7

Model Fit Indices – Factors of Quality of Work Life (FQWL)

Indices	Value Obtained	Recommended Values of Good Fit	Recommended Values of Acceptable Fit
Normed chi-square (CMIN/df)	2.455	≤ 3	≤ 5
Root Mean Square Residuals (RMR)	0.059	≤ 0.05	≤ 0.08
Comparative Fit Index (CFI)	0.884	≥ 0.90	≥ 0.80
Goodness of Fit Index (GFI)	0.806	≥ 0.90	≥ 0.80
Incremental Fit Index (IFI)	0.885	≥ 0.90	≥ 0.80
Tucker Fit Index (TLI)	0.872	≥ 0.90	≥ 0.80
Normed Fit Index (NFI)	0.820	≥ 0.90	≥ 0.80
Relative Fit Index (RFI)	0.802	≥ 0.90	≥ 0.80
Root Mean Square Error of Approximation (RMSEA)	0.062	≤ 0.08	$= 0.08$

(Source- primary data)

Table 4.7 assesses the fitness measurement model using various fit indices. The CMIN/df of 2.455 which is less than 3, indicating the good fitness. RMSEA measure the appropriateness of the model with value of 0.062 (less than 0.08) the model is appropriate comparative significantly acceptable. CFI, IFI, TLI, NFI and

RFI explain the baseline comparison of the model with acceptable fit indices of values of greater than 0.80. RMR represents the average difference between observed and predicated correlation of the model with value of 0.059, which is within the limit of the acceptable fitness. GFI measures the proportion of the variance explained with the values of 0.806, which is in the limit of acceptable fitness of the model. Overall, the measurement model for measuring the proposed variable is acceptable.

According to the CFA model, the validity of the measurement scale ‘factors of quality of work life’ is identified by examining the Composite Reliability, Average Variance Extracted and Maximum Shared Variance extracted from the values of factor loadings of observed variables to the latent constructs.

Table 4.8

Validity and Reliability Result of Factors of Quality of Work Life (FQWL)

Constructs	Statements	Factor Loadings	CR $CR = \frac{(\sum \lambda_i)^2}{(\sum \lambda_i)^2 + \sum Var(\varepsilon_i)}$	AVE $AVE = \frac{\sum_{i=1}^n \lambda_i^2}{n}$	MSV = square of highest correlation b/w latent constructs	MaxR(H)
Working Condition (WC)	WC1	.720	0.878	0.507	0.024	0.883
	WC2	.688				
	WC3	.689				
	WC4	.755				
	WC5	.799				
	WC6	.672				
	WC7	.651				
Compensation (CO)	CO1	.776	0.888	0.571	0.221	0.896
	CO2	.742				
	CO3	.821				
	CO4	.634				
	CO5	.817				
	CO6	.727				

Constructs	Statements	Factor Loadings	CR $CR = \frac{(\sum \lambda_i)^2}{(\sum \lambda_i)^2 + \sum Var(\varepsilon_i)}$	AVE $AVE = \frac{\sum_{i=1}^n \lambda_i^2}{n}$	MSV = square of highest correlation b/w latent constructs	MaxR(H)
Workload (WL)	WL1	.899	0.859	0.671	0.256	0.881
	WL2	.816				
	WL3	.735				
Work Life Balance (WLB)	WLB1	.787	0.840	0.568	0.249	0.845
	WLB2	.676				
	WLB3	.762				
	WLB4	.784				
Job Security (JS)	JS1	.819	0.899	0.641	0.274	0.908
	JS2	.877				
	JS3	.825				
	JS4	.718				
	JS5	.755				
Health and Safety (HS)	HS1	.878	0.887	0.613	0.058	0.904
	HS2	.751				
	HS3	.803				
	HS4	.621				
	HS5	.837				
Social Support and Work Place Relationship (SS)	SS1	.829	0.896	0.591	0.208	0.901
	SS2	.735				
	SS3	.800				
	SS4	.786				
	SS5	.775				
	SS6	.677				
Training and Development facilities (TD)	TD1	.829	0.839	0.638	0.274	0.872
	TD2	.891				
	TD3	.657				

Constructs	Statements	Factor Loadings	CR $CR = \frac{(\sum \lambda_i)^2}{(\sum \lambda_i)^2 + \sum Var(\varepsilon_i)}$	AVE $AVE = \frac{\sum_{i=1}^n \lambda_i^2}{n}$	MSV = square of highest correlation b/w latent constructs	MaxR(H)
Career Growth and Advancements (CGA)	CGA1	.769				
	CGA2	.907	0.888	0.726	0.263	0.903
	CGA3	.875				

(Source- primary data)

Table 4.8 explains the Standardized Factor Loadings, Composite Reliability (CR), Average Variance Extracted (AVE) and Maximum Shared Variance (MSV) of each construct used to measure the variable ‘Factors of Quality of Work Life’ of Sanitation Workers in Kerala. Here all the values of Standardized Factor Loadings are above 0.60, which shows all the observed variables are satisfactorily contributes to the latent constructs.

To demonstrate the Convergent Validity, three conditions to be followed namely, the value of Composite Reliability (CR) should be greater than 0.70, the value of Average Variance Extracted (AVE) should be greater than 0.50 and the value of Composite Reliability (CR) should be greater than Average Variance Extracted (AVE). The values of CR and AVE of Working Condition = 0.878 & 0.507, Compensation = 0.888 & 0.571, Workload = 0.859 & 0.671, Work Life Balance = 0.840 & 0.568, Job Security = 0.899 & 0.641, Health & Safety = 0.887 & 0.613, Social Support & Work Place Relationship = 0.896 & 0.591, Training and Development facilities = 0.839 & 0.638 and Career Growth and Advancements = 0.888 & 0.726 are fulfilled the above mentioned criteria. Hence, the Convergent Validity is verified.

To prove Discriminant Validity of the scale is proved with the criteria of Average Variance Extracted (AVE) should be greater than Maximum Shared

Variance (MSV). Here this condition is fulfilled with the Average Variance Extracted (AVE) of all the constructs is greater than the value of Maximum Shared Variance (MSV). In depth, $0.507 > 0.024$ of Working Condition, $0.571 > 0.221$ of Compensation, $0.671 > 0.256$ of Workload, $0.568 > 0.249$ of Work Life Balance, $0.641 > 0.274$ of Job Security, $0.613 > 0.058$ of Health & Safety, $0.591 > 0.208$ of Social Support & Work Place Relationship, $0.638 > 0.274$ of Training and Development facilities and $0.726 > 0.263$ of Career Growth and Advancements are fulfilled the above specified conditions. Hence, the criteria for Discriminant Validity also verified. The model said to be valid for measuring the variable 'Factors of Quality of Work Life' of Sanitation Workers in Kerala.

MaxR(H) is evaluated the Maximum Reliability of the construct. Higher value indicate higher reliability, with value greater than or equal to 0.7 considered as acceptable. Here, all the constructs have the values of greater than 0.7, and hence accuracy and consistency of the measurement instrument (Factors of Quality of Work Life) is established.

With the above results of Exploratory and Confirmatory Factor Analysis, the measurement instrument is explored and confirmed to identify the 'Factors of Quality of Work Life' of Sanitation Workers in Kerala.

4.10.2 Validity and Reliability of Perception on Quality of Work Life (PQWL)

The scale is used to assess the dimension of '**Perception on Quality of Work Life' (PQWL)** of sanitation workers is validated in two stages by using Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). It is applied to evaluate the quality of the factor structure by statistically testing the significance of the overall model, as well as relationships among the sub-variables (dimensions) are Fairness and Equity (FE), Work Motivation (WM), and Expectation and Belief (EB) and constructs based on sample data.

4.10.2.1 Exploratory Factor Analysis (EFA) – Perception on Quality of Work Life (PQWL)

Exploratory Factor Analysis (EFA) using Principal Component Method (PCM) with Varimax Rotation is used for analyzing the factor structure and connection between 20 statements included in the scale for measuring the ‘Perception of Quality of Work Life’ (PQWL) of sanitation workers. The results are presented below.

Table 4.9

Result of KMO and Bartlett’s Test – Perception on Quality of Work Life (PQWL)

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.925
Approx. Chi-Square		2773.463
Bartlett's Test of Sphericity	df	190
	Sig.	.000

(Source- Primary data)

A Principal Component Analysis is executed on the 20 statements with Varimax Rotation. The Kaiser-Meyer-Olkin (KMO) measure proves the sample adequacy for the analysis, with the value of **0.925** which is above the recommended limit of **0.70**. Bartlett’s test is another pointer of the strength of the relationship among variables. Bartlett’s Test of Sphericity Chi-Square = **2773.463**, **p<0.01** indicates that the association between the items is sufficiently large for Principal Component Analysis (PCA).

An initial analysis is run to identify the Eigen Values for each component of the latent construct. Three components have Eigen values **greater than Kaiser’s criterion of 1** and combination explained **80.814 per cent** of the variance. The result of Exploratory Factor Analysis is presented below.

Table 4.10*Result of Exploratory Factor Analysis – Perception on Quality of Work Life (PQWL)*

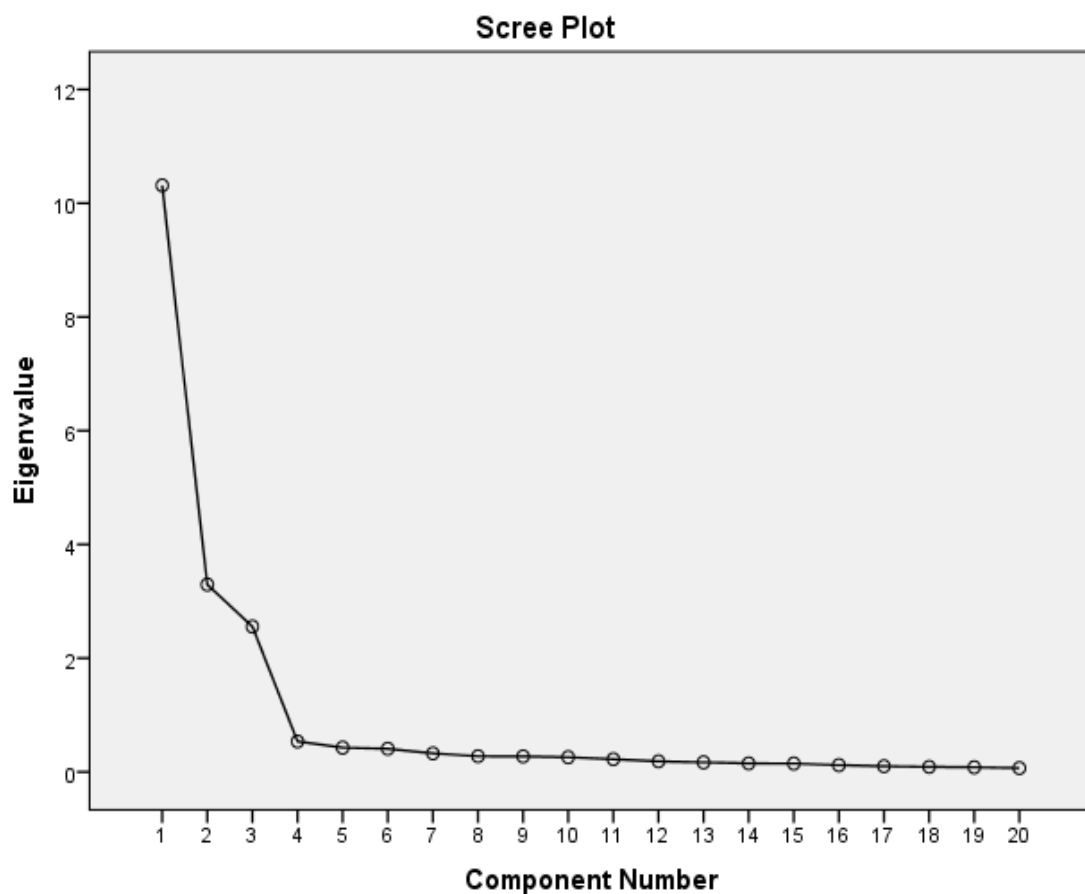
Constructs	Statements	Code	Factor Loadings	Eigen Value	Variance Explained	Cronbach's Alpha
Fairness and Equity (FE)	Fare distribution of work	FE1	.879	10.314	51.56%	0.937
	Supervisors are unbiased	FE2	.791			
	Fare recognition for Contributions	FE3	.836			
	Equitable distribution of equipment	FE4	.832			
	Equal respect and dignity for all workers	FE5	.845			
	Equal training and development opportunities	FE6	.781			
	Fare compensation and working hours	FE7	.808			
Work Motivation (WM)	Self-motivated	WM1	.859	3.293	16.46%	0.931
	Sufficient respect at work	WM2	.855			
	Passionate about public health	WM3	.902			
	Opportunity for socialization	WM4	.907			
Expectation and Believes (EB)	Expectation about working environment	EB1	.898	2.556	12.779%	0.976
	Expectation about remuneration	EB2	.891			
	Expectation about Work load	EB3	.890			
	Expectation about work life balance	EB4	.890			
	Believe about job security	EB5	.881			
	Health and safety are given sufficient importance by authorities	EB6	.889			
	Social support and work place relationship	EB7	.890			
	Expectation about training and development	EB8	.855			
	Believe about career growth and advancements	EB9	.843			
Total Variance Explained – 80.814%						

(Source- Primary data)

The result of Exploratory Factor Analysis (EFA) shows that the solution is based on **three components** and all items are loading on their own factors. The **three-factor solution** is explaining **80.814%** of variance of the total variance. A total of seven indicators are involved in first factor ‘Fairness and Equity’ (FE) which explaining over **51.56%** of variance, four indicators are involved in the second factor ‘Work Motivation’ (WM) which explaining over **16.46%** of variance and nine indicators are involved in the third factor ‘Expectation and Believes’ (EB) which explaining **12.779%** of variance of the total variance. In total, three- factor solution explaining over **80.814%** of variance of the total variance explained.

Figure 4.4

Scree-Plot of Exploratory Factor Analysis – Perception on Quality of Work Life (PQWL)



(Source- Primary data)

The Scree plot displays Eigen values on the y-axis, representing the amount of variance explained by the respective variable ‘factor of quality of work life’ and x-axis, providing the number of indicators of the variable. The elbow shape of the curve explains the significant explanation of the variance of each factor from the order of highest to lowest. Since the Eigen value is considered, three factors have the values of greater than 1. Hence, the solution explaining three factors for determining the proposed variable.

Construct Validity: -

The above table (Table – 4.10) shows all the factor loadings are above 0.40, and criteria of **Construct Validity** including both the **Discriminant Validity** (loading of at least 0.40, no cross-loadings of items above 0.40) and **Convergent Validity** (Eigen values of 1, loadings of at least 0.40, items that load on posited constructs) (Straub, D et al., 2004) The result of Exploratory Factor Analysis shows that the selected factors under the construct ‘**Perception on Quality of Work Life (PQWL)**’ have good level of validity.

Reliability: -

Reliability of the measurement scale is checked using **Cronbach’s Alpha Co-efficient**. An alpha value of 0.70 or above is considered to be a standard for representing strong internal consistency. Accordingly, the **Cronbach’s Alpha Reliability Co-efficient** values of all the constructs of the dimension of the study namely, Fairness and Equity (0.937), Work Motivation (0.931), and Expectation and Believes (0.976) are above 0.70, hence strong internal consistency is ensured and the instrument is reflected as highly reliable.

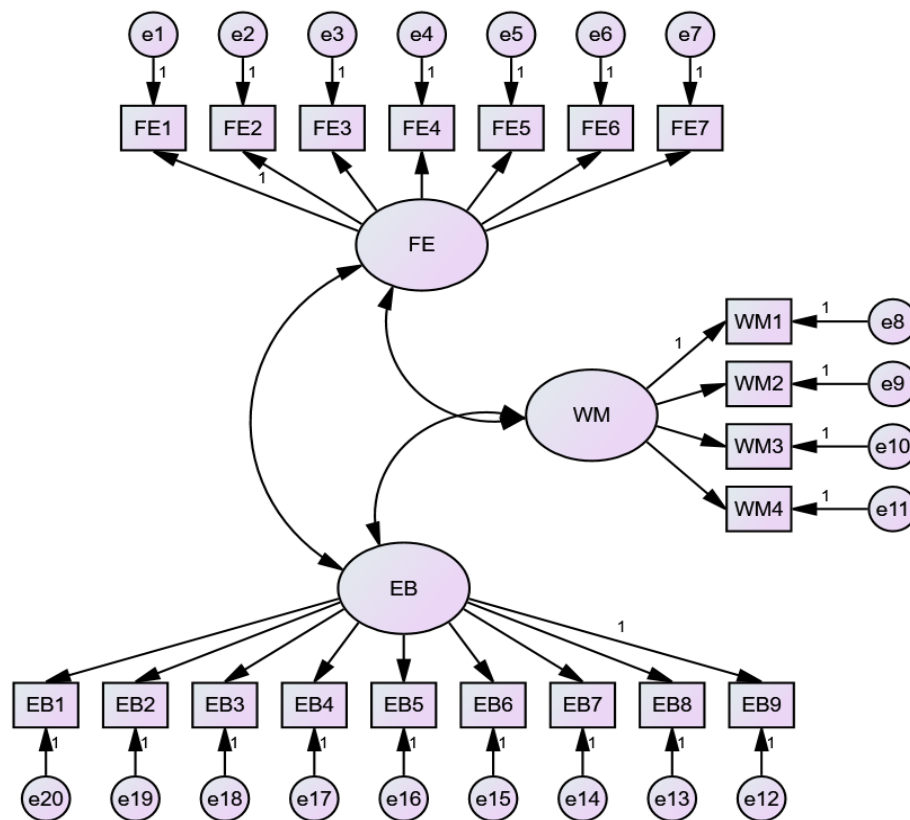
The next step is to conduct Confirmatory Factor Analysis (CFA) for the variable ‘Perception on Quality of Work Life’ (PQWL) and its constructs identified from Exploratory Factor Analysis (EFA) to evaluate the underlying structure of them.

4.10.2.2 Confirmatory Factor Analysis – Perception on Quality of Work Life (PQWL)

A Confirmatory Factor Analysis (First Order CFA) is employed to validate the measurement scale of ‘Perception on Quality of Work Life (PQWL)’ of Sanitation workers in Kerala. It explains the underlying structure of the constructs within the variables of the study by taking proposed model, measurement model, fit indices and validity & reliability statistics. It verifies the factor structure of the measurement scale with the help of pre-structured theoretical model and confirming the relationship between latent constructs and observed variables. The best fitting of the model is examined with the help of different indices and validity statistics is measured in the light of composite reliability, average variance explained and maximum shared variance of inter constructs of each dimension.

Figure 4.5

Proposed Model – Perception on Quality of Work Life (PQWL)



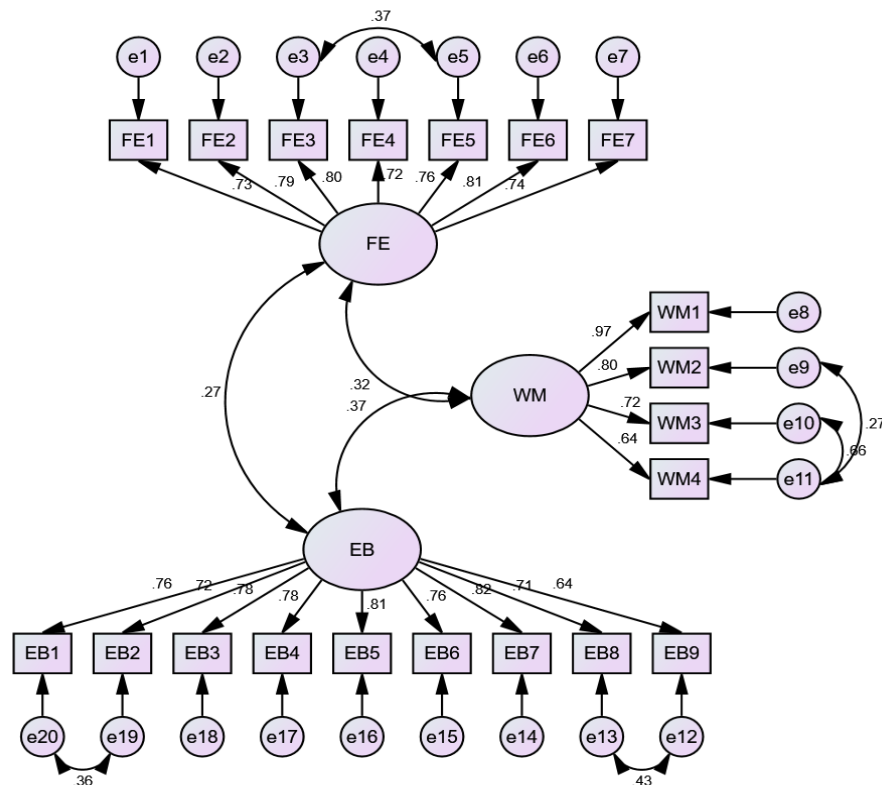
(Source- Primary data)

The theoretical model for representing the perception on quality of work life explored three constructs with 20 statements. All the constructs have minimum of three observed variables. The inter-relationship among the constructs also measured to confirm the discriminant validity of the scale. In this style, the measurement model is explained with the values of factor loading of observed variable and relationship of inter constructs. According to the values, the validity and reliability of the measurement model is confirmed by scrutinizing the fitness of the model for representing the theoretical perspective. According to the theory, the perception on quality of work life of sanitation workers is measured by explaining the three constructs. From the analysis result itself, it is clearly defined the perception level on quality of work life.

Accordingly, measurement model, fitness of the model, path estimates, validity and reliability statistics are presented below.

Figure 4.6

Measurement Model – Perception on Quality of Work Life (PQWL)



(Source- Primary data)

The measurement model for representing the scale of ‘perception on quality of work life’ of sanitation workers in Kerala implies the significant relationship between observed variables (indicators) and latent constructs (factors). Here, there are three latent constructs are identified from the 20 observed variables. All the factor loadings show the values of greater than 0.70, which explains the strong relationship of each indicator to the corresponding factor variable. More than that, there exists good relationship (covariance) among all the factors of respective variable. Hence the factor structure of the measurement model for measuring ‘perception on quality of work life’ of sanitation workers is sufficient to explain the quality of the model. Accordingly, the fitness of the model also presented using different model fitness indices. Furthermore, the validity and reliability requirements also obtained from the respective result of the model. These results are presented below.

Table 4.11

Model Fit Indices – Perception on Quality of Work Life (PQWL)

Indices	Value Obtained	Recommended Values of Good Fit	Recommended Values of Acceptable Fit
Normed chi-square (CMIN/df)	2.624	≤ 3	≤ 5
Root Mean Square Residuals (RMR)	0.046	≤ 0.05	≤ 0.08
Comparative Fit Index (CFI)	0.947	≥ 0.90	≥ 0.80
Goodness of Fit Index (GFI)	0.908	≥ 0.90	≥ 0.80
Incremental Fit Index (IFI)	0.947	≥ 0.90	≥ 0.80
Tucker Fit Index (TLI)	0.937	≥ 0.90	≥ 0.80
Normed Fit Index (NFI)	0.917	≥ 0.90	≥ 0.80
Relative Fit Index (RFI)	0.903	≥ 0.90	≥ 0.80
Root Mean Square Error of Approximation (RMSEA)	0.065	≤ 0.08	$= 0.08$

(Source- Primary data)

The fitness of the above specified measurement model is evaluated with the help of different model fit indices. The CMIN/df of 2.624 is less than 3, which indicating the better fitness. RMSEA measure the appropriateness of the model with value of 0.065 (less than 0.08). CFI, IFI, TLI, NFI and RFI explain the baseline

comparison of the model with good fit indices of values of greater than 0.90. RMR represents the average difference between observed and predicated correlation of the model with value of 0.046, which is within the limit of the good fitness. GFI measures the proportion of the variance explained with the values of 0.908, which is in the limit of good fitness of the model. Overall, the measurement model for measuring the proposed variable is acceptable with good fit indices.

According to the CFA model, the validity of the measurement scale ‘perception on quality of work life’ is identified by examining the Composite Reliability, Average Variance Extracted and Maximum Shared Variance extracted from the values of factor loadings of observed variables to the latent constructs.

Table 4.12

Validity and Reliability Result of Perception on Quality of Work Life (PQWL)

Constructs	Statements	Factor Loadings	CR $CR = \frac{(\sum \lambda_i)^2}{(\sum \lambda_i)^2 + \sum Var(\varepsilon_i)}$	AVE $AVE = \frac{\sum_{i=1}^n \lambda_i^2}{n}$	MSV = square of highest correlation b/w latent constructs	MaxR(H)
Fairness and Equity (FE)	FE1	.729	0.908	0.585	0.101	0.910
	FE2	.792				
	FE3	.797				
	FE4	.716				
	FE5	.764				
	FE6	.813				
	FE7	.735				
Work Motivation (WM)	WM1	.968	0.866	0.624	0.140	0.948
	WM2	.801				
	WM3	.716				
	WM4	.636				
Expectation and Believes (EB)	EB1	.756	0.922	0.571	0.140	0.927
	EB2	.724				
	EB3	.783				
	EB4	.777				
	EB5	.810				
	EB6	.765				
	EB7	.820				
	EB8	.710				
	EB9	.636				

(Source- Primary data)

Table 4.12 explains the Standardized Factor Loadings, Composite Reliability (CR), Average Variance Extracted (AVE) and Maximum Shared Variance (MSV) of each construct used to measure the variable 'Perception on Quality of Work Life' of Sanitation Workers in Kerala. Here all the values of Standardized Factor Loadings are above 0.60, which shows all the observed variables are satisfactorily contributes to the latent constructs.

To demonstrate the Convergent Validity, three conditions need to fulfill namely, the value of Composite Reliability (CR) should be greater than 0.70, the value of Average Variance Extracted (AVE) should be greater than 0.50 and the value of Composite Reliability (CR) should be greater than Average Variance Extracted (AVE). Here, the values of CR and AVE of Fairness and Equity = 0.908 & 0.585, Work Motivation = 0.866 & 0.624, and Expectation and Believes = 0.922& 0.571 are fulfilled the above mentioned criteria. Hence, the Convergent Validity is verified.

The Discriminant Validity of the scale is proved with the criteria of Average Variance Extracted (AVE) should be greater than Maximum Shared Variance (MSV). Here this condition is fulfilled with the Average Variance Extracted (AVE) of all the constructs is greater than the value of Maximum Shared Variance (MSV). In depth, $0.585 > 0.101$ of Fairness and Equity, $0.624 > 0.140$ of Work Motivation and $0.571 > 0.140$ of Expectation and Believes are fulfilled the above specified conditions. Hence, the criteria for Discriminant Validity also verified. The model said to be valid for measuring the variable 'Perception on Quality of Work Life' of Sanitation Workers in Kerala.

Further, MaxR(H) is evaluated the Maximum Reliability of the construct. Higher value indicate higher reliability, with value greater than or equal to 0.7 considered as acceptable. Here, all the constructs have the values of greater than 0.7, and hence accuracy and consistency of the measurement instrument (Perception on Quality of Work Life) is established.

With the above results of Exploratory and Confirmatory Factor Analysis, the measurement instrument is explored and confirmed to identify the 'Perception on Quality of Work Life' of Sanitation Workers in Kerala.

4.10.3 Validity and Reliability Statistics of Job Satisfaction (JS)

The scale is applied to explore the variable '**Job Satisfaction**' (JS) of sanitation workers is validated in two stages namely, Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). It is employed to evaluate the quality of the factor structure by statistically testing the significance of the proposed model, as well as relationships among the constructs like Job Attributes (JA) and Organizational Dynamics (OD) and the variable based on sample data.

4.10.3.1 Exploratory Factor Analysis (EFA) – Job Satisfaction (JS)

Exploratory Factor Analysis (EFA) using Principal Component Method (PCM) with Varimax Rotation is used for analyzing the factor structure and correlation between 13 indicators included in the scale for measuring the '**Job Satisfaction**' (JS) of sanitation workers. The results are presented below.

Table 4.13

Result of KMO and Bartlett's Test – Job Satisfaction (JS)

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.920
Approx. Chi-Square		2968.888
Bartlett's Test of Sphericity	df	78
	Sig.	.000

(Source- Primary data)

A Principal Component Analysis is executed in 13 statements with Varimax Rotation. The Kaiser-Meyer-Olkin (KMO) confirms the sample adequacy for the analysis, with the value of 0.920 which is above the recommended limit of 0.70. Bartlett's test is the indicator of the strength of the association among variables.

Bartlett's Test of Sphericity Chi-Square = 2968.888, $p < 0.01$ shows that the association between items is sufficiently large for Principal Component Analysis (PCA).

An initial analysis is run to obtain Eigen Values for each construct in the data. Two constructs have Eigen value **greater than Kaiser's criterion of 1** and in combination elucidated **63.793 per cent** of the variance. The result of Exploratory Factor Analysis is presented below.

Table 4.14

Result of Exploratory Factor Analysis – Job Satisfaction (JS)

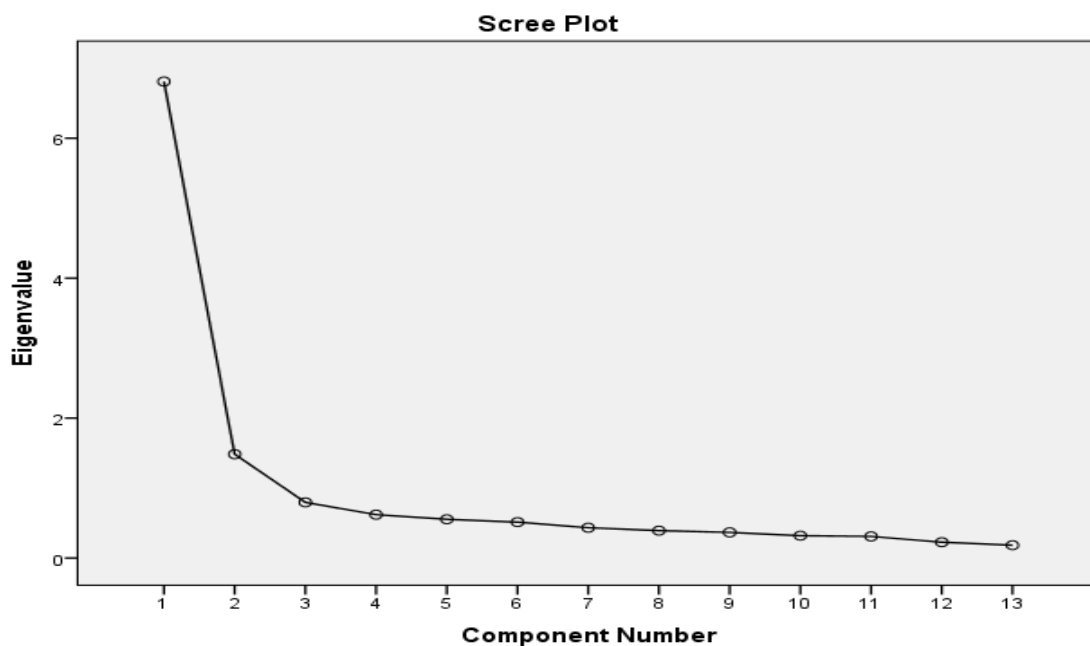
Construct	Statements	Code	Factor Loadings	Eigen Value	Variance Explained	Cronbach's Alpha
Job Attributes (JA)	Working conditions	JA1	.785	6.809	52.381%	0.894
	compensation	JA2	.746			
	Motivation obtained	JA3	.765			
	Job security	JA4	.812			
	Job enlargements	JA5	.686			
	Possibility for promotion	JA6	.761			
Organizational Dynamics (OD)	Work life balance	OD1	.705	1.484	11.413%	0.896
	Relations with co workers	OD2	.724			
	Quality of supervision	OD3	.744			
	Recognition	OD4	.645			
	Involvement in decision making	OD5	.807			
	Facility to express and share concerns of workers	OD6	.807			
	Approaches of trade unions	OD7	.711			
Total Variance Explained – 63.793%						

(Source- Primary data)

The result of Exploratory Factor Analysis (EFA) shows that the solution is based on **two constructs** and all items are loading on their own factors. The **two-factor solution** is clarifying **63.793%** of variance of the total variance. A total of six indicators are included in first factor ‘Job Attributes’ (JA) which explaining over **52.381%** of variance, seven indicators are included in the second factor ‘Organizational Dynamics’ (OD) which explaining over **11.413%** of the total variance. In total, two- factor solution explaining over **63.793%** of variance of the total variance explained. (NB: - Three indicators are removed in the measurement of job satisfaction due to cross loading with factor loading of less than 0.40).

Figure 4.7

Scree-Plot of Exploratory Factor Analysis – Job Satisfaction (JS)



(Source- Primary data)

The Scree plot displays Eigen values on the y-axis, representing the amount of variance explained by the respective variable ‘job satisfaction’ and x-axis, providing the number of indicators of the variable. The elbow shape of the curve explains the significant explanation of the variance of each factor from the order of highest to lowest. Since the Eigen value is considered, two factors/ constructs have

the values of greater than 1. Hence, the solution explaining two factors/ constructs for determining the proposed variable.

Construct Validity: -

The above table (Table – 14) displays all the factor loadings are above 0.40, and criteria of **Construct Validity** including both the **Discriminant Validity** (loading of at least 0.40, no cross-loadings of items above 0.40) and **Convergent Validity** (Eigen values of 1, loadings of at least 0.40, items that load on posited constructs) (Straub et al., 2004). The result of Exploratory Factor Analysis shows that the selected factors under the construct '**Job Satisfaction**' (JS) has good level of validity.

Reliability: -

Reliability of the measurement scale is checked using **Cronbach's Alpha Co-efficient**. An alpha value of 0.70 or above is considered to be a standard for representing strong internal consistency. Consequently, the **Cronbach's Alpha Reliability Co-efficient** values of all the constructs of the dimension of the study namely, Job Attributes (0.894), and Organizational Dynamics (0.896) are above 0.70, hence strong internal consistency is ensured and the instrument is revealed as highly reliable.

The next step is to conduct Confirmatory Factor Analysis (CFA) for the variable 'Job Satisfaction' (JS) and its constructs identified from Exploratory Factor Analysis (EFA) to evaluate the underlying structure of them.

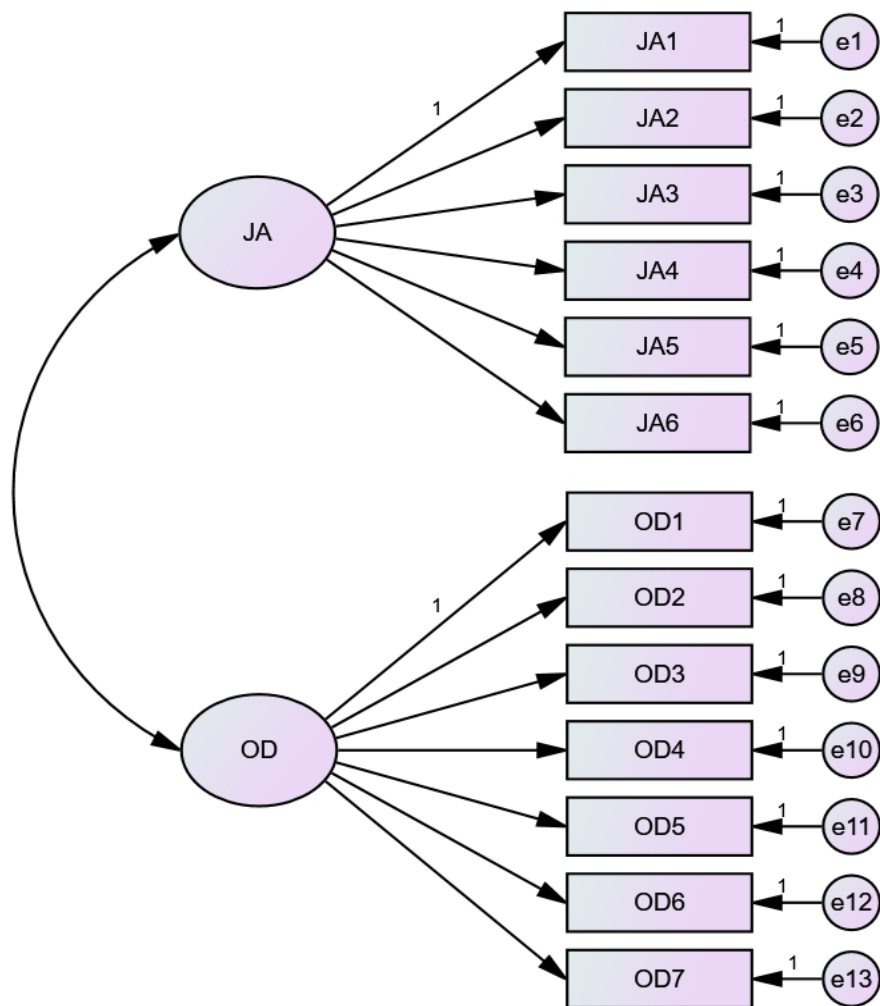
4.10.3.2 Confirmatory Factor Analysis – Job Satisfaction (JS)

A Confirmatory Factor Analysis (First Order CFA) is applied to validate the measurement scale of 'Job Satisfaction' (JS) of Sanitation workers in Kerala. It explains the underlying structure of the constructs within the variables of the study by taking proposed model, measurement model, fit indices and validity & reliability statistics. It verifies the factor structure of the measurement scale with the help of pre-structured theoretical model and confirming the relationship between latent constructs and observed variables. The best fitting of the model is examined with the

help of different indices and validity statistics is measured in the light of composite reliability, average variance explained and maximum shared variance of inter constructs of each dimension.

Figure 4.8

Proposed Model – Job Satisfaction (JS)



(Source- Primary data)

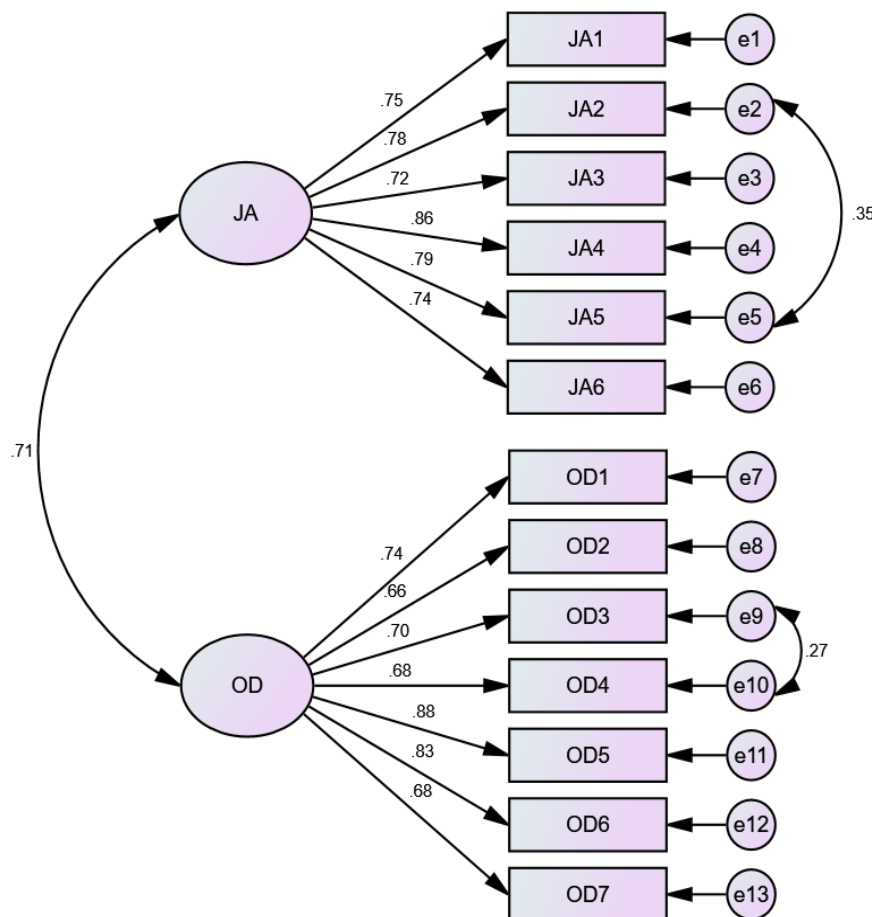
The theoretical model for representing the job satisfaction of sanitation workers by using two constructs with 13 statements. All the constructs have minimum of three observed variables. The inter-relationship among the constructs also measured to confirm the discriminant validity of the scale. In this style, the measurement model is explained with the values of factor loading of observed

variable and relationship of inter constructs. According to the values, the validity and reliability of the measurement model is confirmed by scrutinizing the fitness of the model for representing the theoretical perspective. According to the theory, job satisfaction of sanitation workers is measured by explaining the two constructs. From the analysis result itself, it is clearly defined the level of job satisfaction.

Accordingly, measurement model, fitness of the model, path estimates, validity and reliability statistics are presented below.

Figure 4.9

Measurement Model – Job Satisfaction (JS)



(Source- Primary data)

The measurement model for representing the scale of 'job satisfaction' of sanitation workers in Kerala implies the significant relationship between observed

variables (indicators) and latent constructs (factors). Here, there are two latent constructs are identified from the 13 observed variables. All the factor loadings show the values of greater than 0.70, which explains the strong relationship of each indicator to the corresponding factor variable. There also exists good relationship (covariance) among all the factors of respective variable. Hence the factor structure of the measurement model for measuring ‘job satisfaction’ of sanitation workers is sufficient to explain the quality of the model. Accordingly, the fitness of the model also presented using different model fitness indices. Furthermore, the validity and reliability requirements also obtained from the respective result of the model. These results are presented below.

Table 4.15

Model Fit Indices – Job Satisfaction (JS)

Indices	Value Obtained	Recommended Values of Good Fit	Recommended Values of Acceptable Fit
Normed chi-square (CMIN/df)	3.507	≤ 3	≤ 5
Root Mean Square Residuals (RMR)	0.032	≤ 0.05	≤ 0.08
Comparative Fit Index (CFI)	0.928	≥ 0.90	≥ 0.80
Goodness of Fit Index (GFI)	0.919	≥ 0.90	≥ 0.80
Incremental Fit Index (IFI)	0.909	≥ 0.90	≥ 0.80
Tucker Fit Index (TLI)	0.947	≥ 0.90	≥ 0.80
Normed Fit Index (NFI)	0.933	≥ 0.90	≥ 0.80
Relative Fit Index (RFI)	0.947	≥ 0.90	≥ 0.80
Root Mean Square Error of Approximation (RMSEA)	0.080	≤ 0.08	$= 0.08$

(Source- Primary data)

The fitness of the above specified measurement model is evaluated with the help of different model fit indices. The CMIN/df of 3.507 is less than 5, which indicating the acceptable fitness. RMSEA measure the appropriateness of the model

with value of 0.080 (equal to 0.08). CFI, IFI, TLI, NFI and RFI explain the baseline comparison of the model with good fit indices of values of greater than 0.90. RMR represents the average difference between observed and predicated correlation of the model with value of 0.032, which is within the limit of the good fitness. GFI measures the proportion of the variance explained with the values of 0.919, which is in the limit of good fitness of the model. Overall, the measurement model for measuring the proposed variable is acceptable with good fit indices.

According to the CFA model, the validity of the measurement scale ‘job satisfaction’ is identified by examining the Composite Reliability, Average Variance Extracted and Maximum Shared Variance extracted from the values of factor loadings of observed variables to the latent constructs.

Table 4.16

Validity and Reliability Result of Job Satisfaction (JS)

Constructs	Statements	Factor Loadings	CR $CR = \frac{(\sum \lambda_i)^2}{(\sum \lambda_i)^2 + \sum Var(\varepsilon_i)}$	AVE $AVE = \frac{\sum_{i=1}^n \lambda_i^2}{n}$	MSV = square of highest correlation b/w latent constructs	MaxR(H)
Job Attributes (JA)	JA1	.737	0.895	0.551	0.507	0.912
	JA2	.664				
	JA3	.700				
	JA4	.682				
	JA5	.881				
	JA6	.829				
Organizational Dynamics (OD)	OD1	.750	0.899	0.598	0.507	0.905
	OD2	.780				
	OD3	.721				
	OD4	.857				
	OD5	.786				
	OD6	.738				
	OD7	.675				

(Source- Primary data)

Table 4.16 clarifies the Standardized Factor Loadings, Composite Reliability (CR), Average Variance Extracted (AVE) and Maximum Shared Variance (MSV) of each construct used to measure the variable 'Job Satisfaction' of Sanitation Workers in Kerala. Here all the values of Standardized Factor Loadings are above 0.60, which shows all the observed variables are satisfactorily contributes to the latent constructs.

In order to demonstrate the Convergent Validity, three conditions need to fulfill namely, the value of Composite Reliability (CR) should be greater than 0.70, the value of Average Variance Extracted (AVE) should be greater than 0.50 and the value of Composite Reliability (CR) should be greater than Average Variance Extracted (AVE). Here, the values of CR and AVE of Job Attributes = 0.895 & 0.551 and Organizational Dynamics = 0.899 & 0.598 are fulfilled the above mentioned criteria. Hence, the Convergent Validity is verified.

The Discriminant Validity of the scale is proved with the criteria of Average Variance Extracted (AVE) should be greater than Maximum Shared Variance (MSV). Here this condition is fulfilled with the Average Variance Extracted (AVE) of all the constructs is greater than the value of Maximum Shared Variance (MSV). In depth, $0.551 > 0.507$ of Job Attributes and $0.598 > 0.507$ of Organizational Dynamics are fulfilled the above specified conditions. Hence, the criteria for Discriminant Validity also verified. The model said to be valid for measuring the variable 'Job Satisfaction' of Sanitation Workers in Kerala.

Further, MaxR(H) is evaluated the Maximum Reliability of the construct. Higher value indicate higher reliability, with value greater than or equal to 0.7 considered as acceptable. Here, all the constructs have the values of greater than 0.7, and hence accuracy and consistency of the measurement instrument (Job Satisfaction) is established.

With the above results of Exploratory and Confirmatory Factor Analysis, the measurement instrument is explored and confirmed to identify the 'Job Satisfaction' of Sanitation Workers in Kerala.

4.10.4 Validity and Reliability Statistics of Challenges during calamities (CH)

The scale is used to measure the dimension of '**Challenges**' (CH) faced by sanitation workers is validated by using Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). It is used to measure the quality of the factor structure by statistically checking the significance of the overall model, as well as associations between items and scales based on sample data. The sub variables are, Operational Challenges (OC) and Personal Challenges (PC).

4.10.4.1 Exploratory Factor Analysis (EFA) – Challenges during calamities (CH)

Exploratory Factor Analysis (EFA) using Principal Component Method (PCM) using Varimax Rotation is applied for analyzing the factor structure and correlation between 8 statements included in the scale for measuring the **Challenges (CH)** faced by sanitation workers. The results are presented below.

Table 4.17

Result of KMO and Bartlett's Test – Challenges (CH)

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.864
	Approx. Chi-Square	1903.454
Bartlett's Test of Sphericity	df	28
	Sig.	.000

(Source- Primary data)

A Principal Component Analysis is used for the 8 statements Varimax Rotation. The Kaiser-Meyer-Olkin (KMO) validates the sample adequacy for the analysis, with the value of 0.864 which is above the recommended limit of 0.70. Bartlett's test is the indicator of the strength of the association among variables. Bartlett's Test of Sphericity Chi-Square = 1903.454, $p < 0.01$ shows that the association between the indicators is sufficiently large for Principal Component Analysis (PCA).

An initial analysis is run to obtain Eigen Values for each construct in the data. Two construct have Eigen value **greater than Kaiser's criterion of 1** and in combination clarified **74.860 per cent** of the variance. The result of Exploratory Factor Analysis is presented below.

Table 4.18

Result of Exploratory Factor Analysis – Challenges during calamities (CH)

Constructs	Statements	Code	Factor Loadings	Eigen Value	Variance Explained	Cronbach's Alpha
Operational Challenges (OC)	Heavy work load during calamities affects quality standards	CH1	.860			
	Dealing with hazardous materials creates significant health risks	CH2	.832			
	Communication breakdown effects on effectiveness	CH3	.869	4.891	61.141%	0.866
	Poor sanitation infrastructure during disasters hinders hygiene maintenance	CH4	.811			
Personal Challenges (PC)	Emotional stress reduces workers' mental wellbeing and effectiveness.	CH5	.872			
	Financial constrains at the time of calamities	CH6	.838	1.097	13.718%	0.905
	Absence of training leave workers ill	CH7	.877			
	Discrimination and stigmatization	CH8	.866			

Total Variance Explained – 74.860%

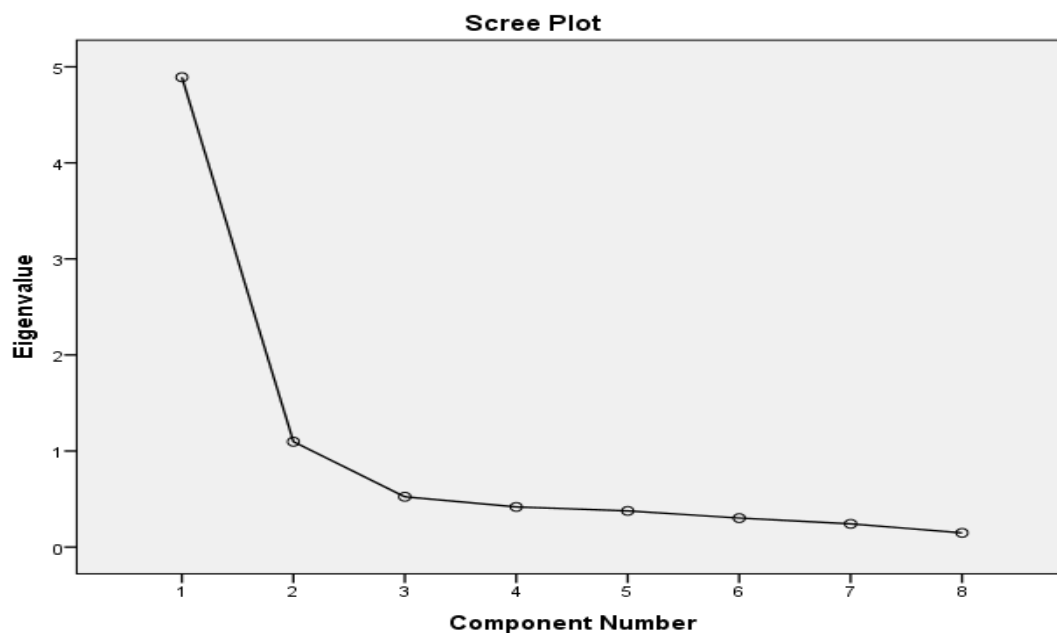
(Source- Primary data)

The result of Exploratory Factor Analysis (EFA) illustrates that the solution is based on **two constructs** and all items are loading on their own factors. The **two-factor solution** is elucidating **74.860%** of variance of the total variance. A total of

four indicators are involved in first factor ‘Operational Challenges’ (OC) which elucidating over **61.141%** of variance and four indicators are involved in the second factor ‘Personal Challenges’ (PC) which explaining over **13.718%** of the total variance. In total, two- factor solution clarifying over **74.860%** of variance of the total variance explained. (NB: - Two indicators are removed from the measurement of challenges due to cross loading with factor loading of less than 0.40).

Figure 4.10

Scree-Plot of Exploratory Factor Analysis – Challenges (CH)



(Source- Primary data)

The Scree plot displays Eigen values on the y-axis, representing the amount of variance explained by the respective variable ‘Challenges’ and x-axis, providing the number of indicators of the variable. The elbow shape of the curve explains the significant explanation of the variance of each factor from the order of highest to lowest. Since the Eigen value is considered, two factors/ constructs have the values of greater than 1. Hence, the solution explaining two factors/ constructs for determining the proposed variable.

Construct Validity: -

The above table 4.18 displays all the factor loadings are above 0.40, and criteria of **Construct Validity** including both the **Discriminant Validity** (loading of at least 0.40, no cross-loadings of items above 0.40) and **Convergent Validity** (Eigen values of 1, loadings of at least 0.40, items that load on posited constructs) (Straub, D et al., 2004) The result of Exploratory Factor Analysis shows that the selected factors under the construct '**Challenges**' (CH) has good level of validity.

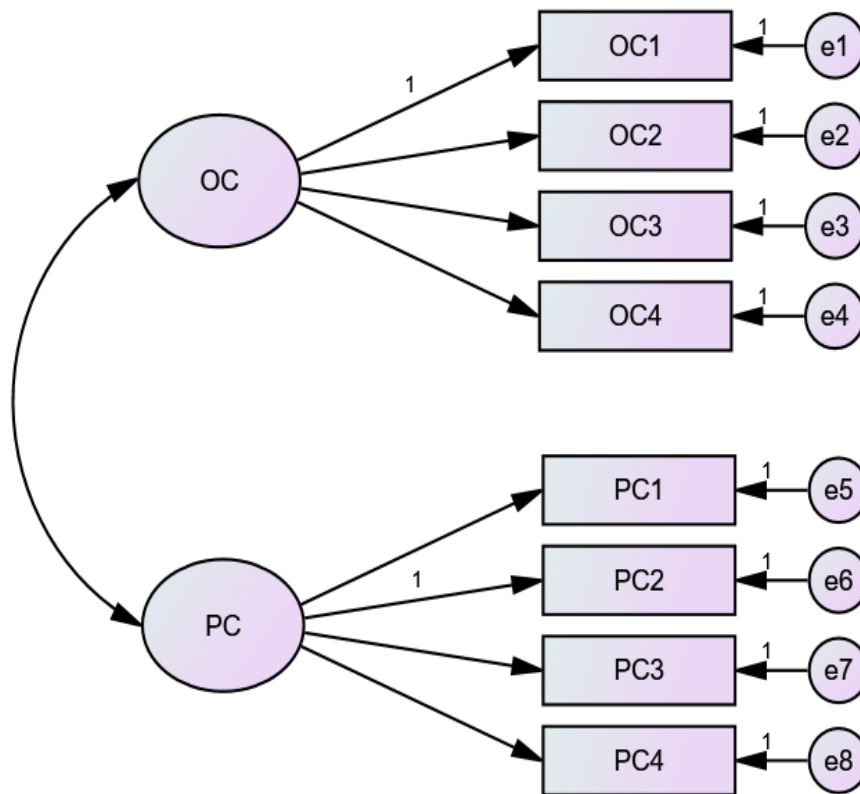
Reliability: -

The reliability of the measurement scale is assessed using Cronbach's alpha coefficient. A value of 0.70 or higher is generally regarded as indicating strong internal consistency. Consequently, the **Cronbach's Alpha Reliability Co-efficient** values of all the constructs of the dimension of the study namely, Operational Challenges (0.866), and Personal Challenges (0.905) are above 0.70, hence strong internal consistency is ensured and the instrument is revealed as highly reliable.

The next step is to conduct Confirmatory Factor Analysis (CFA) for the variable 'Challenges' (CH) and its constructs identified from Exploratory Factor Analysis (EFA) to evaluate the underlying structure of them.

4.10.4.2 Confirmatory Factor Analysis – Challenges (CH)

A Confirmatory Factor Analysis (First Order CFA) is used to validate the measurement scale of 'Challenges' (CH) faced by Sanitation workers in Kerala. It explains the underlying structure of the constructs within the variables of the study by taking proposed model, measurement model, fit indices and validity & reliability statistics. It verifies the factor structure of the measurement scale with the help of pre-structured theoretical model and confirming the relationship between latent constructs and observed variables. The best fitting of the model is examined with the help of different indices and validity statistics is measured in the light of composite reliability, average variance explained and maximum shared variance of inter constructs of each dimension.

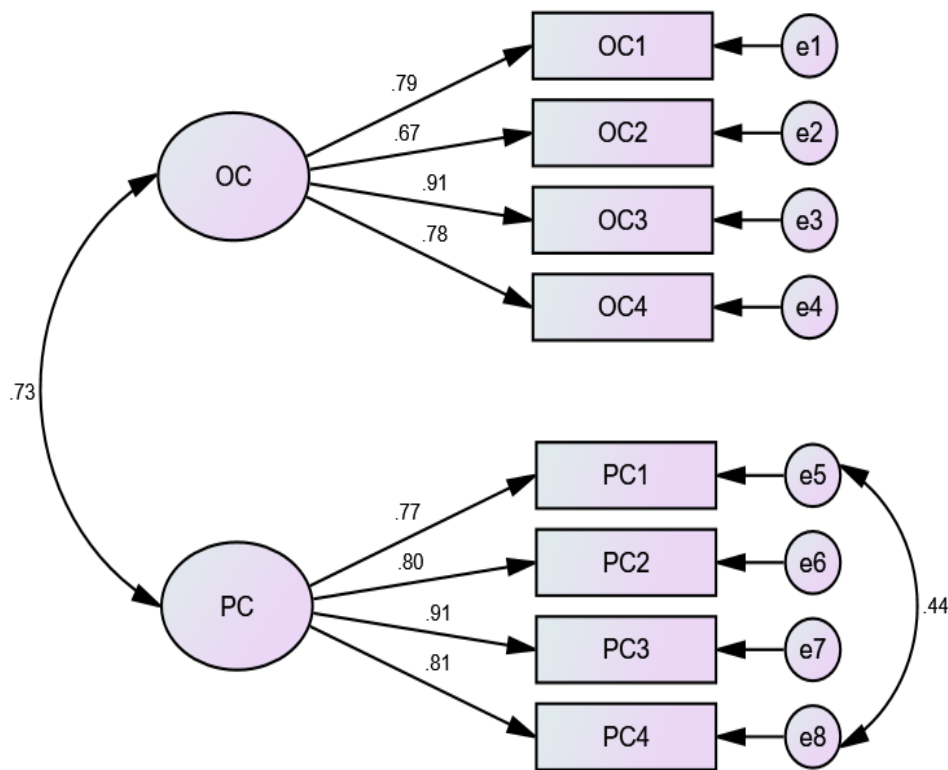
Figure 4.11*Proposed Model – Challenges (CH)**(Source- Primary data)*

The theoretical model for representing the challenges faced by sanitation workers by using two constructs with 8 statements. All the constructs have minimum of three observed variables. The inter-relationship among the constructs is measured to confirm the discriminant validity of the scale. In this style, the measurement model is explained with the values of factor loading of observed variable and relationship of inter constructs. According to the values, the validity and reliability of the measurement model is confirmed by scrutinizing the fitness of the model for representing the theoretical perspective. According to the theory, challenges faced by sanitation workers are measured by explaining the two constructs. From the analysis result itself, it is clearly defined the level of challenges faced by them.

Accordingly, measurement model, fitness of the model, path estimates, validity and reliability statistics are presented below.

Figure 4.12

Measurement Model – Challenges (CH)



(Source- Primary data)

The measurement model for representing the scale of 'challenges' faced by sanitation workers in Kerala implies the significant relationship between observed variables (indicators) and latent constructs (factors). Here, there are two latent constructs are identified from the 8 observed variables. All the factor loadings show the values of greater than 0.70, which explains the strong relationship of each indicator to the corresponding factor variable. More than that, there exists good relationship (covariance) among all the factors of respective variable. Hence the factor structure of the measurement model for measuring 'challenges' faced by sanitation workers is sufficient to explain the quality of the model. Accordingly, the fitness of the model also presented using different model fitness indices.

Furthermore, the validity and reliability requirements also obtained from the respective result of the model. These results are presented below.

Table 4.19

Model Fit Indices – Challenges (CH)

Indices	Value Obtained	Recommended Values of Good Fit	Recommended Values of Acceptable Fit
Normed chi-square (CMIN/df)	3.374	≤ 3	≤ 5
Root Mean Square Residuals (RMR)	0.025	≤ 0.05	≤ 0.08
Comparative Fit Index (CFI)	0.977	≥ 0.90	≥ 0.80
Goodness of Fit Index (GFI)	0.963	≥ 0.90	≥ 0.80
Incremental Fit Index (IFI)	0.978	≥ 0.90	≥ 0.80
Tucker Fit Index (TLI)	0.965	≥ 0.90	≥ 0.80
Normed Fit Index (NFI)	0.933	≥ 0.90	≥ 0.80
Relative Fit Index (RFI)	0.947	≥ 0.90	≥ 0.80
Root Mean Square Error of Approximation (RMSEA)	0.080	≤ 0.08	$= 0.08$

(Source- Primary data)

The fitness of the above specified measurement model is evaluated with the help of different model fit indices. The CMIN/df of 3.374 is less than 5, which indicating the acceptable fitness. RMSEA measure the appropriateness of the model with value of 0.080 (equal to 0.08). CFI, IFI, TLI, NFI and RFI explain the baseline comparison of the model with good fit indices of values of greater than 0.90. RMR represents the average difference between observed and predicated correlation of the model with value of 0.025, which is within the limit of the good fitness. GFI measures the proportion of the variance explained with the values of 0.963, which is in the limit of good fitness of the model. Overall, the measurement model for measuring the proposed variable is acceptable with good fit indices.

According to the CFA model, the validity of the measurement scale ‘challenges’ is identified by examining the Composite Reliability, Average Variance Extracted and Maximum Shared Variance extracted from the values of factor loadings of observed variables to the latent constructs.

Table 4.20

Validity and Reliability Result of Challenges (CH)

Constructs	Statements	Factor Loadings	CR $CR = \frac{(\sum \lambda_i)^2}{(\sum \lambda_i)^2 + \sum Var(\varepsilon_i)}$	AVE $AVE = \frac{\sum_{i=1}^n \lambda_i^2}{n}$	MSV = square of highest correlation b/w latent constructs	MaxR(H)
Operational Challenges (OC)	OC1	.791	0.869	0.626	0.532	0.897
	OC2	.671				
	OC3	.907				
	OC4	.777				
Personal Challenges (PC)	PC1	.766	0.893	0.676	0.532	0.906
	PC2	.797				
	PC3	.906				
	PC4	.813				

(Source- Primary data)

Table 4.20 presents the standardized factor loadings, composite reliability (CR), average variance extracted (AVE), and maximum shared variance (MSV) for each construct used to measure the variable “Challenges” faced by sanitation workers in Kerala. All standardized factor loadings exceed 0.60, indicating that the observed variables adequately contribute to the latent constructs.

To establish convergent validity, three conditions must be satisfied: the composite reliability (CR) should exceed 0.70, the average variance extracted (AVE) should be greater than 0.50, and the CR value should be higher than the AVE. Here,

the values of CR and AVE of Operational Challenges = 0.869 & 0.626 and Personal Challenges = 0.893 & 0.893 are fulfilled the above mentioned criteria. Hence, the Convergent Validity is verified.

Discriminant validity is established when the average variance extracted (AVE) is greater than the maximum shared variance (MSV). In this case, the condition is satisfied, as the AVE of all constructs exceeds their respective MSV values. In depth, $0.626 > 0.532$ of Operational Challenges and $0.676 > 0.532$ of Personal Challenges are fulfilled the above specified conditions. Hence, the criteria for Discriminant Validity also verified. The model said to be valid for measuring the variable 'Challenges' faced by Sanitation Workers in Kerala.

Further, MaxR(H) is evaluated the Maximum Reliability of the construct. Higher value indicate higher reliability, with value greater than or equal to 0.7 considered as acceptable. Here, all the constructs have the values of greater than 0.7, and hence accuracy and consistency of the measurement instrument (Challenges) is established.

With the above results of Exploratory and Confirmatory Factor Analysis, the measurement instrument is explored and confirmed to identify the 'Challenges' faced by Sanitation Workers in Kerala.

4.11 Test of Normality

Normality statistics is used to identify whether the data is normally distributed or not. To test the normality of data, One Sample Kolmogorov- Smirnov (One sample KS) test and Shapiro Wilk test are applied. As the 'p' values are less than 0.05 the data is not normally distributed, henceforth it is crucial to test the Skewness and Kurtosis to check whether the deviation is problematic or not. In order to verify the deviation, the values of Skewness and Kurtosis should be within the range of ± 1 . (Joseph F. Hair et al., 2010). The results regarding different dimensions (Factors of quality of work life, Perception, Satisfaction and Challenges) used for measuring Quality of Work Life of Sanitation Workers in Kerala are presented below.

Table 4.21*Normality Result*

Variables	Skewness	S. E.	Kurtosis	S. E.
Factors of Quality of Work life	-.528	.125	.100	.250
Perception	.679	.125	.527	.250
Satisfaction	-.508	.125	.065	.250
Challenges	.422	.128	-.149	.256

(Source- Primary data)

The above table reveals the particulars concerning the values of Skewness and Kurtosis of different dimensions used for measuring Quality of Work Life of Sanitation Workers in Kerala. Consequently, the values of Skewness and Kurtosis come under the required range of ± 1 . Hence, the projected assumption is satisfied for all the dimensions like, Factors of Quality of Work life, Perception, Satisfaction and Challenges. Therefore, the normality is assumed and the researcher conducts Parametric Test for the analysis of primary data.

4.12 Tools used for data analysis

Different mathematical and statistical tools techniques are used for analyzing primary data. Various tools used for analysis are listed below

4.12.1 Descriptive statistics

Descriptive statistics refers to methods used to organize, summarize, and present data in a meaningful way using tables, graphs, and numerical measures such as mean, median, and standard deviation (Grinnell, F. E., 2018). This study uses percentage, mean and standard deviation for describing the data.

4.12.2 Levene's Test of Homogeneity of variance

Levene's Test of Homogeneity of Variance is a statistical test used to determine whether two or more groups have equal variances, which is an important

assumption for tests (Levene, H., 1960). This test is used to verify whether the assumption of equal variances is met before applying ANOVA and the t-test. It relies on the F-statistic to test the null hypothesis that the variances are equal. If the p-value exceeds 0.05, equal variances are assumed, and ANOVA can be performed.

4.12.3 Independent sample t Test

An independent samples 't' test is a statistical test used to compare the means of two independent groups to determine whether there is a statistically significant difference between them (Gosset, W. S., 1908). Two variables are required for using this test, one variable is categorical with two categories and the other one is continuous variable. The assumption of independence, normality and equality of variance are the required assumptions of this test. Further sample data should be an outlier free distribution.

4.12.4 One sample t test

A one-sample t test is a statistical test used to determine whether the mean of a single sample is significantly different from a known or hypothesized population mean (Gosset, W.S., 1908). This test compares the sample mean with the population mean. Its assumptions include data independence, randomness, and normality.

4.12.5 One-way ANOVA

One-Way ANOVA or analysis of variance is used to determine whether there are statistically significant differences between the means of three or more independent groups (Field, A., 2018). The null hypothesis of ANOVA states that all group means are equal. Its assumptions include independence of observations, normality, and homogeneity of variance. Additionally, the independent variable must be categorical with two or more groups, while the dependent variable should be measured on a continuous scale (interval or ratio).

4.12.6 Welch's Test

Welch's test is used when comparing two means under unequal variance conditions, it is a substitute to ANOVA if the assumption of equality of variance is

not met (Welch, B. L., 1947). All the assumptions except homogeneity of variance is applicable for Welch's test

4.12.7 Post Hoc Test for multiple comparisons

On conducting ANOVA, if there is significant difference appeared, that is rejecting of hypothesis, Tukey HSD Post Hoc test is used for making pair wise comparison of sample groups. In the case of Welch's test, if the null hypothesis is rejected Tamhane's Post Hoc test used for multiple comparison.

4.12.8 Correlation Analysis

Correlation analysis measures the strength and direction of the relationship between two variables (Field, A., 2018). It is used to measure the strength and direction of the relationship between two variables. The relationship may be positive that is move together or negative that is move in opposite direction. The commonly used correlation measure is Pearson correlation coefficient, which ranges from -1 to $+1$.

4.12.9 Cronbach's Alpha

Internal consistency or reliability of the research instrument is tested with cronhach;s alpha by comparing the amount of shared variance or co variance among the items which make up an instrument to the amount of overall variance (Taber, K. S., 2018). If Cronbach's alpha is greater than or equal to 0.7, then strong internal consistency is assumed.

4.12.10 Exploratory Factor Analysis

Exploratory Factor Analysis (EFA) is a multivariate statistical method used to examine the underlying structure of observed variables by identifying latent factors that account for the patterns of correlations among them. It is primarily used when the researcher does not have a predefined theory about the factor structure and seeks to explore the possible dimensions within the data(Joseph F et al., 2019). It helps to reduce the data to a few factors and to explore the underlying theoretical

structure of the phenomenon. It is usually used to check the validity of research instruments.

4.12.11 Confirmatory factor analysis.

Confirmatory Factor Analysis (CFA) is a multivariate statistical procedure used to test the validity of a hypothesized factor structure by examining the relationship between observed variables and their underlying latent constructs (Rex B. Kline, R. B., 2016). It is used for test measurement models, validate scales and questionnaires, assess construct validity (convergent & discriminant validity), confirm theory-based factor structures and form part of Structural Equation Modeling (SEM).

4.12.12 Structural Equation Modeling (SEM).

Structural Equation Modeling (SEM) is a statistical methodology that enables the testing of a series of dependence relationships simultaneously by incorporating latent constructs measured by multiple indicators (Joseph F. Hair et al., 2010). The SEM is used for test complex theoretical models, analyze multiple relationships simultaneously, study mediating and moderating effects, validate measurement instruments and examine both direct and indirect effects.

4.13 Software used for Data Analysis

SPSS version 22 is used to perform descriptive analysis, exploratory factor analysis, and comparative analysis of variables. Analysis of Moment structure (AMOS) version 23 is used for confirmatory factor analysis and structural equation modeling.

4.14 Conclusions

This chapter outlined the research methodology adopted to examine the study objectives in a systematic and scientific manner. A descriptive and analytical research design was employed; a well-structured questionnaire was used for collecting primary data. The research instrument were carefully designed and validated to ensure reliability and accuracy of the instrument. Appropriate statistical

tools were used for analyzing the data in alignment with the nature of variable and hypothesis. Ethical considerations were duly addressed throughout the data collection process. Overall, the chosen methodology provides a healthy and reliable framework for analyzing the research problem, and it effectively supports the interpretation of findings presented in the subsequent chapters.

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Chapter 5

Facets of Quality of Work Life

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5.1 Introduction

The quality of work life is shaped by a multitude of facets that collectively influence an employee overall well-being and productivity. This chapter deals with the factors that influence quality of work life of sanitation workers in Kerala. The factors are Working Condition (WC), Compensation (C), Workload (WL), Work Life Balance (WLB), Job Security (JS), Health and Safety (HS), Social Support and Workplace Relationships (SS), Training and Development facilities (TD), and Career Growth and Advancement (CGA). These facets ultimately effects employee physical emotion and psychological well-being. These factors are measured using different observed variables as statements in five-point Likert scale ranging from strongly agree to strongly disagree.

This chapter is divided into four sections,

- Section I Demographic classification of sanitation workers,
- Section II Analysis of sanitation workers on the basis of nature of work performed
- Section III Facets of quality of work life
- Section IV Cross analysis of influence of demographic factors on quality of work life

The demographic classification of the sanitation workers is classified as Age, Gender, Religion, Social Class, Family Type, Education, Employment Status, Type of job, Place of living, Marital Status, Family Income, Source of family income and ancestral occupation

5.2 Objectives

- To identify various factors that influence the quality of work life of sanitation workers in Kerala

5.3 Hypotheses

- H1₁: There is an average level of influence of factors on quality of work life of sanitation workers in Kerala.
- H1₂: There is a significant difference in the quality of work life among sanitation workers according to their demographic classifications.

5.4 Methodology and Database

In order to fulfil the objectives of the present chapter, primary data is collected from sanitation workers by using pretested structured questionnaire. A total of 380 sample sanitation workers are selected for the research.

To describe the demographic characteristics of the sanitation workers, frequency and percentage are employed. To assess the factors affecting quality of work life, the study uses descriptive statistics and a one-sample t-test. It also compares quality of work life across different demographic groups of sanitation workers using an independent samples t-test and either one-way ANOVA or the Welch test, depending on variance homogeneity. Levene's test is applied to examine the assumption of equal variances. Furthermore, Tukey or Tamhane's T2 post-hoc tests are used for multiple comparisons where significant differences are found. The findings are presented sequentially, beginning with descriptive statistics, followed by the one-sample t-test, and then the analysis of mean differences along with post-hoc results.

5.5 Variables used for the analysis

Table 5.1

Variables used

Constructs	Dimensions	Type of questions
Demographic profile	Age, Gender, Religion, Social Class, Family Type, Education, Employment Status, Type of job, Place of living, Marital Status, Family Income, Source of family income and ancestral occupation	Option based polytomous questions
Quality of	Working Condition (WC), Compensation	5 Point Likert Scale

Constructs	Dimensions	Type of questions
Work life	(CO), Workload (WL), Work life balance (WLB), Job security (JS), Health and safety (HS), Social Support and workplace relationship (SS), Training and Development facilities (TD) and Career Growth and Advancements (CGA)	Questions

Source: Secondary data

Section I

5.6 Demographic Classification of Sanitation Workers

In this section the demographic classification of the sanitation workers is presented using frequency and percentage. From the pilot study it is observed that the demographic profile of sanitation workers significantly influences the quality of work life, such as age, gender, education, job types, annual income, social class etc. According to various previous studies, ‘gender differences can affect workload distribution and safety concerns’ (Dutta & Srivastava, 2019), ‘education can influence skill development and career advancement opportunities’ (Sharma & Gupta, 2017), and ‘financial stability is linked to income level and access to health care’ (Kumar & Singh, 2020). The classification of sanitation workers on the basis of demographic factors is given below

Table 5.2

Demographic profile of sanitation workers

Demographic characters	Category	Frequency	Percentage
Gender	Male	224	58.9
	Female	156	41.1
	Total	380	100
Age	Below 35 years	31	8.2
	35- 45	101	26.6
	46-55	211	55.5
	Above 55	37	9.7
	Total	380	100

Demographic characters	Category	Frequency	Percentage
Educational qualification	Upto 10th std	74	19.5
	10 th to 12th	295	77.6
	Graduate	11	2.9
	Total	380	100
Religion	Hindu	255	67.1
	Muslim	81	21.3
	Christen	44	11.6
	Total	380	100
Social class	Forward class	77	20,3
	Other backward class (OBC)	123	32.4
	Backward class (SC ST)	180	47.4
	Total	380	100
Place of residence	Urban	135	35.5
	Semi urban	84	22.1
	Rural	161	42.4
	Total	380	100
Marital status	Single	26	6.8
	Married	322	84.7
	Divorced	10	2.6
	Widow	22	5.8
	Total	380	100
Family type	Nuclear	295	77.6
	Joint family	85	22.4
	Total	380	100
Family income	Below 50000	64	16.8
	50000-100000	40	10.5
	100001- 150000	63	16.6

Demographic characters	Category	Frequency	Percentage
	150001- 200000	91	23.9
	200001-250000	102	26.8
	Above 250000	20	5.3
	Total	380	100
Place of work	Corporation	203	53.4
	Municipality	177	46.6
	Total	380	100
Employment status	Permanent	295	77.6
	Temporary	85	22.4
	Total	380	100
Ancestral occupation	Yes	17	4.4
	No	363	95.6
	Total	380	100

Source: Primary Data

Table 5.2 summarize the demographic profiles such as gender, age, education, religion, social class, area of residence, marital status, family type, family income,, place of work and employment status of sample respondents.

It is observed that majority of the work force (58.9%) belongs to male category while 41.1% of work force are female. From the study it is observed that male workers are dominant.

Age wise classification indicates that 55.5% of respondents belongs to the age group of 46 to 55, 26.6% of the workers are in the group of 35 to 45, only a smaller portion of 9.7% are in above 55 years and only 8.2% below 35 years.

Analysis on the basis of educational qualification of sanitation workers in Kerala, it is noted that 77.6% have qualification up to 10th to 12th standard, 19.5% had education below 10th standard and only 2.9% of the respondents were graduates.

As far as the religion of respondent is considered 67.1% are of Hindu, 21.3% are Muslim and 11.6% are to Christians.

Considering the social background of the respondent 47.4% are from backward class, 32.4% are from other backward category and 20.3% of the workers are from forward caste.

Area wise classification states that majority (42.4%) of respondents from rural areas, 22.1% of the people were from semi urban areas and 35.5% of the workers were from urban areas.

The marital status shows that 84.7% were married, 6.8% were living as single, 5.8% are widows and 2.6% are divorced.

Considering the family type it is understood that 77.6% of respondents are living in nuclear families while 22.4% were led a joint family custom.

As far as income is considered it can be noted from the table that 56% of the workers belongs to income group more than 150000, 44% Of workers have income group less than 150000 out of that 16.8% have income less than 50000.

Samples were collected from both corporations and municipalities, 53.4% of workers were from corporations and 46.6% were from municipalities of Kerala. Out of these workers 77.6% of sanitation workers were permanent and 22.4% of them were temporary workers.

It is the common phenomenon in India that the sanitation work is treated as a heredity occupation of family, but the data collected from sanitation workers from Kerala shows that only 4.4% of respondents have an ancestral background majority (95.6%) have no previous experience of these job.

Section II

5.7 Analysis of sanitation workers on basis of nature of work performed

What are the different jobs to be performed by the sanitation workers? This is a serious question to be answered by the municipal and corporation authorities, but unfortunately there is no clear cut definition of type of job to be performed. Trade unions of sanitation workers demand for a special rule from their origins. The type of job performed by the workers in different municipalities and corporations are

different, it is decided by the health wing of the concerned municipality and corporation.

Table 5.3

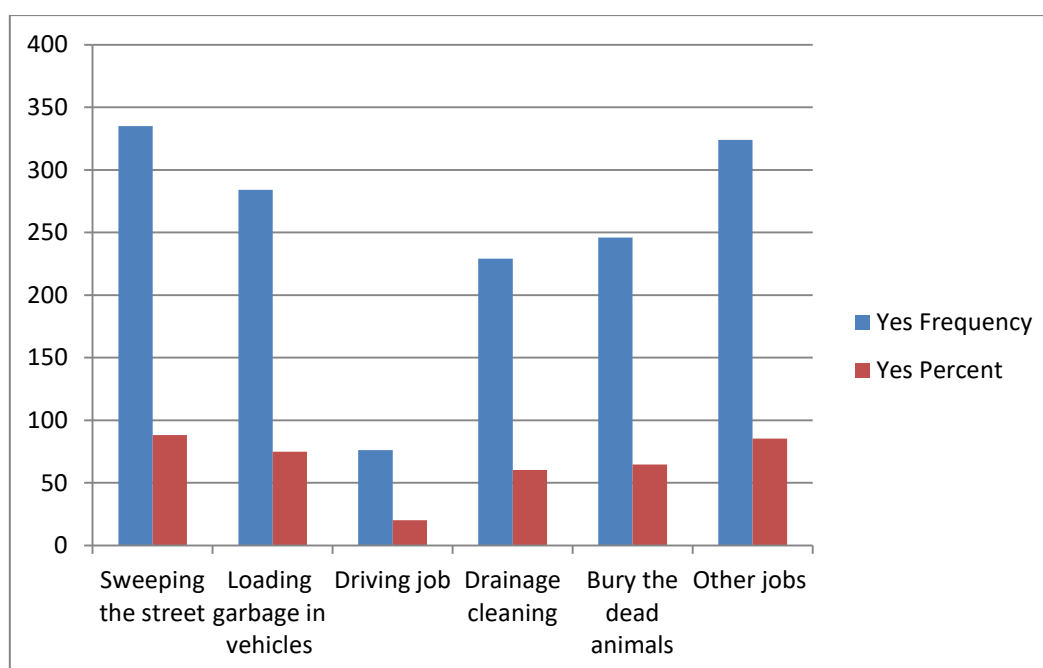
Nature of work performed by sanitation workers

Type of Job	Yes		No		Total
	Frequency	Percent	Frequency	Percent	Frequency
Sweeping the street	335	88.2	45	11.8	380
Loading garbage in vehicles	284	74.7	96	25.3	380
Driving job	76	20	304	80	380
Drainage cleaning	229	60.3	151	39.7	380
Bury the dead animals	246	64.7	134	35.3	380
Other jobs	324	85.2	56	14.8	380

Source: Primary Data

Figure 5.1

Nature of work performed by sanitation workers



Source: Primary Data

From the table 5.3 and from the figure 5.1 it can be noted that sanitation workers performed different jobs like sweeping the public places, loading the garbage in the vehicles, driving of garbage carrying vehicles, cleaning of drainages and handling of dead body of animals and so on. Based on the observation researcher classified their job in to six category as shown above. Out of the total workers assigned to a circle of a municipality or a corporation each of them is doing different job as mentioned above. Majority (88.2%) of workers were engaged in the job of sweeping the street only 11.8% are not undertaking the sweeping activity. 74.7% of sanitation workers have the job of loading the garbage into vehicles but the driving job was done only by 20% of workers. Drainage cleaning is another job performed by majority (60.3%) of workers, 39.7% of workers were not doing this job in their service. Usually, this job is done at the time just before monsoon season in Kerala. Street dog is one of the major problems faced by all the streets now a day, the possibility of accidents and death of these dogs are a common phenomenon in all cities. Sanitation workers are responsible for removing the bodies of dead animals from the street, 64.7% of workers were doing the job burying the dead animals. It is also interesting information in the above table that 85.2% of respondents agree that they have to do another works than the above list.

Section III

5.8 Facets of Quality of Work Life of sanitation workers

The overall well-being of sanitation workers depends on several factors which contribute to QWL. The factors that mostly influence the quality of work life of sanitation workers are identified with the help of descriptive statistics and one-sample t-test. There are different factors of quality of work life is identified from the exploratory factor analysis namely, Working Condition (WC), Compensation (CO), Work load (WL), Work life balance (WLB), Job security (JS), Health and safety (HS), Social support and work place relationship (SS), Training and Development facilities (TD) and Career Growth and Advancements (CGA). In order to check the role of these factors on quality of work life, mean, standard deviation and one-sample t-test are applied. The results are presented below.

Table 5.4

Facets of Quality of Work Life of Sanitation Workers

Factors and Statements	Mean	Std. Deviation
Working Condition		
Reasonable working hours	3.9211	.62412
Hazardous working condition	3.6895	.73967
Adequate equipment	3.6526	.78600
Group cohesion	3.9500	.66984
Preference for collective work.	3.9605	.67837
Harassment and discrimination free workplace.	3.7421	.67117
Reasonable work load	3.8447	.61605
Compensation		
Fare pay	3.1184	1.06723
Market rate pay	3.0053	1.01179
Social security	2.6789	1.07604
Reimbursement for expenses	3.2711	.97877
Grievance redressal	2.8868	1.02493
Retirement benefits	2.7816	1.07854
Workload		
Manageable work load	3.2395	.99498
Sufficient breaks	3.1132	1.08008
Workload affects quality service.	3.1421	1.00962
Work life balance		
Consideration for personal affaires	3.2868	.99568
Work does not affect family life.	3.4868	.94287
Technology for balancing family and work life	2.9974	.99205
Flexible work schedule	2.9763	1.07599
Job security		
Stability of employment	3.2605	1.17045
Authority support for job security	3.1368	1.07856
Skills are valued by authorities.	3.0895	1.14509

Factors and Statements	Mean	Std. Deviation
Job security helps workers focus on task	3.3421	1.15720
Commitment to worker retention during crises.	3.2842	1.09605
Health and safety		
Safe and comfortable workplace	3.0868	1.09223
Risk of illness	2.7553	1.02507
Adequate protective gear for safety.	3.2053	1.02732
Timely preventive vaccinations.	3.1684	.96265
Provides insurance.	2.8763	.98429
Social support and workplace relationship		
Social status	3.4974	.96509
Work environment builds self-esteem	3.7053	.79409
Sense of community and openness.	3.7053	.75666
Freedom from discrimination	3.6737	.82433
Dignified and growth-oriented job.	3.7132	.84986
Idea and feeling based interactions.	3.6605	.73941
Training and development facilities		
Adequate training	2.6263	1.13349
Job specific training	2.5737	1.06879
Training enhances performance and career growth	2.7711	1.08854
Career Growth and Advancements (CGA)		
Opportunity to expand capabilities	3.3789	1.05449
Growth oriented job	3.2500	1.22555
Work environment motivates to reach potential	3.3395	1.17943

Source: Primary Data

Table 5.4 shows the factors of quality of work life of sanitation workers in Kerala. For measuring various dimensions of quality of work life Mean and Standard deviation is used. For measuring working condition of respondents seven statements were used which ranges $\bar{X}$ from 3.65 to 3.96. Sanitation workers have a favourable working condition, they are happy with working hours ($\bar{X}$ =3.92), they feel better in their team work ($\bar{X}$ =3.95) and having a strong preference for collective

work ($\bar{X}$ =3.96). At the same time in the areas of cleanliness of their working environment ($\bar{X}$ =3.69) and availability of adequate equipment ($\bar{X}$ =3.65) shows that even though the conditions are good still need some advancement in the field of workplace hygiene and there should be provision of proper tools. Workers also agreed that their workload is reasonable ($\bar{X}$ =3.84) and that the environment is largely free from harassment and discrimination ($\bar{X}$ =3.74). The standard deviation value all lies below 1 indicates consistency in workers' opinion across all items.

Considering the compensation dimension of QWL, it indicates that a moderate level of satisfaction among the workers. None of the statements have value of 3.5 or more, that means workers are not at all highly satisfied with any of the elements coming under compensation. Reimbursement of expenses related with their job ($\bar{X}$ =3.27), social security benefit ($\bar{X}$ =2.68) and with retirement benefits ($\bar{X}$ =2.78). Remuneration is only moderately adequate to meet personal needs ($\bar{X}$ =3.12) and is not up to market rate ($\bar{X}$ =3.01). The standard deviation is high which indicates that there is difference in perception among sanitation workers regarding remuneration. In all it is concluded that workers are getting some financial and job-related benefits but the benefits they receive remain insufficient, fully support their needs and enhance their QWL

By analysing the workload, the analysis shows that workers experienced a moderate level of satisfaction. Among the statements highest mean value is for manageable work load ($\bar{X}$ =3.24) (SD=.99) which shows they are moderately feel that work assigned to them are reasonable and based on their ability to do. About the break and quality of services, it shows a lower mean value that is 3.11 and 3.14 respectively indicating a need for better workload management and improved rest provisions to enhance their overall quality of work life.

Work life balance is another important factor influencing quality of work life of sanitation workers. A higher mean value of 3.49 (SD = 0.94) was obtained for work does not affect family life shows a fare balance between work and personal life. All other three statements coming under work life balance shows mean value of either just above 3 or near to 3, the standard deviation also less than 1 except for the

statement ‘flexible work schedule’ ($SD = 1.08$) which indicates that institutional support for flexibility and technology-based intervention to improve the work life balance is lacking. Overall workers feel a moderate degree of work life balance, which demands a need for policy level initiatives for creating a flexible working schedule and technological facilitation to enhance QWL

Job security dimension of QWL indicates that workers feel a moderate level of stability and assurance on their job. Workers confidence about the stability of employment ($\bar{X} = 3.26$) indicates that employees are somewhat confidence about their continued job. Workers moderately agree that there is institutional support for job security ($\bar{X} = 3.14$) but may not be sufficient. In the area of recognition and appreciation of workers skill and contribution by the authority ($\bar{X} = 3.09$) point out that authority could improve the appreciation of effort of workers. Among all 5 statements highest mean value ($\bar{X} = 3.34$) is obtained by the statement ‘job security helps workers focus on task’ indicates, if the workers are secure in their job, then they can concentrate on their performance. Workers feel a moderate retention effort by the authority and experience a moderate level of job security.

Among all the indicators coming under health and safety dimension of QWL ‘adequate protective gear for safety recorded the highest mean value $\bar{X} = 3.21$ ($SD=1.03$) which indicates that workers moderately agree that authority provide basic safety equipment necessary for their protection during work. The lowest mean value ($\bar{X} = 2.76$) is recorded for the risk of illness and occupational diseases shows that workers were uncertain about being free from occupational diseases. The lower mean value suggests that many employees feel that their job is exposing them to health issues due to continuous contact with waste and insufficient protective measures. Availability of protective measures is a stronger aspect of workplace safety; there is still a need for uniform implementation of safety measures to protect the health of sanitation workers.

The analysis of social support and workplace relationship dimension of QWL reveals that workers experience a positive and supportive social environment at work place. Mean value of the all the statements are over 3.5, dignity and growth

obtained the highest mean value of 3.71 followed by ‘work environment builds self-esteem’ and ‘sense of community and openness’ both with mean of 3.71. The result shows that workers perceive their work environment as one that fosters respect, self-worth and belonging, contributing positively to QWL. They feel that they are treated with fairness, equity and free from prejudice based on gender, race, caste and religion ($\bar{X}$ =3.67). Standard deviation of all statements indicates high degree of consistency in response.

Training and development determinants of QWL reveal a low level of satisfaction among the sanitation workers regarding opportunity for professional growth and skill improvement. Mean value for all statements fell below 3, point out that there is inadequate access to effective training programmes.

Sanitation workers feel a moderate level of satisfaction with regard to personal and professional development within their occupation. Workers somewhat agree that their job provides chances to enhance their capabilities ($\bar{X}$ =3.38), working environment moderately support employees to reach their potential ($\bar{X}$ =3.34) and a few workers expect a limited advancement opportunity in their job ($\bar{X}$ =3.25).

Sanitation workers in Kerala show different levels of agreement with different factors of quality of work life, in terms of working conditions they highly agree with the present working environment. The dimensions of compensation, workload, work life balance, job security and health and safety feel moderate satisfaction. Workers have a highly positive approach towards the dimension of social support and workplace relationships. With regard to training and development they show a lower level of satisfaction but show a moderate level of agreement with personal and professional development.

5.8.1 Influence of facets on Quality of Work Life of sanitation workers

In this section the level of influence of quality of work life is analyzed by using one-sample t-test as the proposed variable is measured with the help of five-point Likert scale. Since it is, the test value is considered as 3 and the mean score

which is above the test value defines that there will be good level influence of factors on quality of work life. If the mean value is less than test value, then there will not be good level of influence of factors on quality of work life. Similarly, if the mean value is equal to test value, there will be average level of influence of factors on quality of work life among sanitation workers. Following hypothesis is formulated and tested accordingly,

$H1_0$: There is an average level of influence of factors on quality of work life of sanitation workers in Kerala ($\bar{X} = 3$).

$H1_1$: There is no average level of influence of factors on quality of work life of sanitation workers in Kerala ($\bar{X} \neq 3$).

Table 5.5

One Sample Statistics and Test Result of Quality of Work life

Dimensions of Quality of Work Life	One-Sample Statistics			One Sample Test (Test Value = 3)		
	N	Mean	Std. Deviation	t	df	Sig. (p) value
Working Condition	380	3.822	0.524	30.584**	379	.000
Compensation	380	2.957	0.831	-1.008	379	.314
Workload	380	3.164	0.908	3.539**	379	.000
Work life balance	380	3.186	0.822	4.426**	379	.000
Job security	380	3.222	0.959	4.524**	379	.000
Health and safety	380	3.018	0.844	0.425	379	.671
Social support and workplace relationship	380	3.659	0.672	19.115**	379	.000
Training and development facilities	380	2.657	0.947	-7.054**	379	.000
Career growth and advancements	380	3.322	1.040	6.045**	379	.000
QWL	380	3.223	0.489	8.893**	379	.000

Source: Primary Data

**Significant at 1% level of significance

The result of one-sample t-test shows the working condition ($\bar{X}$ =3.822), workload ($\bar{X}$ =3.164), work life balance ($\bar{X}$ =3.186), job security ($\bar{X}$ =3.222), social support & workplace relationship ($\bar{X}$ =3.659), and career growth & advancements ($\bar{X}$ =3.322) have the mean score greater than 3. It means these factors have good level of influence on overall quality of work life. Since all the 'p' values are less than 0.01, null hypothesis is rejected at 1% level of significance. Hence it is states that there is significant association between these factors and QWL of sanitation workers.

On the other hand, the mean score of training and development facilities shows the values of $\bar{X}$ =2.657, which is less than 3. It means this factor has less influence on overall quality of work life.

Further from the table 5.5 it is noted that p value of compensation (p=0.314) and health and safety (p=0.671) is greater than 0.05, hence null hypothesis is accepted stating that there is average level of influence of factors on quality of work life of sanitation workers.

Section IV

5.9 Cross analysis of influence of demographic factors on quality of work life

The demographic profile of the sanitation workers can significantly influence their quality of work life. Hence it is essential to conduct a comparative analysis of quality of work life among sanitation workers across their demographic groups.

Accordingly, there is a need to identify the influence of demographic profile of the workers for ensuring their quality of work life. Hence, Age, Gender, Social Class, Family Type, Employment Status, Place of living, Working Place, Marital Status and Annual Income of the sanitation workers are taken into consideration as demographic groups. Following hypothesis is formulated and tested.

H0₂: There is no significant difference in the level of quality of work life among sanitation workers according to their demographic classifications.

H1₂: There is significant difference in the level of quality of work life among sanitation workers according to their demographic classifications.

5.9.1 Influence of Age on Quality of Work Life of Sanitation Workers

In the words of (Tolera & et.al, 2023) ‘older sanitation workers may experience more health problems due to prolonged exposure to occupational hazards’. Younger workers may face challenges related to job insecurity and lack of experience (Khan & Ahmed, 2024). Sanitation workers with higher education levels may have better knowledge of occupational health and safety practices, leading to improved quality of work life (Khan & Ahmed, 2024). Sanitation workers with higher incomes may have better access to health care services and improved working condition (Tolera & et.al, 2023).

Quality of work life of sanitation workers may vary according to the age of respondents. Age is an important factor for determining the quality of work life of sanitation workers. The age group is classified as 35, 35 – 45, 46-55 and above 55. In order to check the comparison of factors of quality of work life among different age groups of sanitation workers, following hypothesis is formulated and tested.

H0: There is no significant difference in the quality of work life among sanitation workers according to their age groups.

H1: There is a significant difference in the quality of work life among sanitation workers according to their age groups.

The response of the respondents about their influence of age and quality of work life is analysed using One-way ANOVA/ Welch test is applied according to the homogeneity assumption of population variance. Before that homogeneity assumption is tested with the help of Levene’s test of Equality of Variance. The result are presented below

Table 5.6*Age wise comparison of Quality of Work Life*

Dimensions	Descriptive Statistics of Age wise comparison				Levene's test of Equality of Variance		One- way ANOVA/ Welch test	
	Below 35	35 - 45	46-55	above 55	Test statistics	Sig. value	Test Statistics	Sig. value
WC	3.571 (.655)	3.786 (.595)	3.881 (.418)	3.799 (.672)	5.786**	.001	2.669	.053
CO	2.661 (.690)	2.905 (.770)	2.960 (.848)	3.324 (.899)	1.613	.186	3.932**	.009
WL	2.397 (.732)	2.924 (.876)	3.355 (.846)	3.378 (1.00)	1.130	.337	15.06**	.000
WLB	2.871 (.846)	3.002 (.831)	3.250 (.796)	3.594 (.729)	1.743	.158	6.970**	.000
JS	2.851 (.842)	3.069 (.990)	3.350 (.904)	3.221 (1.14)	4.053**	.007	4.157**	.008
HS	2.961 (.626)	3.055 (.840)	3.006 (.859)	3.032 (.950)	4.182**	.006	0.162	.922
SS	3.301 (.775)	3.475 (.830)	3.756 (.543)	3.905 (.546)	8.405**	.000	7.544**	.000
TD	2.483 (.918)	2.429 (.974)	2.733 (.911)	2.991 (.973)	0.729	.535	4.390**	.005
CGA	3.698 (1.01)	3.438 (1.01)	3.295 (.989)	2.846 (1.24)	3.653*	.013	3.631*	.016
QWL	2.977 (.411)	3.120 (.483)	3.287 (.473)	3.343 (.557)	0.778	.507	6.289**	.000

Source: Primary Data

**Significant at the 1% level of significance

*Significant at the 5% level of significance

Parentheses represent standard deviation

The result summarizes the descriptive statistics in the table 5.6, Levene's test of equality of variance, One-way ANOVA/ welch test for mean comparison. Regarding compensation, workload, work life balance, training and development and overall quality of work life, Levene's statistics are insignificant at 5% level of

significance. Accordingly, One-way ANOVA is applied to test the mean comparison with the assumption of equality of population variance. The result of One-way ANOVA depicts that there exists significant difference in the factors like compensation ($p = .009$), work load ($p = .000$), work life balance ($p = .000$), training and development ($p = .005$) and overall quality of work life ($p = .000$). Since all the 'p' values are less than 0.01, the null hypothesis is rejected at 1% level of significance. Hence there exists age-wise significant difference in the above-mentioned factors of quality of work life. Here, the workers of above 55 age groups show significant difference in the factors of quality of work life.

With respect to working conditions, job security, social support & workplace relationship and career growth & advancement, Levene's statistics are significant at 5% level of significance. Hence, Welch test is applied to test mean difference with the assumption of inequality of the population variance. The result of Welch test exhibits that there exists no significant difference in the factors like working condition ($p \text{ value} = .053$) among sanitation workers across different age groups. Since the 'p' value is insignificant at 5% level of significance, the null hypothesis is failed to reject for the mean difference of working condition.

Since there is significant difference among other factors like job security ($p = .008$), social support & workplace relationship ($p = .000$), and career growth & advancement ($p \text{ value} = .016$) according to the age group of sanitation workers. Since all the 'p' values are less than 0.05, the null hypothesis is rejected at 5% level of significance. Therefore, there exists age wise significant difference in the already explained factors of quality of work life. Here, the workers of above 55 groups show significant difference in the factor of 'compensation', below 35 age group of workers shows significant difference in the factors of job security, social support and career growth and advancement.

Post hoc analysis is conducted for the significant result of One-way ANOVA/ Welch test. Accordingly, Tukey/Tamhane's T2 test for multiple comparisons is applied in this manner. The results are presented below.

Table 5.7

Multiple Comparisons of Age groups on Quality of Work Life (Tukey HSD Post Hoc Test)

Tukey HSD				
Dependent Variable	(I) Age	(J) Age	Mean Difference (I-J)	Sig.
CO	Below 35	35 - 45	-.24465	.469
		46-55	-.29922	.233
		above 55	-.66303**	.006
	Above 55	Below 35	.66303**	.006
		35 - 45	.41838*	.042
		46-55	.36382	.064
WL	Below 35	35 - 45	-.52624*	.016
		46-55	-.95760**	.000
		above 55	-.98053**	.000
	35 - 45	Below 35	.52624*	.016
		46-55	-.43136**	.000
		above 55	-.45429*	.032
	46-55	Below 35	.95760**	.000
		35 - 45	.43136**	.000
		above 55	-.02293	.999
	Above 55	Below 35	.98053**	.000
		35 - 45	.45429*	.032
		46-55	.02293	.999
WLB	Below 35	35 - 45	-.13151	.856
		46-55	-.37903	.070
		above 55	-.72363**	.001
	35 - 45	Below 35	.13151	.856
		46-55	-.24752	.055
		above 55	-.59212**	.001
	Above 55	Below 35	.72363**	.001
		35 - 45	.59212**	.001
		46-55	.34459	.078
TD	35 - 45	Below 35	-.05483	.992
		46-55	-.30397*	.038
		above 55	-.56195*	.010
	46-55	Below 35	.24915	.510

Tukey HSD				
Dependent Variable	(I) Age	(J) Age	Mean Difference (I-J)	Sig.
QWL	Above 55	35 - 45	.30397*	.038
		above 55	-.25797	.410
		Below 35	.50712	.118
		35 - 45	.56195*	.010
		46-55	.25797	.410
	Below 35	35 - 45	-.14318	.467
		46-55	-.31018**	.005
		above 55	-.36617*	.010
	35 - 45	Below 35	.14318	.467
		46-55	-.16701*	.022
		above 55	-.22299	.076
	46-55	Below 35	.31018**	.005
		35 - 45	.16701*	.022
		above 55	-.05598	.914
	Above 55	Below 35	.36617*	.010
		35 - 45	.22299	.076
		46-55	.05598	.914

** . The mean difference is significant at the 0.01 level.

* . The mean difference is significant at the 0.05 level.

Source: Primary Data

The table 5.7 shows the result of Tukey HSD multiple comparisons of age groups on Quality of Work Life of sanitation workers after One-way ANOVA. Regarding Compensation and Work Life Balance, above 55 age group respondents are significantly different from below 35 and 35-45 age groups. With regard to Workload, 46-55 and above 55 age groups are significantly different from other two groups. Overall, there exists significant difference in the quality of work life among sanitation workers, especially between lower and upper age groups.

Table 5.8

Multiple Comparisons of Age groups on Quality of Work Life (Tamhane's T2 Post Hoc Test)

Tamhane				
Dependent Variable	(I) Age	(J) Age	Mean Difference (I-J)	Sig.
JS	Below 35	35 - 45	-.21769	.796
		46-55	-.49910*	.024
		above 55	-.37001	.568
	46-55	Below 35	.49910*	.024
		35 - 45	.28140	.096
		above 55	.12909	.988
SS	Below 35	35 - 45	-.17417	.868
		46-55	-.45564*	.019
		above 55	-.60433**	.004
	35 - 45	Below 35	.17417	.868
		46-55	-.28147*	.014
		above 55	-.43016**	.004
	46-55	Below 35	.45564*	.019
		35 - 45	.28147*	.014
		above 55	-.14869	.575
	Above 55	Below 35	.60433**	.004
		35 - 45	.43016**	.004
		46-55	.14869	.575
CGA	Below 35	35 - 45	.25998	.773
		46-55	.40351	.241
		above 55	.85208*	.017
	Above 55	Below 35	-.85208*	.017
		35 - 45	-.59210	.071
		46-55	-.44857	.233

** . The mean difference is significant at the 0.01 level.

* . The mean difference is significant at the 0.05 level.

Source: Primary Data

The table 5.8 exhibits the result of Tamhane's T2 post- hoc test for multiple comparisons of age groups on factors of quality of work life after the significant result of Welch test used for job security, social support and career growth and advancement.

In the case of job security, there exists significant difference between age groups of under 35 and 46-55 sanitation workers. Regarding social support, there exist significant differences among all the age group workers. Similarly, concerning career growth and advancement, there exist significant differences between below 35 and above 55 age group of sanitation workers.

5.9.2 Influence of Gender on Quality of Work Life of Sanitation Workers

Gender differences create clear gaps in working conditions, safety and health among sanitation workers. Therefore, gender is an important part of studying Quality of Work Life, not just a basic background factor(Sayed Ishtiaq Ahmed Fatmi et al., 2022). In order to check the influence of gender of sanitation workers on factors of quality of work life, following hypothesis is formulated and tested.

H0: There is no significant difference in the quality of work life among sanitation workers according to their gender.

H1: There is a significant difference in the quality of work life among sanitation workers according to their gender.

For testing the hypothesis independent sample t-test is used according to homogeneity assumption is of population variance. Levene's test for equality of variance is used to check this assumption. The results of the test are given below.

Table 5.9*Gender wise comparison of Quality of Work Life*

Dimensions	Gender	Mean	SD	Levene's Test for Equality of Variances		t-test result	
						t	Sig.
WC	Male	3.834	.496	Equal variances assumed	5.692*	.501	.617
	Female	3.806	.563	Equal variances not assumed		.489	.625
CO	Male	2.930	.826	Equal variances assumed	.091	-.757	.450
	Female	2.995	.839	Equal variances not assumed		-.755	.451
WL	Male	3.239	.898	Equal variances assumed	2.030	1.927	.055
	Female	3.057	.914	Equal variances not assumed		1.921	.056
WLB	Male	3.194	.819	Equal variances assumed	.016	.209	.835
	Female	3.176	.829	Equal variances not assumed		.208	.835
JS	Male	3.218	.980	Equal variances assumed	1.616	-.094	.925
	Female	3.228	.931	Equal variances not assumed		-.095	.924
HS	Male	2.995	.827	Equal variances assumed	.744	-.632	.528

Dimensions	Gender	Mean	SD	Levene's Test for Equality of Variances		t-test result	
				F	Sig.	t	Sig.
SS	Female	3.051	.869	Equal variances not assumed		-.627	.531
	Male	3.694	.658	Equal variances assumed	1.069	1.242	.215
	Female	3.607	.690	Equal variances not assumed		1.232	.219
TD	Male	2.629	.924	Equal variances assumed	.117	-.679	.498
	Female	2.696	.981	Equal variances not assumed		-.671	.503
CGA	Male	3.318	1.074	Equal variances assumed	.969	-.098	.922
	Female	3.329	.994	Equal variances not assumed		-.099	.921
QWL	Male	3.228	.477	Equal variances assumed	.496	.229	.819
	Female	3.216	.508	Equal variances not assumed		.227	.821

Source: Primary Data

*Significant at the 5% level of significance

Table 5.9 depicts the result of Independent Sample t-test for checking the significant difference between male and female sanitation workers regarding the factors of quality of work life. Before testing the mean difference, the equality of population variance is measured with the help of Levene's test of Equality of Variance. The equality of variance assumption is proved for all the factors except for working condition ($p=.018$). Hence, the test value and significance value

corresponding to equality of variance assumed is selected for mean comparison. But, regarding working conditions, the test value and significance value corresponding to equal variance not assumed is considered for mean comparison.

Since all the factors of quality of work life have insignificant test value, there no significant difference between male and female respondents regarding quality of work life. Hence the null hypothesis is failed to reject at 5% level of significance. It can be concluded that the quality of work life of sanitation workers is almost same irrespective of their gender.

5.9.3 Influence of Education on Quality of Work Life of Sanitation Workers

By comparing the QWL of workers with their educational level helps the management to understand how different educational group perceive their work environment and whether organizational policies meet different needs of employees. Such a comparison enables management to design appropriate human resource practices, training programs, and motivational strategies that enhance employee well-being and productivity across all educational levels(Cascio, W. F., 2016). To test the influence of education on QWL of sanitation workers the following hypothesis is formulated and tested.

H0: There is no significant difference in the quality of work life among sanitation workers according to their education.

H1: There is a significant difference in the quality of work life among sanitation workers according to their social education.

To examine the hypothesis, One-way ANOVA/Welch test is applied based on the result of homogeneity of variance assumption. The homogeneity assumption is verified by using Levene's test of Equality of Variance. The results are presented below

Table 5.10*Education wise comparison of Quality of Work Life*

Dimensions	Descriptive Statistics of Education wise comparison			Levene's test of Equality of Variance		One- way ANOVA/ Welch test	
	Upto 10 th std	10 th to 12 th	Graduate	Test statistics	Sig. value	Test Statistics	Sig. value
WC	3.855 (.606)	3.810 (.510)	3.948 (.249)	1.762	.173	.539	.584
CO	2.880 (.933)	2.958 (.805)	3.424 (.700)	2.838	.060	2.062	.129
WL	3.184 (.987)	3.151 (.899)	3.393 (.573)	5.040**	.007	.884	.424
WLB	3.229 (.721)	3.161 (.854)	3.568 (.462)	6.633**	.001	2.711	.057
JS	2.778 (1.279)	3.318 (.837)	3.654 (.587)	38.43**	.000	8.000**	.002
HS	2.837 (.889)	3.061 (.829)	3.072 (.863)	0.790	.455	2.113	.122
SS	3.572 (.683)	3.672 (.675)	3.878 (.447)	0.836	.434	1.271	.282
TD	2.549 (.962)	2.664 (.946)	3.181 (.735)	1.378	.253	2.184	.114
CGA	2.887 (1.29)	3.440 (.948)	3.090 (.761)	15.34**	.000	6.549**	.005
QWL	3.086 (.539)	3.248 (.477)	3.468 (.235)	6.736**	.000	7.961**	.002

Source: Primary Data

**Significant at the 1% level of significance

*Significant at the 5% level of significance

Parentheses represent standard deviation

The table 5.10 denotes the result of one-way ANOVA/Welch test, which compare the nine factors of QWL and overall QWL of sanitation workers with their educational level. Before conducting the hypothesis test Levene's test of equality of variance was done to check the assumption of equality of variance, the result shows

that in the case of working condition, compensation, health and safety, social support and training & development dimensions of QWL the equality of variance assumption is proved ($p > 0.05$), hence ANOVA test is applied, in other cases like work load, work life balance, job security, career growth & advancements and overall QWL use Welch test for testing the hypothesis. The result of ANOVA/Welch indicates that except in the cases of Job security ($p = 0.002$), career growth & advancements ($p = 0.005$) and overall QWL ($p = 0.002$), all other factors having p value greater than 0.05, hence accept null hypothesis. In case of job security, career growth & advancement and overall QWL, reject null hypothesis that is there is significant difference in the QWL of employees according to their different educational level. Graduate workers shows higher QWL ($\bar{X} = 3.468$) than the employees having educational qualification between 10th to 12th ($\bar{X} = 3.248$) and between less than 10 ($\bar{X} = 3.086$). Higher educated employees show better QWL than lower educated employees.

Differences were observed in the dimensions of job security and career growth & advancements and on overall QWL. For variables showing significant difference in the One-way ANOVA/Welch test, post hoc analysis is performed. Accordingly, Tukey/ Tamhane's T2 test is applied for multiple comparisons. The corresponding results are presented below

Table 5.11*Multiple Comparisons of education on quality of work life*

Tamhane				
Dependent Variable	(I) Education	(J) Education	Mean Difference (I-J)	Sig.
JS	Upto 10th std	10th to 12	-.53959**	.003
		Graduate	-.87617**	.002
	10th to 12	Upto 10th std	.53959**	.003
		Graduate	-.33658	.253
	Graduate	Upto 10th std	.87617**	.002
		10th to 12	.33658	.253
CGA	Upto 10th std	10th to 12	-.55329**	.002
		Graduate	-.20352	.848
	10th to 12	Upto 10th std	.55329**	.002
		Graduate	.34977	.420
	Graduate	Upto 10th std	.20352	.848
		10th to 12	-.34977	.420
QWL	Upto 10th std	10th to 12	-.16271	.057
		Graduate	-.38197**	.001
	10th to 12	Upto 10th std	.16271	.057
		Graduate	-.21926*	.038
	Graduate	Upto 10th std	.38197**	.001
		10th to 12	.21926*	.038

**. The mean difference is significant at the 0.01 level.

*. The mean difference is significant at the 0.05 level.

Tamhane post test result shows that, in the dimension of job security those educated below 10th shows difference with 10th to 12 (p = .003) and with graduate (p = .002), which indicates that employees with less than 10th educational level shows lower job security feeling than the employees in other two groups. In the dimension of career growth & development sanitation workers having educational level less than 10 shows difference with 10th to 12th (p = 0.002) educational level category only. In the matter of overall QWL less than 10th shows difference with graduates (p = 0.001), 10th to 12th also shows difference with graduates (p = 0.001). Post hoc result concluded that employees with higher educational qualifications, especially graduates, report better job security and quality of work life, highlighting the role of education in shaping employees' workplace experiences.

5.9.4 Influence of Social Class on Quality of Work Life of Sanitation Workers

Social class of workers is important because it often influences access to resources, job security and working condition, which in turn shape workers' overall quality of work life (ILO, 2021). Social class of sanitation workers is divided into forward class, other backward class and backward class, for checking relation between social classes with factors of QWL following hypothesis is formulated and tested.

H0: There is no significant difference in the quality of work life among sanitation workers according to their social class.

H1: There is a significant difference in the quality of work life among sanitation workers according to their social class.

To test the hypothesis, a one-way ANOVA or Welch test is used depending on whether the assumption of homogeneity of variance is met. This assumption is checked using Levene's test of equality of variances.

Table 5.12*Social class wise comparison of Quality of Work Life*

Dimensions	Descriptive Statistics of Social class wise comparison			Levene's test of Equality of Variance		One- way ANOVA/ Welch test	
	Forward Class	Other Backward Class	Backward Class	Test statistics	Sig. value	Test Statistics	Sig. value
WC	3.901 (.546)	3.817 (.534)	3.792 (.507)	0.049	.952	1.171	.311
CO	3.116 (.841)	2.894 (.793)	2.931 (.848)	0.859	.424	1.867	.156
WL	3.385 (.834)	3.048 (.948)	3.150 (.899)	3.318*	.037	3.593*	.029
WLB	3.457 (.615)	3.174 (.837)	3.079 (.867)	16.68**	.000	8.238**	.000
JS	3.379 (.881)	3.287 (.877)	3.111 (1.032)	3.341*	.036	2.535	.082
HS	3.026 (.896)	2.996 (.814)	3.030 (.846)	0.550	.577	0.060	.942
SS	3.831 (.571)	3.687 (.583)	3.566 (.751)	7.292**	.001	4.731*	.010
TD	2.904 (.939)	2.729 (.937)	2.501 (.935)	2.083	.126	5.525**	.004
CGA	3.454 (.959)	3.455 (.928)	3.175 (1.128)	7.280**	.001	3.376*	.036
QWL	3.384 (.469)	3.232 (.463)	3.148 (.501)	0.632	.532	6.431**	.002

Source: Primary Data

**Significant at the 1% level of significance

*Significant at the 5% level of significance

Parentheses represent standard deviation

Levene' test of equality of variance shows the result that working condition, compensation, health and safety, training and development and overall quality of work life ($P>0.05$) are insignificant at 5% level of significance, hence one-way ANOVA is applied to test the mean comparison with the assumption of equality of population variance. In the case of workload, work life balance, job security, social support and workplace relationship and carrier growth and advancement ($P<0.05$) are significant at 5% level of significance. Hence, Welch test is applied to test mean difference with the assumption of inequality of the population variance. The result of one-way ANOVA shows that there is significant difference in the factor training and development ($p= .004$) and overall quality of work life ($p= .002$). All p value is less than 0.01; the null hypothesis is rejected at 1% level of significance. In the case of working conditions ($p= 0.311$), compensation ($p= .156$) and health and safety ($p= .060$) all having p value greater than 0.05; hence null hypothesis is accepted at 5% significance level. The result of welch test exhibits that there exists no significant difference in the factors like Job security ($p= .082$) among sanitation workers across different social class. There is significant difference in the factors like workload ($p= .029$), work life balance ($p= .000$), social support and workplace relationship ($p= .10$) and carrier growth and advancement ($p=.36$). All the p values are less than 0.05 hence reject the null hypothesis at 5% significance level.

For variables showing significant difference in the one-way ANOVA/Welch test, post hoc analysis is performed. Accordingly, Tukey/ Tamhane's T2 test is applied for multiple comparisons. The corresponding results are presented below

Table 5.13

Multiple Comparisons of Social Class on Quality of Work Life (Tukey HSD Post Hoc Test)

Tukey HSD				
Dependent Variable	Social Class (I)	Social Class (J)	Mean Difference (I-J)	Sig.
TD	Forward Class	Other Backward Class	.17576	.401
		Backward Class	.40291**	.005
	Backward Class	Forward Class	-.40291**	.005
		Other Backward Class	-.22715	.097
QWL	Forward Class	Other Backward Class	.15177	.079
		Backward Class	.23536**	.001
	Backward Class	Forward Class	-.23536**	.001
		Other Backward Class	-.08359	.302

** . The mean difference is significant at the 0.01 level.

Source: Primary Data

The table 5.13 shows the result of Turkey HSD post Hoc test which make a multiple comparison of different social class on QWL of sanitation workers after one-way ANOVA. With regard to training and development the forward class shows significant difference with backward class ($p=0.005$). Forward class experienced better training and development support compared to those from backward class. In the matter of overall QWL significant difference observed between forward and backward class ($p=0.0001$). The forward class showed highest QWL followed by other backward class and then backward class

Table 5.14

Multiple Comparisons of Social Class on Quality of Work Life (Tamhane's T2 Post Hoc Test)

Tamhane				
Dependent Variable	(I) Social Class	(J) Social Class	Mean Difference (I-J)	Sig.
WL	Forward Class	Other Backward Class	.33650 [*]	.027
		Backward Class	.23528	.129
	Other Backward Class	Forward Class	-.33650 [*]	.027
		Backward Class	-.10122	.728
WLB	Forward Class	Other Backward Class	.28300 [*]	.020
		Backward Class	.37863 ^{**}	.000
	Other Backward Class	Forward Class	-.28300 [*]	.020
		Backward Class	.09563	.708
	Backward Class	Forward Class	-.37863 ^{**}	.000
		Other Backward Class	-.09563	.708
SS	Forward Class	Other Backward Class	.14418	.239
		Backward Class	.26450 ^{**}	.007
	Backward Class	Forward Class	-.26450 [*]	.007
		Other Backward Class	-.12033	.315
CGA	Forward Class	Other Backward Class	-.00074	1.000
		Backward Class	.27862	.029
	Other Backward Class	Forward Class	.00074	1.000
		Backward Class	.27936	.037
	Backward Class	Forward Class	-.27862	.029
		Other Backward Class	-.27936	.037

^{**}. The mean difference is significant at the 0.01 level.

^{*}. The mean difference is significant at the 0.05 level.

Source: Primary Data

The table 5.14 exhibits the result of Tamhane's T2 post- hoc test for multiple comparisons of social class on factors of quality of work life after the significant result of Welch test used for workload, work life balance, social support and career growth and advancements. In case of workload ($p=0.027$) and work life balance ($p=0.020$) significant difference exists between forward class and other backward class. Forward class workers feel a heavy workload than other backward class groups, they also feel a better work life balance compared to other backward class. In case of social support and workplace relationship factors of QWL, there is a significant difference shown between forward class and backward class ($p=0.007$). Forward class gets strong social support in their workplace compared to backward class. In the matter of career growth and advancement not much difference observed between different social classes. The overall result highlights a consistent pattern where forward class shows a higher level of QWL in almost all dimensions followed by other backward class and backward class at the end.

5.9.5 Influence of Family Type on Quality of Work Life of Sanitation Workers

Varying family environment provides different levels of support from family members; they share household works and family responsibilities in different ways. These differences affect how well employees can manage both their job and family duties, which is an important part of their QWL (Lalmuanawma,j & Elizabeth,H, 2023). To check the influence of family type of sanitation workers on quality of work life, the under mentioned hypothesis is formulated and tested.

- H0: There is no significant difference in the quality of work life among sanitation workers according to their family type.*
- H1: There is a significant difference in the quality of work life among sanitation workers according to their family type.*

For testing the hypothesis independent sample t-test is used according to homogeneity assumption is of population variance. Levene's test for equality of variance is used to check this assumption. The results of the test are given below

Table 5.15*Family Type wise comparison of Quality of Work Life*

Dimensions	Family Type	Mean	SD	Levene's Test for Equality of Variances		t-test result		
				F	Sig.	t	Sig.	
WC	Nuclear	3.839	.472	Equal variances assumed	9.49**	.002	1.162	.246
	Joint family	3.764	.675	Equal variances not assumed			.958	.340
CO	Nuclear	2.943	.840	Equal variances assumed	.762	.383	-.590	.556
	Joint family	3.003	.803	Equal variances not assumed			-.605	.546
WL	Nuclear	3.212	.889	Equal variances assumed	1.867	.173	1.906	.057
	Joint family	3.000	.959	Equal variances not assumed			1.828	.070
WLB	Nuclear	3.133	.848	Equal variances assumed	14.78**	.000	-2.389*	.017
	Joint family	3.373	.698	Equal variances not assumed			-2.659**	.009
JS	Nuclear	3.229	.956	Equal variances assumed	.097	.756	.247	.805
	Joint family	3.200	.974	Equal variances not assumed			.244	.808

Dimensions	Family Type	Mean	SD	Levene's Test for Equality of Variances		t-test result		
				F	Sig.	t	Sig.	
HS	Nuclear	3.029	.819	Equal variances assumed	3.687	.056	.490	.624
	Joint family	2.978	.931	Equal variances not assumed			.457	.649
SS	Nuclear	3.665	.666	Equal variances assumed	.157	.693	.341	.733
	Joint family	3.637	.694	Equal variances not assumed			.334	.739
TD	Nuclear	2.637	.952	Equal variances assumed	.016	.900	-.755	.450
	Joint family	2.725	.933	Equal variances not assumed			-.764	.446
CGA	Nuclear	3.350	1.036	Equal variances assumed	.538	.464	.958	.338
	Joint family	3.227	1.056	Equal variances not assumed			.948	.345
QWL	Nuclear	3.226	.490	Equal variances assumed	.053	.818	.238	.812
	Joint family	3.212	.490	Equal variances not assumed			.239	.812

Source: Primary Data

**Significant at the 1% level of significance

*Significant at the 5% level of significance

T test is used to check the significant difference between joint family and nuclear family regarding the factors of QWL. Equality of population variance is measured with Levene's test of equality of variance which shows the result that all the factors except for work life balance having a P value greater than 0.01 or 0.05 which proves the assumption of equality of variance. So, the test value and significance value corresponding to the equality of variance assumed is selected for mean comparison but about work life balance test value and significance value corresponding to equal variance not assumed is considered for mean comparison. The comparison of mean value points out that there is no significant difference in overall QWL score between workers from joint family and nuclear family (p value=.812) which states that H₀ is accepted. Although a significant difference is observed in work life balance (p value=.009), where workers from joint family reported slightly better balance than those from nuclear family but other factors do not show significant variance. Therefore it can be concluded that type of family has only a limited influence on specific aspects like work life balance, but it does not significantly affect the overall QWL of sanitation workers.

5.9.6 Influence of Employment Status on Quality of Work Life of Sanitation Workers

Permanent and temporary employment status plays an important role in determining QWL. Workers may experience different level of job security, benefits and organizational support, which in turn influence their overall work satisfaction and well-being (Khera, S., 2017a). Differences in employment status significantly affect employees' perception of their Quality of Work Life, as contractual or temporary workers often face job insecurity, lower compensation, and limited career growth opportunities compared to permanent employee (Garg, P & Rastogi, R., 2006). To check the effect of employment status of sanitation workers on quality of work life, the following hypothesis is formulated and tested.

H₀: There is no significant difference in the quality of work life among sanitation workers according to their employment status.

H1: There is a significant difference in the quality of work life among sanitation workers according to their employment status.

To test the hypothesis, an independent samples t-test is applied based on the assumption of homogeneity of population variance. This assumption is verified using Levene's test for equality of variances. The results are presented below

Table 5.16

Employment status wise comparison of Quality of Work Life

Dimen- sions	Employment Status	Mean	SD	Levene's Test for Equality of Variances		t-test result	
					F Sig.	t	Sig.
WC	Permanent	3.816	.526	Equal variances assumed	.376 .540	-.447	.655
	Temporary	3.845	.518	Equal variances not assumed		-.451	.653
CO	Permanent	3.055	.787	Equal variances assumed	2.727 .099	4.425**	.000
	Temporary	2.613	.892	Equal variances not assumed		4.129**	.000
WL	Permanent	3.129	.872	Equal variances assumed	5.057* .025	-1.400	.162
	Temporary	3.286	1.021	Equal variances not assumed		-1.283	.202
WLB	Permanent	3.194	.822	Equal variances assumed	.302 .583	.356	.722
	Temporary	3.158	.829	Equal variances not assumed		.354	.724
JS	Permanent	3.420	.764	Equal variances assumed	89.26** .000	8.098**	.000
	Temporary	2.536	1.221	Equal variances not assumed		6.323**	.000
HS	Permanent	3.075	.813	Equal variances assumed	8.082** .005	2.460*	.014
	Temporary	2.821	.924	Equal variances not assumed		2.292*	.024

Dimen- sions	Employment Status	Mean	SD	Levene's Test for Equality of Variances		t-test result	
					F Sig.	t	Sig.
SS	Permanent	3.692	.614	Equal variances assumed	12.06**	1.781	.076
	Temporary	3.545	.835	Equal variances not assumed		1.508	.134
TD	Permanent	2.716	.955	Equal variances assumed	2.767	2.287*	.023
	Temporary	2.451	.897	Equal variances not assumed		2.367	.019
CGA	Permanent	3.541	.863	Equal variances assumed	58.26**	8.271**	.000
	Temporary	2.564	1.237	Equal variances not assumed		6.813**	.000
QWL	Permanent	3.293	.448	Equal variances assumed	10.78**	5.383**	.000
	Temporary	2.980	.548	Equal variances not assumed		4.819**	.000

Source: Primary Data

**Significant at the 1% level of significance

*Significant at the 5% level of significance

In the table 5.16 it seen that factors of QWL and employment status of sanitation workers reveals a noticeable variation between permanent workers and temporary workers. As per the result of Levene's test, equal variation assumption is satisfied for the factors working condition, compensation, work life balance and training and development. Other factors show unequal variance which means different perception among two groups. The result of t test depicts that significant differences were observed in compensation, job security, health and safety, training and development, career growth and advancements and overall QWL, where $P < 0.05$, hence null hypothesis there is no significant difference in QWL according to the employment status is rejected for these factors.

On the other hand, working conditions, workload, work life balance and social support and workplace relationship having p value greater than 0.05, accepting of H0 suggesting that these factors do not differ significantly between temporary and permanent workers. Mean score further concluded that permanent workers experienced higher level of QWL in most factors especially job security, career growth and overall QWL compared to temporary workers. Employment stability positively influences the perception on QWL.

5.9.7 Influence of Place of residence on Quality of Work Life of Sanitation Workers

Urban and rural settings differ in terms of availability of resources, commuting conditions, social infrastructure, and work-life balance, all of which shape employees' overall job satisfaction and well-being, place of residence of workers have an important role in framing QWL of employees (Kumar, R. & Singh, A., 2018). Residential location affects employees' perception of work-related stress, job opportunities, and social support, highlighting its relevance in examining differences in QWL among workers (Sharma, P & Verma, S., 2019). Therefore, place of residence wise studies on QWL provide valuable things about how environment and social factors contribute to workers' work experience. For living place wise comparison of QWL the following hypothesis is formulated and tested.

H0: There is no significant difference in the quality of work life among sanitation workers according to their place of residence.

H1: There is a significant difference in the quality of work life among sanitation workers according to their place of residence.

To examine the hypothesis, one- way ANOVA/Welch test is applied based on the result of homogeneity of variance assumption. The homogeneity is verified by using Levene's test of Equality of Variance.

Table 5.17*Place of residence wise comparison of Quality of Work Life*

Dimensions	Descriptive Statistics of Place of residence wise comparison			Levene's test of Equality of Variance	One- way ANOVA/ Welch test		
	Urban	Semi Urban	Rural	Test statistics	Sig. value	Test Statistics	Sig. value
WC	3.892 (.472)	3.758 (.593)	3.798 (.524)	2.070	.128	1.190	.138
CO	3.033 (.793)	2.746 (.824)	3.003 (.852)	.405	.667	3.569 [*]	.029
WL	3.180 (.832)	3.285 (.852)	3.089 (.992)	5.418 ^{**}	.005	1.312	.271
WLB	3.390 (.737)	2.958 (.810)	3.135 (.861)	5.955 ^{**}	.003	8.674 ^{**}	.000
JS	3.466 (.774)	2.773 (1.191)	3.252 (.885)	23.76 ^{**}	.000	11.498 ^{**}	.000
HS	3.097 (.796)	2.892 (.869)	3.017 (.867)	2.012	.135	1.528	.218
SS	3.781 (.578)	3.478 (.632)	3.651 (.743)	4.129 [*]	.017	6.410 ^{**}	.002
TD	2.824 (.972)	2.424 (.834)	2.637 (.960)	4.663 [*]	.010	5.217 ^{**}	.006
CGA	3.449 (.889)	3.347 (1.311)	3.360 (.978)	22.53 ^{**}	.000	3.055	.059
QWL	3.346 (.436)	3.040 (.443)	3.216 (.526)	4.078 [*]	.018	12.46 ^{**}	.000

Source: Primary Data^{**}Significant at the 1% level of significance^{*}Significant at the 5% level of significance

Parentheses represent standard deviation

Levene's test of Equality of Variance shows that working conditions, compensation, health and safety have P value greater than 0.05 that means there is an equal variance assumed for the above factors, hence researcher uses one-way ANOVA. All other factors including overall QWL shows p value less than 0.05, the assumption is that there is no homogeneity therefore researcher uses Welch test. The result of one-way ANOVA and Welch test shows significant difference in several factors of QWL, compensation, work life balance, social support and workplace relationship, training and development and overall QWL indicates statistically significant difference ($P < 0.05$) shows that employee's perception of these factors varies according to their living place. The other factors like working conditions, workload, health and safety, career growth and advancements do not show significant difference ($P > 0.05$) suggesting that these aspects of QWL are perceived similarly across urban, semi urban and rural areas.

Mean score indicates that generally urban workers report higher QWL in aspects like working conditions, work life balance, job security, social support and workplace relationship and overall QWL compared to semi urban and rural workers. Semi urban workers have a lower mean score particularly in job security, work life balance and training and development which highlight that living place impacts workers access resources, social support and opportunity for professional growth.

Since there is a significant difference among the respondents with respect to compensation, post hoc test is applied to know the paired difference. The result of post hoc test is given in table 5.18

Table 5.18

Multiple Comparisons of Place of Residence on Quality of Work Life (Tukey HSD Post Hoc Test)

Tukey HSD				
Dependent Variable	(I) Place of Residence	(J) Place of Residence	Mean Difference (I-J)	Sig.
CO	Urban	Semi Urban	.28730*	.034
		Rural	.03023	.947
	Semi Urban	Urban	-.28730*	.034
		Rural	-.25707	.055

*. The mean difference is significant at the 0.05 level.

Source: Primary Data

Turkey HSD post Hoc test is conducted after one-way ANOVA for making multiple comparison of living place on QWL, the result shows that in the dimension of compensation there is significant difference existing between workers living in urban area and those living in semi-urban area ($p=0.034$). Urban sanitation workers enjoy relatively better compensation-related aspects of QWL compared to their counterparts in semi-urban and rural areas.

Table 5.19

Multiple Comparisons of Place of Residence on Quality of Work Life (Tamhane's T2 Post Hoc Test)

Tamhane				
Dependent Variable	(I) Place of Residence	(J) Place of Residence	Mean Difference (I-J)	Sig.
WLB	Urban	Semi Urban	.43241**	.000
		Rural	.25565*	.019
	Semi Urban	Urban	-.43241**	.000
		Rural	-.17676	.306
	Rural	Urban	-.25565*	.019
		Semi Urban	.17676	.306
JS	Urban	Semi Urban	.69286**	.000
		Rural	.21449	.079
	Semi Urban	Urban	-.69286**	.000
		Rural	-.47836**	.005
	Rural	Urban	-.21449	.079
		Semi Urban	.47836**	.005
SS	Urban	Semi Urban	.30331**	.001
		Rural	.13034	.249
	Semi Urban	Urban	-.30331**	.001
		Rural	-.17296	.163
TD	Urban	Semi Urban	.40009**	.004
		Rural	.18701	.267
	Semi Urban	Urban	-.40009**	.004
		Rural	-.21308	.205
QWL	Urban	Semi Urban	.30564**	.000
		Rural	.13022	.061
	Semi Urban	Urban	-.30564**	.000
		Rural	-.17542*	.019
	Rural	Urban	-.13022	.061
		Semi Urban	.17542*	.019

** . The mean difference is significant at the 0.01 level.

* . The mean difference is significant at the 0.05 level.

Source: Primary Data

Tamhane's T2 Post Hoc Test used for Multiple Comparisons of Place of Residence on Quality of Work Life after Welch test reveals that there is no difference existing between rural and semi urban workers in the matter of work life balance. Urban workers experienced a better balance between their work and personal life compared to semi urban and rural workers. Job security dimension shows that there is significant difference shown between workers in urban and semi urban workers and between semi urban and rural workers, suggesting that urban workers have higher job security feeling than semi urban workers while rural workers falling in between them.

Training and development dimension and social support dimension of QWL shows a significant difference in urban and semi urban workers. Urban workers have greater social support and better social support for growth. Urban sanitation workers feel a better QWL, rural workers feel a moderate and semi urban workers feel a lower QWL.

5.9.8 Influence of Working Place on Quality of Work Life of Sanitation Workers

QWL of sanitation workers across municipalities and corporation helps to identify institutional difference in management practices, welfare measures and resource allocation that affect their well-being (Rani, M. & Murugan, K., 2020). For making a comparison of factors of QWL with their working place the following hypothesis is formulated and tested.

H0: There is no significant difference in the quality of work life among sanitation workers according to their working place.

H1: There is a significant difference in the quality of work life among sanitation workers according to their working place.

For testing the hypothesis independent sample t-test is used according to homogeneity assumption is of population variance. Levene's test for equality of variance is used to check this assumption. The results of the test are given below

Table 5.20*Working Place wise comparison of Quality of Work Life*

Dimensions	Working Place	Mean	SD	Levene's Test for Equality of Variances		t-test result		
				F	Sig.	t	Sig.	
WC	Corporation	3.793	.549	Equal variances assumed	.910	.341	-1.188	.236
	Municipality	3.857	.493	Equal variances not assumed			-1.197	.232
CO	Corporation	2.874	.861	Equal variances assumed	2.954	.087	-2.084*	.038
	Municipality	3.051	.786	Equal variances not assumed			-2.097*	.037
WL	Corporation	3.167	.920	Equal variances assumed	1.572	.211	.059	.953
	Municipality	3.162	.897	Equal variances not assumed			.059	.953
WLB	Corporation	3.064	.793	Equal variances assumed	.076	.782	-3.152**	.002
	Municipality	3.327	.835	Equal variances not assumed			-3.141**	.002
JS	Corporation	3.135	.966	Equal variances assumed	.089	.766	-1.914	.056
	Municipality	3.323	.944	Equal variances not assumed			-1.917	.056

Dimensions	Working Place	Mean	SD	Levene's Test for Equality of Variances		t-test result	
				F	Sig.	t	Sig.
HS	Corporation	2.986	.808	Equal variances assumed	6.788*	-.796	.427
	Municipality	3.055	.885	Equal variances not assumed		-.791	.430
SS	Corporation	3.265	.690	Equal variances assumed	.272	-.023	.981
	Municipality	3.660	.652	Equal variances not assumed		-.023	.981
TD	Corporation	2.620	.900	Equal variances assumed	3.416	-.800	.424
	Municipality	2.698	1.000	Equal variances not assumed		-.794	.428
CGA	Corporation	3.210	1.059	Equal variances assumed	2.858	-2.271*	.024
	Municipality	3.452	1.006	Equal variances not assumed		-2.279*	.023
QWL	Corporation	3.167	.501	Equal variances assumed	1.810	-2.393*	.017
	Municipality	3.287	.469	Equal variances not assumed		-2.403*	.017

Source: Primary Data

**Significant at 1% level of significance

*Significant at 5% level of significance

Mean value indicates that sanitation workers posted in municipalities experienced a better QWL compared to workers in corporations. QWL dimensions like working condition, compensation, work life balance, job security, health and safety, social support, training and development, career growth and advancements and overall QWL mean score is higher for municipal workers than for corporation workers. The result of Levene's test indicates that homogeneity of variance was satisfied for most dimensions ($p > 0.05$) except for health and safety ($p = 0.10$) which shows unequal variance. The result of independent sample t- test shows that there is significant difference exist between municipality and corporation workers in the dimension of compensation ($p < 0.05$), work life balance ($p < 0.01$), Career Growth and Advancement ($p < 0.05$), and the overall Quality of Work Life ($p < 0.05$). Municipality workers experience relatively better QWL in terms of pay, work life balance, career growth and opportunities and overall QWL. Other dimensions of QWL, no statistically significant difference was found ($p > 0.05$) suggesting that both corporation and municipality sanitation workers perceive these aspects of their work life similarly.

5.9.9 Influence of Marital Status on Quality of Work Life of Sanitation Workers

Marital status of employees often differs in their social responsibility, financial commitments and emotional support systems which can influence the work environment and job satisfaction. Marital status significantly affects work attitudes and stress levels, as married workers may prioritize job stability and work-life balance more than unmarried workers (Singh, A & Dixit, P., 2011). Married employees tend to report higher satisfaction in their work life due to greater social and emotional support (Khera, S., 2017). For marital status wise comparison of QWL the following hypothesis is formulated and tested.

H0: There is no significant difference in the quality of work life among sanitation workers according to their marital status.

H1: There is a significant difference in the quality of work life among sanitation workers according to their marital status.

To examine the hypothesis, one- way ANOVA/Welch test is applied based on the result of homogeneity of variance assumption. The homogeneity is verified by using Levene's test of Equality of Variance. For variables showing significant difference in the one-way ANOVA/Welch test, post hoc analysis is performed. Accordingly, Tukey/ Tamhane's T2 test is applied for multiple comparisons. The corresponding results are presented below

Table 5.21

Marital Status wise comparison of Quality of Work Life

Dimensions	Descriptive Statistics of Marital Status wise comparison				Levene's test of Equality of Variance		One- way ANOVA/ Welch test	
	Single	Married	Divorced	Widow	Test statistics	Sig. value	Test Statistics	Sig. value
WC	3.747 (.625)	3.813 (.528)	3.942 (.253)	3.993 (.405)	1.010	.388	1.165	.323
CO	2.987 (.717)	2.951 (.822)	2.916 (1.301)	3.015 (.886)	2.695*	.046	.052	.984
WL	3.051 (.978)	3.169 (.914)	3.000 (.737)	3.303 (.822)	1.589	.192	.416	.742
WLB	3.278 (.690)	3.170 (.8501)	3.325 (.601)	3.250 (.650)	4.622**	.003	.404	.751
JS	3.261 (.797)	3.200 (.962)	3.000 (1.25)	3.600 (.913)	1.947	.122	1.390	.246
HS	2.892 (.957)	3.015 (.842)	3.320 (.619)	3.072 (.845)	2.222	.085	.648	.585
SS	3.775 (.437)	3.651 (.689)	3.066 (.729)	3.901 (.444)	1.958	.120	3.904**	.009
TD	2.564 (.908)	2.640 (.937)	2.033 (.792)	3.287 (.950)	.439	.725	4.957**	.002
CGA	3.525 (.687)	3.311 (1.071)	3.166 (1.188)	3.318 (.875)	4.128**	.007	.747	.533
QWL	3.231 (.390)	3.214 (.490)	3.085 (.575)	3.415 (.531)	1.339	.261	1.440	.231

Source: Primary Data

**Significant at the 1% level of significance

*Significant at the 5% level of significance

Parentheses represent standard deviation

The mean score of overall QWL indicates that widowed workers ($\bar{X} = 3.415$) show a slightly better QWL compared to others. Dimension wise analysis shows that widowed workers show the highest mean in working condition ($\bar{X} = 3.993$) and training and development ($\bar{X} = 3.287$) indicating relatively more favorable perception in these areas. Single and married workers recorded moderate score across most of the factors of QWL. Levene's test of equality variance shows there is no homogeneity for the factors like compensation ($p=0.46$), work life balance ($p=0.003$) and career growth and advancement ($p= 0.007$); therefore, use Welch test. All other factors of QWL prove the equality of variance, using ANOVA test to check the hypothesis. The result of hypothesis test shows that the obtained F value is not statistically significant for all dimensions, as the significant value is greater than 0.05, hence the null hypothesis is accepted across the dimensions such as working condition, compensation, work life balance, job security, health and safety, career growth and advancement and overall quality of work life. In the dimensions of social support and workplace relationship ($p= .009$) and training and development ($p=0.002$) shows significant difference suggesting that marital status influence on workers concept of social support and training and development. For majority of dimensions and overall QWL of sanitation workers, no statistically significant difference was found, showing that marital status does not have substantial effect on most aspects of QWL.

Table 5.22

Multiple Comparisons of Marital Status on Quality of Work Life (Tukey HSD Post Hoc Test)

Tukey HSD				
Dependent Variable	(I) Marital Status	(J) Marital Status	Mean Difference (I-J)	Sig.
SS	Single	Married	.12398	.797
		Divorced	.70897*	.023
		Widow	-.12587	.914
	Married	Single	-.12398	.797
		Divorced	.58499*	.032
		Widow	-.24986	.322
	Divorced	Single	-.70897*	.023
		Married	-.58499*	.032
		Widow	-.83485**	.006
	Widow	Single	.12587	.914
		Married	.24986	.322
		Divorced	.83485**	.006
TD	Single	Married	-.07668	.978
		Divorced	.53077	.422
		Widow	-.72378*	.039
	Married	Single	.07668	.978
		Divorced	.60745	.180
		Widow	-.64709*	.010
	Divorced	Single	-.53077	.422
		Married	-.60745	.180
		Widow	-1.25455**	.003
	Widow	Single	.72378*	.039
		Married	.64709*	.010
		Divorced	1.25455**	.003

** . The mean difference is significant at the 0.01 level.

* . The mean difference is significant at the 0.05 level.

Source: Primary Data

Table 5.22 is used to exhibit the Tukey HSD Post Hoc Test result made for multiple comparisons of marital status on quality of work life which were done based on the result of one-way ANOVA. This test was conducted to check the pair wise difference in QWL dimension according to their marital status, in the dimension of social support and workplace relationship divorced workers showing significant difference with all other categories. Divorced workers reported significantly higher mean score compared to single and married workers. In the dimension of training and development, widow workers show significant difference with all other categories of workers. They experienced a lower level of training and development facilities than the other marital groups. Analysis reveals that marital status significantly influences certain dimensions of Quality of Work Life, particularly showing that divorced workers enjoy higher social support, whereas widowed workers experience comparatively lower training and development opportunities.

5.9.10 Influence of Income on Quality of Work Life of Sanitation Workers

Income level of sanitation workers plays a vital role in determining their QWL. Worker falling under higher income group may face reduced financial stress, better access to healthcare and education, which positively influence their work-life balance and performance (Das, D & Singh, R., 2019). In contrast, low-income sanitation workers often face economic insecurity, which can lead to dissatisfaction, low morale, and diminished QWL (Kumar, P. & Rout, H. S., 2020). For income wise comparison of QWL the following hypothesis is formulated and tested.

H0: There is no significant difference in the quality of work life among sanitation workers according to their income.

H1: There is a significant difference in the quality of work life among sanitation workers according to their income.

To examine the hypothesis, one- way ANOVA/Welch test is applied based on the result of homogeneity of variance assumption. The homogeneity is verified by using Levene's test of Equality of Variance. The results are presented below

Table 5.23*Income wise comparison of Quality of Work Life*

Dimensions	Descriptive Statistics of Income wise comparison						Levene's test of Equality of Variance		One- way ANOVA/ Welch test	
	Below 50000	50001-100000	100001-150000	150001-200000	200001-250000	Above 250000	Test statistics	Sig. value	Test Statistics	Sig. value
WC	3.950 (.403)	3.842 (.379)	3.866 (.550)	3.885 (.410)	3.655 (.666)	3.807 (.516)	3.63**	.003	2.635*	.027
CO	2.778 (.946)	3.012 (.862)	3.216 (.696)	2.989 (.787)	2.828 (.798)	3.108 (.963)	1.952	.085	2.555*	.027
WL	3.479 (.860)	3.291 (.931)	3.317 (.845)	3.406 (.813)	2.669 (.819)	2.850 (1.02)	1.511	.185	11.19**	.000
WLB	3.035 (.713)	3.500 (.729)	3.416 (.765)	2.226 (.713)	2.821 (.870)	3.200 (.982)	4.15**	.001	8.16**	.000
JS	2.703 (1.27)	3.235 (1.09)	3.504 (.767)	3.560 (.685)	3.082 (.814)	3.150 (.975)	20.6**	.000	7.66**	.000
HS	2.925 (.935)	3.235 (.900)	3.034 (.804)	3.072 (.791)	2.976 (.824)	2.800 (.880)	1.584	.164	1.081	.370
SS	3.398 (.917)	3.854 (.370)	3.931 (.284)	3.802 (.490)	3.454 (.773)	3.641 (.690)	15.08**	.000	9.30**	.000
TD	2.531 (.955)	2.900 (1.00)	3.026 (1.05)	2.703 (.875)	2.398 (.843)	2.516 (.888)	3.77**	.002	4.13**	.002
CGA	2.760 (1.34)	3.100 (1.01)	3.254 (.877)	3.622 (.750)	3.529 (1.00)	3.366 (1.05)	15.0**	.000	5.76**	.000
QWL	3.062 (.625)	3.330 (.519)	3.396 (.416)	3.382 (.343)	3.046 (.438)	3.160 (.533)	8.65**	.000	9.85**	.000

Source: Primary Data

**Significant at 1% level of significance

*Significant at 5% level of significance

Parentheses represent standard deviation

Income wise comparison of QWL shown in the table 5.23 reveals that there is significant variation across different income group, mean score and standard deviation of overall QWL indicates that income group of 100000 to 150000 category

having highest mean value ($\bar{X} = 3.396$) followed closely by 150000 to 200000 ($\bar{X} = 3.382$) which indicates that sanitation workers in the middle income group experienced relatively better QWL compared to both lower and higher income group. The result of Levene's test highlights that working condition, work life balance, job security, social support and workplace relationship, training and development, career growth and advancement and overall QWL violated the assumption of homogeneity of variance ($P < 0.05$), hence Welch test results were considered for interpretation. In other cases, one way ANOVA is used. The result reveals that except for the dimensions of health and safety all other factors have p value less than 0.05 which indicates a statistically significant difference in the mean score of QWL dimensions that means income level has an influence on the factors of QWL except for health and safety dimension. Health and safety factors did not show significant difference ($p=0.370$) indicate that income level does not have a major influence on the health and safety condition of workers.

For variables showing significant difference in the one-way ANOVA/Welch test, post hoc analysis is performed. Accordingly, Tukey/ Tamhane's T2 test is applied for multiple comparisons. The corresponding results are presented below

Table 5.24

Multiple Comparisons of Annual Income on Quality of Work Life (Tukey HSD Post Hoc Test)

Tukey HSD				
Dependent Variable	(I) Family Income	(J) Family Income	Mean Difference (I-J)	Sig.
CO	Below 50000	50000 to 100000	-.23385	.721
		100001 to 150000	-.43829*	.034
		150001 to 200000	-.21037	.621
		200001 to 250000	-.04979	.999
		Above 250000	-.32969	.623
	100001 to 150000	Below 50000	.43829*	.034
		50000 to 100000	.20443	.823
		150001 to 200000	.22792	.539

Tukey HSD				
Dependent Variable	(I) Family Income	(J) Family Income	Mean Difference (I-J)	Sig.
WL		200001 to 250000	.38850*	.040
		Above 250000	.10860	.996
	Below 50000	50000 to 100000	.18750	.885
		100001 to 150000	.16171	.894
		150001 to 200000	.07257	.995
		200001 to 250000	.80923**	.000
		Above 250000	.62917*	.048
	50000 to 100000	Below 50000	-.18750	.885
		100001 to 150000	-.02579	1.000
		150001 to 200000	-.11493	.981
		200001 to 250000	.62173**	.002
		Above 250000	.44167	.409
	100001 to 150000	Below 50000	-.16171	.894
		50000 to 100000	.02579	1.000
		150001 to 200000	-.08913	.988
		200001 to 250000	.64753**	.000
		Above 250000	.46746	.271
	150001 to 200000	Below 50000	-.07257	.995
		50000 to 100000	.11493	.981
		100001 to 150000	.08913	.988
		200001 to 250000	.73666**	.000
		Above 250000	.55659	.090
	200001 to 250000	Below 50000	-.80923**	.000
		50000 to 100000	-.62173**	.002
		100001 to 150000	-.64753**	.000
		150001 to 200000	-.73666*	.000
		Above 250000	-.18007	.955
	Above 250000	Below 50000	-.62917*	.048
		50000 to 100000	-.44167	.409
		100001 to 150000	-.46746	.271
		150001 to 200000	-.55659	.090
		200001 to 250000	.18007	.955

** . The mean difference is significant at the 0.01 level.

* . The mean difference is significant at the 0.05 level.

Source: Primary Data

The researcher conducted a Tukey HSD post hoc analysis was conducted to determine the specific differences in the Quality of Work Life (QWL) dimensions among sanitation workers with varying levels of annual family income. Significant differences were observed between some income groups under the dimension of compensation, family income of 100001 to 150000 obtained higher mean score compared to income below 50000 ($p = 0.034$) and 200001 to 250000 ($p = 0.040$). Workers in the middle-income range show better satisfaction than lowest and higher income category. In the dimension of workload shows that workers with family income ranges 200001 to 250000 reported higher mean score than all other groups. Workers with higher family income have heavy workload as compared to lower income category.

Table 5.25

Multiple Comparisons of Annual Income on Quality of Work Life (Tamhane's T2 Post Hoc Test)

Tamhane				
Dependent Variable	(I) Family Income	(J) Family Income	Mean Difference (I-J)	Sig.
WC	Below 50000	50000 to 100000	.10804	.941
		100001 to 150000	.08468	.997
		150001 to 200000	.06549	.997
		200001 to 250000	.29543**	.007
		Above 250000	.14375	.990
	200001 to 250000	Below 50000	-.29543**	.007
		50000 to 100000	-.18739	.439
		100001 to 150000	-.21075	.360
		150001 to 200000	-.22994	.059
		Above 250000	-.15168	.990
WLB	Below 50000	50000 to 100000	-.46484*	.030
		100001 to 150000	-.38151	.064
		150001 to 200000	-.36869*	.028

Tamhane				
Dependent Variable	(I) Family Income	(J) Family Income	Mean Difference (I-J)	Sig.
JS	50000 to 100000	200001 to 250000	.21408	.742
		Above 250000	-.16484	1.000
		Below 50000	.46484*	.030
		100001 to 150000	.08333	1.000
		150001 to 200000	.09615	1.000
		200001 to 250000	.67892**	.000
	150001 to 200000	Above 250000	.30000	.982
		Below 50000	.36869*	.028
		50000 to 100000	-.09615	1.000
		100001 to 150000	-.01282	1.000
		200001 to 250000	.58277**	.000
		Above 250000	.20385	.999
	200001 to 250000	Below 50000	-.21408	.742
		50000 to 100000	-.67892**	.000
		100001 to 150000	-.59559**	.000
		150001 to 200000	-.58277**	.000
		Above 250000	-.37892	.855
	Below 50000	50000 to 100000	-.53188	.332
		100001 to 150000	-.80164**	.001
		150001 to 200000	-.85731**	.000
		200001 to 250000	-.37923	.430
		Above 250000	-.44688	.814
		Below 50000	.80164**	.001
	100001 to 150000	50000 to 100000	.26976	.948
		150001 to 200000	-.05568	1.000
		200001 to 250000	.42241*	.015
		Above 250000	.35476	.910
	150001 to 200000	Below 50000	.85731**	.000

Tamhane				
Dependent Variable	(I) Family Income	(J) Family Income	Mean Difference (I-J)	Sig.
SS		50000 to 100000	.32544	.753
		100001 to 150000	.05568	1.000
		200001 to 250000	.47809**	.000
		Above 250000	.41044	.744
		Below 50000	.37923	.430
	200001 to 250000	50000 to 100000	-.15265	1.000
		100001 to 150000	-.42241*	.015
		150001 to 200000	-.47809**	.000
		Above 250000	-.06765	1.000
		Below 50000	-.45573*	.010
	Below 50000	100001 to 150000	-.53278**	.000
		150001 to 200000	-.40376*	.027
		200001 to 250000	-.05581	1.000
		Above 250000	-.24323	.973
		Below 50000	.45573*	.010
	50000 to 100000	100001 to 150000	-.07705	.990
		150001 to 200000	.05197	1.000
		200001 to 250000	.39992**	.001
		Above 250000	.21250	.971
		Below 50000	.53278**	.000
	100001 to 150000	50000 to 100000	.07705	.990
		150001 to 200000	.12902	.470
		200001 to 250000	.47697**	.000
		Above 250000	.28955	.723
		Below 50000	.40376*	.027
	150001 to 200000	50000 to 100000	-.05197	1.000
		100001 to 150000	-.12902	.470
		200001 to 250000	.34795**	.003

Tamhane				
Dependent Variable	(I) Family Income	(J) Family Income	Mean Difference (I-J)	Sig.
TD	200001 to 250000	Above 250000	.16053	.998
		Below 50000	.05581	1.000
		50000 to 100000	-.39992**	.001
		100001 to 150000	-.47697**	.000
		150001 to 200000	-.34795**	.003
		Above 250000	-.18742	.994
	100001 to 150000	Below 50000	.49521	.092
		50000 to 100000	.12646	1.000
		150001 to 200000	.32316	.518
		200001 to 250000	.62776**	.002
		Above 250000	.50979	.453
	200001 to 250000	Below 50000	-.13256	.999
		50000 to 100000	-.50131	.098
		100001 to 150000	-.62776**	.002
		150001 to 200000	-.30460	.203
		Above 250000	-.11797	1.000
CGA	Below 50000	50000 to 100000	-.33958	.906
		100001 to 150000	-.49355	.211
		150001 to 200000	-.86229**	.000
		200001 to 250000	-.76900*	.002
		Above 250000	-.60625	.478
	150001 to 200000	Below 50000	.86229**	.000
		50000 to 100000	.52271	.069
		100001 to 150000	.36874	.107
		200001 to 250000	.09330	1.000
		Above 250000	.25604	.996
	200001 to 250000	Below 50000	.76900**	.002
		50000 to 100000	.42941	.322

Tamhane				
Dependent Variable	(I) Family Income	(J) Family Income	Mean Difference (I-J)	Sig.
QWL		100001 to 150000	.27544	.643
		150001 to 200000	-.09330	1.000
		Above 250000	.16275	1.000
	Below 50000	50000 to 100000	-.26768	.265
		100001 to 150000	-.33406**	.009
		150001 to 200000	-.32044*	.005
		200001 to 250000	.01622	1.000
		Above 250000	-.09760	1.000
	100001 to 150000	Below 50000	.33406**	.009
		50000 to 100000	.06638	1.000
		150001 to 200000	.01362	1.000
		200001 to 250000	.35028**	.000
		Above 250000	.23646	.717
	150001 to 200000	Below 50000	.32044**	.005
		50000 to 100000	.05276	1.000
		100001 to 150000	-.01362	1.000
		200001 to 250000	.33666**	.000
		Above 250000	.22284	.745
	200001 to 250000	Below 50000	-.01622	1.000
		50000 to 100000	-.28390*	.049
		100001 to 150000	-.35028**	.000
		150001 to 200000	-.33666**	.000
		Above 250000	-.11382	.999

** . The mean difference is significant at the 0.01 level.

* . The mean difference is significant at the 0.05 level.

Source: Primary Data

The Tamhane's T2 post hoc test was applied to identify specific differences in the factors of Quality of Work Life among sanitation workers belonging to

different annual family income groups. In the factor of working condition significant difference were observed between the income group of below 50000 and income group of 200001 to 250000 ($p=0.007$) indicating that higher income workers show better satisfaction with working conditions. In the factor of work life balance significant difference shown among multiple income groups, workers earning below 50000 had significant difference with 50000 to 100000 ($p=0.03$) and 150001 to 200000 ($p=0.028$), income group of 50000 to 100000 shows difference with below 50000 ($p=0.03$) and with 200001 to 250000 ($p=0.00$), income level of 150001 to 200000 shows difference with below 50000 ($p=0.028$ and with ($p=0.00$) and the income group of 200001 to 250000 shows difference with 50000 to 100000 ($p=0.000$), with 100001 to 150000 ($p=0.00$) and with 150001 to 200000 ($p=0.00$). These findings show that better income enhances work–life balance, likely due to improved financial stability and reduced work stress. In the area of job security dimension significant difference were found between several income groups, workers in higher income groups show a higher job security feeling. Workers below 50000 show difference with income group of 100001 to 150000 ($p=0.001$) and with 150001 to 200000 ($p=0.00$), income group of 100001 to 150000 show difference with 200001 to 250000 ($p=0.015$) and income group of 150001 to 200000 shows difference with 200001 to 250000 ($p=0.00$). Notable differences were found between lower- and higher-income groups in the matter of social support and workplace relationships; the result shows that financial well-being contributes to better social relationships and community support. In the area of training and development workers in the middle-income range perceive higher satisfaction than some higher-income categories. Workers with better income levels experience greater opportunities and satisfaction related to career growth and advancement. Finally in overall QWL higher family income is associated with a higher overall Quality of Work Life among sanitation workers. Sanitation workers in the higher income brackets (above 100,000) generally enjoy better work condition, job security, social support, work–life balance, and career advancement, reflecting that economic stability plays a crucial role in enhancing their overall quality of work life.

5.10 Conclusion

This chapter deals with demographic profile and factors affecting the quality of work life of sanitation workers in Kerala. 380 samples were selected for the study which shows that backward class dominating in among the respondents but ancestral type of job nature is not prevalent in Kerala. Workers shows a moderate level of quality of work life, in certain dimensions like working condition and social support they shows a high level of satisfaction but in all other dimensions they show an average or below average level of satisfaction towards their QWL. Age wise difference in quality of work life can be observed, the upper aged workers shows their dissatisfaction in the matter of remuneration while lower aged shows their discomfort in the area of job security which means they are afraid of the existence of this job in the public sector. Workers posted in municipalities shows some better QWL compared to workers in corporations.

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Chapter 6

Sanitation Worker's Perception on Quality of Work Life

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6.1 Introduction

The job of sanitation worker is inevitable, especially in urban areas, yet their job is often neglected and undervalued by society. In the previous chapter factors affecting quality of work life of sanitation workers were analyzed, now in this chapter researcher is trying to explore the perception of sanitation workers regarding their QWL is going to discuss. It is important because it shows how they feel about their working conditions, remuneration, job safety, dignity and support from the authority. Previous studies shows that the workers frequently face unsafe environment, low social recognition and job security which can negatively affect how they view their work (Mishra, S., 2019).

In order to measure the perception towards QWL, the researcher uses three variables, they are Fairness and Equity (FE), Work Motivation (WM) and Expectation and Beliefs (EB) based on literature reviews. In a study exploring employee perception, fairness and equity and work motivation as key variables and found that both had a significant positive relationship with employees' perception of QWL, showing that these factors directly contribute to a better workplace experience (Shrivastava, R., 2019). Another researcher examined employees' expectations and beliefs as psychological factors influencing QWL, finding that positive expectations significantly improved job satisfaction and perception of workplace well-being (Chandrashu, S., 2012).

The present chapter is divided into three sections,

Section I - Perception regarding Quality of Work Life.

Section II - Comparison of perception across demographic groups

Section III - The impact of perception level on QWL.

To do the demographic group wise comparison, Age, Gender, Social Class, Family Type, Education, Employment Status, Type of job, Place of living, Marital Status and Family Income are considered.

6.2 Objectives

- To measure the Perception of Sanitation Workers towards Quality of Work Life (QWL).

6.3 Hypotheses

- ☐ H1₃: There is an average level of perception of sanitation workers regarding their quality of work life.
- ☐ H1₄: There is a significant difference in the perception among sanitation workers according to their demographic classifications.
- ☐ H1₅: Perception level has significant impact on QWL

6.4 Methodology and Database

To achieve the objectives of this chapter, primary data is collected from sanitation workers using a pretested structured questionnaire. A total of 380 sample sanitation workers are selected for the research.

To measure the perception of sanitation workers regarding their quality of work life, the study employs descriptive statistics and one-sample t-test. Additionally, a comparative analysis of workers' perceptions is carried out across different demographic categories of sanitation workers using the independent samples t-test and either one-way ANOVA or the Welch test, depending on the homogeneity of variance. Levene's test of equality of variances is applied to assess this assumption. Furthermore, Tukey or Tamhane's T2 post-hoc tests are used to examine multiple comparisons of independent variables where significant differences in quality of work life are observed.

Structural Equation Modeling (SEM) is employed to check the impact of perception on QWL. The results are presented in the following pages in the order of descriptive statistics, one-sample t-test and test of mean difference, its post-hoc analysis and structural equation modeling.

6.5 Variables of the Study**Table 6.1***Showing the Variables used for the study on workers perception of QWL*

Construct	Dimensions	Type of questions
Perception level	Fairness and Equity (FE), Work Motivation (WM) and Expectation and Beliefs (EB)	5 Point Likert Scale Questions

*Source: Literature Review***6.6 Workers' Perception on Quality of Work Life**

Here the perception level of sanitation workers towards QWL is evaluated by using descriptive statistics and one sample t-test. To measure the perception level, fairness & equity, work motivation and expectation & belief are explored and confirmed as different components.

Table 6.2*Descriptive Statistics of perception of Sanitation Workers*

Dimension of perception on QWL	Mean	Std. Deviation
Fairness and Equity		
Fare distribution of work	3.5553	.90998
Supervisors are unbiased	3.3868	.98019
Fare recognition for Contributions	3.2632	1.03205
Equitable distribution of equipment	3.4947	.86715
Equal respect and dignity for all workers	3.6000	.82699
Equal training and development opportunities	3.4079	.98240
Fair compensation and working hours	3.3421	.98742
Work Motivation		
Self-motivated	3.7105	.85051
Sufficient respect at work	3.6316	.89917
Passionate about public health	3.9553	.74125

Dimension of perception on QWL	Mean	Std. Deviation
Opportunity for socialization	3.9237	.71690
Expectation and Believes		
Expectation about working environment	3.3342	.96448
Expectation about remuneration	3.3053	.97811
Expectation about Work load	3.1658	1.08790
Expectation about work life balance	3.0947	.97541
Believe about job security	2.9974	1.21229
Health and safety are given sufficient importance by authorities	2.9211	1.08435
Social support and work place relationship	3.4211	.98623
Expectation about training and development	2.9342	1.07668
Believe about career growth and advancements	3.0079	1.06884

Source: Primary Data

Table 6.2 shows the mean and standard deviation for various statements coming under three different variables used for studying sanitation workers perception regarding QWL. There are seven statements used for measuring equity and fairness feeling of employees in workplace. All the statements having mean value more than 3 and standard deviation less than 1 except for Recognition and appreciation for contribution are distributed fairly among the workers (SD = 1.03205) which shows that mean value is more accurate and which shows the character of population. Employees are generally feeling social respect in workplace ($\bar{X} = 3.60$), equitable distribution of work ($\bar{X} = 3.55$) and equal allocation of equipment ($\bar{X} = 3.49$). Workers feel less comfort in recognition and appreciation ($\bar{X} = 3.26$) and in compensation and working hours ($\bar{X} = 3.34$). In all workers experienced a moderate level of fairness and equity, but improvement in compensation, recognition and career related opportunity would improve their perceived quality of work life. Work motivation aspect of perception shows a positive attitude among the workers, highest mean score ($\bar{X} = 3.95$) is obtained by passionate about the impact of their work on public health and safety followed closely by the perception that they have enough opportunity for socialization in their

work ($\bar{X} = 3.92$), suggesting that interaction with colleagues contributes positively to their motivation. All other two statements having mean value greater than 3.5 and standard deviation less than 1 show that work motivation dimension of perception positively contributes to their perception of Quality of Work Life. Expectation and belief aspect of perception of sanitation workers was used to measure workers perception towards various factors of quality of work life; the result indicates that workers have a moderate level of agreement. Interpersonal relationship in the workplace is positive ($\bar{X} = 3.42$), but working environment ($\bar{X} = 3.33$) and compensation ($\bar{X} = 3.30$) are moderately meets their expectations. However, the lower mean value for their expectation about workload, work life balance, career growth opportunities, health and safety and training and development aspects of QWL indicates that workers feel less confidence, strengthening these would improve workers beliefs on authority support and enhance their overall perception of QWL.

Overall view of the three variables fairness and equity, work motivation, and expectations & beliefs indicate that workers perceived their quality of work life in a moderate level. Workers feel they are treated fairly in terms of dignity, workload distribution, and access to essential tools, reflecting a reasonably positive environment of equity. The motivational aspect also shows a positive result; they recognize social importance of their work and experienced a good co-worker relationship. However, in the area of expectation and belief shows weaker response especially about job security, career development, health and compensation related expectations. Improvement in these areas is crucial to enhance their overall perception of work life.

Section I

6.6.1 Perception regarding quality of work life

In this section perception about quality of work life of sanitation workers is analyzed by using one-sample t-test as the variable is measured using five-point Likert scale. Since it is, the test value is considered as 3 and the mean score which is

above the test value defines that there will be good level of perception, if the mean value is less than test value, then there will not be good level of perception. Similarly, if the mean value is equal to test value, there will be average level of perception of sanitation workers regarding their quality of work life. Following hypothesis is formulated and tested accordingly,

H0: There is an average level of perception of sanitation workers regarding their quality of work life ($\bar{X} = 3$).

H1: There is no average level of perception of sanitation workers regarding their quality of work life ($\bar{X} \neq 3$).

Table 6.3

One Sample Statistics and Test Result of Perception

Dimensions of Perception	One-Sample Statistics			One Sample Test (Test Value = 3)		
	N	Mean	Std. Deviation	t	df	Sig. (p) value
Fairness and Equity	380	3.4357	.75164	11.300**	379	.000
Work Motivation	380	3.8053	.70001	22.425**	379	.000
Expectation and Believes	380	3.1313	.82811	3.090**	379	.002
Perception	380	3.4574	.54976	16.220**	379	.000

Source: Primary Data

Table 6.3 shows the result of one-sample t-test, the fairness and equity ($\bar{X}=3.4357$), work motivation ($\bar{X}=3.8053$), expectation & belief ($\bar{X}=3.1313$) have the mean score of greater than 3. It means these factors have good level of influence on perception of sanitation workers regarding their quality of work life. Since all the 'p' values are less than 0.01, null hypothesis is rejected at 1% level of significance. Among the three variables work motivation has the highest mean score of 3.8053, indicating that work motivation has the highest level of influence on the perception of sanitation workers.

Section II

6.7 Comparison of Perception across demographic groups

In this section of analysis, the perception level is compared among demographic groups of the respondents namely, age, gender, education, family type, job type, employment status, income etc. To conduct the analysis, independent sample t-test and One-way ANOVA are applied. Further post hoc analysis is conducted for significant mean comparison results. Prior to this, the homogeneity of population variance is assessed using Levene's test of equality of variances. The results are presented in the order of hypothesis, test results, and interpretation.

6.7.1 Age wise comparison of perception on quality of work Life of sanitation workers

Age is an important demographic factor influencing the perception of workers. Age is associated with changes in physical ability, health conditions, and work demands, which may affect perceptions related to workload, safety, and working environment (Chand, P., 2021). Here age group is classified as below 35, 35 – 45, 46-55 and above 55. For the comparison of perception on QWL among different age groups of sanitation workers, following hypothesis is formulated and tested.

H0: There is no significant difference in the perception of sanitation workers about QWL according to their age groups.

H1: There is a significant difference in the perception of sanitation workers about QWL according to their age groups.

In order to check the hypothesis, One-way ANOVA/ Welch test is applied according to the homogeneity assumption of population variance. Before that homogeneity assumption is tested with the help of Levene's test of Equality of Variance. After that, post hoc analysis is conducted for the significant result of One-way ANOVA/ Welch test. Accordingly, Tukey/Tamhane's T2 test for multiple comparisons is applied in this manner. The results are presented below.

Table 6.4*Age wise comparison of Perception*

Dimensions	Descriptive Statistics of Age wise comparison				Levene's test of Equality of Variance		One- way ANOVA/ Welch test	
	Below 35	35 - 45	46-55	above 55	Test statistics	Sig. value	Test Statistics	Sig. value
FE	3.437 (.738)	3.350 (.804)	3.444 (.706)	3.613 (.855)	.862	.461	1.135	.335
WM	3.782 (.601)	3.782 (.683)	3.796 (.699)	3.939 (.827)	.280	.840	.509	.676
EB	2.702 (.813)	2.881 (.858)	3.270 (.773)	3.381 (.787)	.716	.543	9.549**	.000
Perception	3.307 (.560)	3.338 (.545)	3.503 (.525)	3.644 (.611)	.600	.615	4.403**	.005

Source: Primary Data

**Significant at 1% level of significance

Parentheses represent standard deviation

The researcher use Levene's statistics to test the Equality of population variance, the result shows that all the dimensions and overall perception is insignificant at 5% level of significant. Further one-way ANOVA is used to test the mean comparison with the assumption of equality of population variance. The result of one-way ANOVA depicts that there is significant difference in the dimension of expectation and belief ($p = .000$) and on overall perception of workers ($p = .005$) as the 'p' value is less than 0.01, the null hypothesis is rejected at 1% level of significance. The workers of above 55 age group show significant difference in the perception about quality of work life. In the dimensions of fairness and equity ($p = .335$) and work motivation ($p = .676$), there is no age wise difference in the perception of workers, hence accept the null hypothesis.

One-way ANOVA result shows age wise difference in the dimension expectation and belief and on overall perception, researcher try to make a multiple comparison of different age groups on perception of workers with the help of Tukey

HSD Post Hoc Test. This will show the category wise difference between the variables.

Table 6.5

Multiple Comparisons of Age groups on Perception (Tukey HSD Post Hoc Test)

Tukey HSD				
Dependent Variable	(I) Age	(J) Age	Mean Difference (I-J)	Sig.
EB	Below 35	35 - 45	-.17868	.698
		46-55	-.56763**	.002
		above 55	-.67887**	.003
	35 - 45	Below 35	.17868	.698
		46-55	-.38895**	.000
		above 55	-.50019**	.007
	46-55	Below 35	.56763**	.002
		35 - 45	.38895**	.000
		above 55	-.11124	.864
	above 55	Below 35	.67887**	.003
		35 - 45	.50019**	.007
		46-55	.11124	.864
Perception	35 - 45	Below 35	.03053	.993
		46-55	-.16568	.058
		above 55	-.30678*	.018
	above 55	Below 35	.33731	.054
		35 - 45	.30678*	.018
		46-55	.14110	.463

** . The mean difference is significant at the 0.01 level.

* . The mean difference is significant at the 0.05 level.

Source: Primary Data

The table 6.5 shows the results of Tukey HSD Post Hoc Test which shows the difference between different age groups regarding expectation& belief dimension and on overall perception. In the dimension of expectation and believes difference is observed between below 35 age group shows difference with 46-55 ($p=.002$) and with above 55 age group ($p=.003$). Age group of 35-45 shows difference with 46-55($p=.000$) and with above 55 groups ($p=.007$). In case of overall perception difference observed in the group 35-45 with above 55 age group ($p=.018$). In all there exists difference in perception of workers from different age groups.

6.7.2 Gender wise comparison of Perception of sanitation workers regarding QWL

Gender shows difference in their expectation related to job security, work-life balance, career growth, safety, and organizational support (Soomro, A., 2021). In order to check the influence of gender of sanitation workers on perception about quality of work life, following hypothesis is formulated and tested.

H0: There is no significant difference in the perception of sanitation workers about QWL according to their gender.

H1: There is a significant difference in the perception of sanitation workers about QWL according to their gender.

For testing the hypothesis, independent sample t-test is used according to homogeneity assumption is of population variance. Levene's test for equality of variance is used to check this assumption. The results of the test are given below.

Table 6.6*Gender wise comparison of Perception*

Dimen- sions	Gender	Mean	SD	Levene's Test for Equality of Variances		t-test result		
				F	Sig.	t	Sig.	
FE	Male	3.411	.810	Equal variances assumed	3.534	.061	-.757	.450
	Female	3.470	.659	Equal variances not assumed			-.785	.433
WM	Male	3.843	.725	Equal variances assumed	.174	.676	1.285	.199
	Female	3.750	.660	Equal variances not assumed			1.307	.192
EB	Male	3.130	.821	Equal variances assumed	.418	.518	-.037	.970
	Female	3.133	.840	Equal variances not assumed			-.037	.970
Perception	Male	3.461	.551	Equal variances assumed	.396	.530	.181	.856
	Female	3.451	.549	Equal variances not assumed			.181	.856

Source: Primary Data

Before performing the t-test, the equality of population variance is assessed using Levene's test of equality of variances. The results indicate that the assumption of equal variance holds for all dimensions and the overall perception of sanitation workers, as the p-value is greater than 0.05. Hence, the test value and significance

value corresponding to equality of variance assumed is selected for mean comparison. Result of t-test shows that all the dimensions and overall perception of sanitation workers towards QWL, the 'p' is greater than 0.05, null hypothesis is failed to reject at 5% significant level. It is concluded that perception of sanitation workers towards QWL is same in the case of male and female.

6.7.3 Social class wise comparison of Perception of sanitation workers regarding QWL

Social class of sanitation workers is divided into forward class, other backward class and backward class, for checking relation between social classes with perception of workers about QWL following hypothesis is formulated and tested.

H0: There is no significant difference in the perception of sanitation workers about QWL according to their social class.

H1: There is a significant difference in the perception of sanitation workers about QWL according to their social class.

To examine the hypothesis, one- way ANOVA/Welch test is applied based on the result of homogeneity of variance assumption. The homogeneity assumption is verified by using Levene's test of Equality of Variance. For variables showing significant difference in the one-way ANOVA/Welch test, post hoc analysis is performed. Accordingly, Tukey/ Tamhane's T2 test is applied for multiple comparisons. The corresponding results are presented below.

Table 6.7

Social class wise comparison of Perception

Dimensions	Descriptive Statistics of Social class wise comparison			Levene's test of Equality of Variance		One- way ANOVA/ Welch test	
	Forward Class	Other Backward Class	Backward Class	Test statistics	Sig. value	Test Statistics	Sig. value
FE	3.462 (.792)	3.453 (.648)	3.412 (.801)	2.283	.103	.163	.850
WM	3.873 (.649)	3.878 (.470)	3.726 (.833)	11.59**	.000	2.164	.118
EB	3.275 (.740)	3.105 (.849)	3.087 (.846)	1.982	.139	1.489	.227
Perception	3.537 (.527)	3.478 (.482)	3.408 (.598)	1.735	.178	1.612	.201

Source: Primary Data

**Significant at 1% level of significance

Parentheses represent standard deviation

Levene's test result shows that except for the variable work motivation all other variables and overall perception have equal population variance ($p > 0.05$), then the researcher uses one-way ANOVA and in case of work motivation Welch Test is used for testing the hypothesis. One-way ANOVA result indicates that there is no significant difference in the perception of sanitation workers regarding QWL according to their social class ($p > 0.05$). Welch test result on work motivation dimension of perception shows that 'p' value is greater than 0.05, hence the null hypothesis is failed to be rejected. Hence it is concluded that different social classes do not show any difference in the perception of sanitation workers regarding their QWL.

6.7.4 Family Type wise comparison of Perception of sanitation workers regarding QWL

To check the influence of family type of sanitation workers on perception about quality of work life, the under mentioned hypothesis is formulated and tested.

H0: There is no significant difference in the perception of sanitation workers about QWL according to their family type.

H1: There is a significant difference in the perception of sanitation workers about QWL according to their family type.

For testing the hypothesis, independent sample t-test is used according to homogeneity assumption is of population variance. Levene's test for equality of variance is used to check this assumption. The results of the test are given below.

Table 6.8

Family Type wise comparison of Perception

Dimensions	Family Type	Mean	SD	Levene's Test for Equality of Variances		t-test result		
				F	Sig.	t	Sig.	
FE	Nuclear	3.399	.766	Equal variances assumed	2.921	.088	1.754	.080
	Joint family	3.561	.687	Equal variances not assumed			1.863	.064
WM	Nuclear	3.803	.718	Equal variances assumed	.400	.528	.097	.923
	Joint family	3.811	.636	Equal variances not assumed			.104	.917
EB	Nuclear	3.123	.862	Equal variances assumed	7.66**	.006	.356	.722
	Joint family	3.159	.701	Equal variances not assumed			.399	.691
Perception	Nuclear	3.442	.577	Equal variances assumed	8.93**	.003	1.017	.310
	Joint family	3.510	.438	Equal variances not assumed			1.181	.239

Source: Primary Data

**Significant at 1% level of significance

Table 6.8 shows how nuclear and joint family system affects up on the perception of sanitation workers about their QWL. Independent sample t-test is used to check the significant difference between joint and nuclear family regarding their perception. Equality of variance is tested for different dimensions of perception and is tested with Levene's test of equality of variance. It shows that equal variance assumption is taken for fairness & equity dimension and for work motivation dimensions because the 'p' value is greater than 0.05. In the case of the expectation and belief dimension and for overall perception 'p' value is less than 0.05, hence equal variance not assumed is considered for mean comparison. In the case of t-test, the 'p' values for all the dimensions are greater than 0.05, null hypothesis is accepted, which means there is no difference in the perception of workers from nuclear and joint family.

6.7.5 Education wise comparison of perception of sanitation workers regarding QWL

Examining the sanitation workers' perception regarding quality of work life across different educational levels is essential for understanding how knowledge, skill and social cognitive factors shape workplace experience. Educational achievements of employee influenced on their expectation, awareness of rights, job aspirations and ability to cope with work place demand (Kumar, R. & Mohan, S., 2020). Workers with higher education may have greater sensitivity toward issues such as autonomy, work-life balance, safety, and opportunities for growth, while those with lower educational levels may prioritize job security and stable income (Khera, S., 2019). Educational level comparison of workers helps to understand their working conditions and satisfaction, ultimately contributing to improved workplace effectiveness.

Educational level of sanitation workers is classified as below 10th standard, 10th to 12th standard and graduates. For making a comparison of perception of sanitation workers in different educational qualifications the following hypothesis is formulated and tested.

H0: There is no significant difference in the perception of sanitation workers about QWL according to their educational level.

H1: There is a significant difference in the perception of sanitation workers about QWL according to their educational level.

To test the hypothesis, a one-way ANOVA or Welch test is applied based on the assumption of homogeneity of population variance. Prior to this, Levene's test of equality of variances is used to assess the assumption. The results are presented below.

Table 6.9

Education wise comparison of Perception

Dimensions	Descriptive Statistics of Education wise comparison			Levene's test of Equality of Variance		One- way ANOVA/ Welch test	
	Upto 10 th	10 th to 12 th	Graduate	Test statistics	Sig. value	Test Statistics	Sig. value
FE	3.484 (.851)	3.417 (.734)	3.584 (.444)	1.021	.361	.453	.636
WM	3.557 (.915)	3.871 (.632)	3.704 (.332)	7.815**	.000	4.566*	.019
EB	3.168 (.816)	3.107 (.840)	3.525 (.400)	4.297*	.014	.5025*	.013
Perception	3.403 (.654)	3.465 (.582)	3.604 (.261)	3.846*	.022	1.805	.182

Source: Primary Data

**Significant at 1% level of significance

*Significant at 5% level of significance

Parentheses represent standard deviation

Levene's test of equality of variance shows that fairness and equity dimension of perception is insignificant at 5% level of significance, hence one-way ANOVA is used for mean comparison with the assumption that equality of population variance. The result of ANOVA (p value=0.636) shows that there is no significant difference in the fairness and equity dimension of perception of

sanitation workers according to their educational level. Levene's results for work motivation ($p = 0.000$), expectation and beliefs ($p = 0.014$) and overall perception ($p = 0.022$) show that these are significant at 5% level of significant hence Welch test is used for mean comparison with the assumption that there is no equality of population variance. The result of Welch test about work motivation ($p = 0.019$) and expectation and beliefs ($p = 0.013$) dimension of perception shows that 'p' value is less than 0.05, hence reject the null hypothesis, which means there is difference in these dimensions of perception of workers according to their educational qualification. But the result of overall perception (p value = 0.182) indicates that there is no difference in the overall perception of sanitation workers regarding their different educational level.

The welch test results about work motivation and expectation & belief show significant difference according to their educational level, here the study tries to make a multiple comparison of different educational levels on the above two dimensions with the help of Tamhane's T2 Post Hoc Test. This will show the category wise difference between the variables.

Table 6.10

Multiple Comparisons of Education levels on Perception (Tamhane's T2 Post Hoc Test)

Tamhane					
Dependent Variable	(I) Education	(J) Education	Mean Difference (I-J)	Std. Error	Sig.
WM	Upto 10th	10th to 12	-.31375*	.11262	.019
		Graduate	-.14711	.14611	.686
EB	10th to 12	Below 10th	-.06082	.10681	.921
		Graduate	-.41791*	.13040	.020

*. The mean difference is significant at the 0.05 level.

Source: Primary Data

Tamhane's post hoc test result shows that in case of work motivation dimension, the differences were observed between employees having education below 10th level with employees having education level 10th to 12th ($p=0.019$). In the dimension of expectation & belief significant differences were observed between educational level of 10th to 12th with graduate ($p \text{ value}=0.020$).

6.7.6 Employment Status wise comparison of perception of sanitation workers regarding Quality of Work Life

Employment status influences workers' expectations, motivation, and psychological attachment to the organization (Sverke, M. et al., 2018). To check the effect of employment status of sanitation workers on quality of work life, the following hypothesis is formulated and tested.

H0: There is no significant difference in the perception of sanitation workers about QWL according to their employment status.

H1: There is significant difference in the perception of sanitation workers about QWL according to their employment status.

For testing the hypothesis, independent sample t-test is used according to homogeneity assumption is of population variance. Levene's test for equality of variance is used to check this assumption. The results of the test are given below

Table 6.11*Employment status wise comparison of Perception*

Dimensions	Employment Status	Mean	SD	Levene's Test for Equality of Variances		t-test result	
				F	Sig.	t	Sig.
FE	Permanent	3.499	.677	Equal variances assumed	15.08**	3.106**	.002
	Temporary	3.215	.936	Equal variances not assumed		2.607*	.010
WM	Permanent	3.911	.530	Equal variances assumed	72.67**	5.760**	.000
	Temporary	3.435	1.024	Equal variances not assumed		4.133**	.000
EB	Permanent	3.155	.834	Equal variances assumed	1.379	1.081	.280
	Temporary	3.045	.804	Equal variances not assumed		1.103	.272
Perception	Permanent	3.522	.498	Equal variances assumed	10.07**	4.392**	.000
	Temporary	3.232	.654	Equal variances not assumed		3.785**	.000

Source: Primary Data

**Significant at 1% level of significance

*Significant at 5% level of significance

As per the result of Levene's test equality of variance, the assumption is violated for fairness and equity, work motivation and overall perception, since their 'p' values are less than 0.05 (FE; $p = .000$, WM; $p = .000$, perception; $p = .002$). It shows that variance between permanent and temporary workers are significantly

difference for these dimensions, so independent sample t-test without assuming equal variance is more appropriate. However, for the dimension, expectation and belief it is not significant ($p = .241$) which shows equal variance. T-test result shows difference between permanent workers and temporary employees in the dimension of fairness and equity, work motivation and overall perception ($p < 0.05$). In the dimension of fairness and equity permanent workers having highest mean value ($\bar{X} = 3.499$) shows better perception over temporary workers. Likewise in the areas of work motivation and overall perception permanent workers shows better perception. However, expectation and belief dimension, t-test value is not significant ($p > 0.05$) which shows that there is no statistically meaningful difference in expectation and beliefs between permanent and temporary workers.

6.7.7 Place of Residence wise comparison of perception of sanitation workers regarding Quality of Work Life

Living place wise studies on perception of sanitation workers regarding QWL provide valuable remarks about how environment and social factor contribute to workers work experience. For living place wise comparison of perception, the following hypothesis is formulated and tested.

H0: There is no significant difference in the perception of sanitation workers about QWL according to their place of residence.

H1: There is a significant difference in the perception of sanitation workers about QWL according to their place of residence.

Table 6.12*Place of residence wise comparison of Perception*

Dimensions	Descriptive Statistics of Place of residence wise comparison			Levene's test of Equality of Variance		One- way ANOVA/ Welch test	
	Urban	Semi Urban	Rural	Test statistics	Sig. value	Test Statistics	Sig. value
FE	3.480 (.755)	3.131 (.899)	3.557 (.612)	7.148**	.001	7.567**	.001
WM	3.946 (.524)	3.485 (.900)	3.854 (.660)	12.43**	.000	9.079**	.000
EB	3.279 (.787)	2.850 (.891)	3.153 (.795)	.836	.434	7.268**	.001
Perception	3.568 (.500)	3.155 (.662)	3.521 (.465)	7.990**	.000	12.69**	.000

Source: Primary Data

**Significant at 1% level of significance

Parentheses represent standard deviation

Descriptive statistics about living place wise comparison of sanitation workers shows that urban workers ($\bar{X}$ =3.568) and rural workers ($\bar{X}$ =3.521) have a better perception about QWL while comparing with semi urban ($\bar{X}$ =3.155) workers. Levine's test of equality of variance indicates that the dimensions fairness and equity ($p=0.001$), work motivation ($p=0.000$) and overall perception ($p=0.000$) variance were not equal so we use Welch test is used for testing the hypothesis. The result of Welch for fairness and equity, work motivation and overall perception indicate that living place has a meaningful influence on how sanitation workers perceive their QWL ($p<0.05$). In the dimension of expectation and beliefs Levene's test was not significant ($p>0.05$), which shows assumption of equal variance; hence use one-way ANOVA, the result of ANOVA shows significant difference ($p=0.001$). Sanitation workers from different living condition do not share the same level of perception regarding QWL, workers from semi-urban area consistently reported lower scores compared to those from urban and rural regions.

Welch test result shows living place wise difference in the dimensions of fairness and equity, work motivation and overall perception, in order to do a multiple comparison of different living place on the perception of workers Tamhane's T2 Post Hoc Test is used. This will show the category wise difference between the variables.

Table 6.13

Multiple Comparisons of Place of Residence on Perception (Tamhane's T2 Post Hoc Test)

Tamhane				
Dependent Variable	(I) Place of Residence	(J) Place of Residence	Mean Difference (I-J)	Sig.
FE	Urban	Semi Urban	.34947*	.010
		Rural	-.07681	.717
	Semi Urban	Urban	-.34947*	.010
		Rural	-.42628**	.000
	Rural	Urban	.07681	.717
		Semi Urban	.42628**	.000
WM	Urban	Semi Urban	.46118**	.000
		Rural	.09226	.452
	Semi Urban	Urban	-.46118**	.000
		Rural	-.36892**	.004
	Rural	Urban	-.09226	.452
		Semi Urban	.36892**	.004
Perception	Urban	Semi Urban	.41304**	.000
		Rural	.04685	.792
	Semi Urban	Urban	-.41304**	.000
		Rural	-.36619**	.000
	Rural	Urban	-.04685	.792
		Semi Urban	.36619**	.000

**. The mean difference is significant at the 0.01 level.

*. The mean difference is significant at the 0.05 level.

Source: Primary Data

The multiple comparison of living place of sanitation workers on the perception shows that semi-urban workers' perception about QWL is different from rural and urban workers in the dimension of fairness and equity, work motivation and overall perception ($p < 0.05$) but all these dimension workers from urban and rural do not show significant difference ($p > 0.05$).

For making multiple comparisons after ANOVA result for the dimension expectation and belief Tukey HSD Post Hoc Test is used. This will show the category wise difference between the variables.

Table 6.14

Multiple Comparisons of Place of Residence on Perception (Tukey HSD Post Hoc Test)

Tukey HSD				
Dependent Variable	(I) Place of Residence	(J) Place of Residence	Mean Difference (I-J)	Sig.
EB	Urban	Semi Urban	.42848**	.001
		Rural	.12511	.387
	Semi Urban	Urban	-.42848**	.001
		Rural	-.30337*	.016
	Rural	Urban	-.12511	.387
		Semi Urban	.30337*	.016

** . The mean difference is significant at the 0.01 level.

* . The mean difference is significant at the 0.05 level.

Source: Primary Data

Multiple comparison result of the dimension expectation and belief shows the same result as like other dimension, that is semi-urban workers shows difference in perception about QWL with both urban and rural workers ($p < 0.05$). No difference shown between urban and rural workers.

Multiple comparison of living place of the workers shows that semi-urban workers show difference in perception about QWL with both urban and rural workers, but not much difference in the perception of workers from urban and rural area.

6.7.8 Working Place wise comparison of perception of sanitation workers about Quality of Work Life

Sanitation workers from municipalities and corporations were taken for the study, changes in the working place may affect upon the perception of workers about their QWL. In order to do a comparative study about the difference in the perception of workers working in municipalities and corporations, the following hypothesis is formulated and tested.

H0: There is no significant difference in the perception of sanitation workers about QWL according to their working place.

H1: There is a significant difference in the perception of sanitation workers about QWL according to their working place.

For testing the hypothesis, independent sample t-test is used according to homogeneity assumption is of population variance. Levene's test for equality of variance is used to check this assumption. The results of the test are given below.

Table 6.15*Working Place wise comparison of Perception*

Dimensions	Working Place	Mean	SD	Levene's Test for Equality of Variances		t-test result		
				F	Sig.	t	Sig.	
FE	Corporation	3.431	.723	Equal variances assumed	1.524	.218	.120	.905
	Municipality	3.440	.784	Equal variances not assumed			.119	.905
WM	Corporation	3.801	.714	Equal variances assumed	.012	.914	.105	.916
	Municipality	3.809	.684	Equal variances not assumed			.106	.916
EB	Corporation	2.951	.821	Equal variances assumed	.751	.387	4.660**	.000
	Municipality	3.337	.788	Equal variances not assumed			4.673**	.000
Perception	Corporation	3.394	.517	Equal variances assumed	4.490*	.035	2.393*	.017
	Municipality	3.529	.577	Equal variances not assumed			2.375*	.018

Source: Primary Data

**Significant at 1% level of significance

*Significant at 5% level of significance

The Levene's test result shows that equal variance assumption is satisfied for fairness and equity ($p=0.218$), work motivation ($p=0.914$), expectation and beliefs ($p=0.387$), but for overall perception variance are significantly different ($p=0.035$). The independent sample t test result shows that there is no difference between

corporation and municipality workers in fairness and equity (p value=0.905) and work motivation (p value= 0.916), both the case ' p ' value is greater than 0.05. However, a statistically significant difference exists in Expectation and Beliefs (p =.000) and overall Perception (p value=.017), where Municipality workers report better perception scores compared to Corporation workers. These findings indicate that while both groups share similar levels of fairness and equity and motivation at work, Municipality workers tend to have more positive beliefs, expectations, and overall perception regarding their Quality of Work Life.

6.7.9 Marital Status wise comparison of perception of sanitation workers about Quality of Work Life

Marital status is an important aspect which affects the building of perception of sanitation workers regarding their quality of work life. Comparison of marital status of employees with their perception about QWL will help to make a rational judgment regarding its influence on perception. For marital status wise comparison of perception, the following hypothesis is formulated.

H0: There is no significant difference in the perception of sanitation workers about QWL according to their marital status.

H1: There is a significant difference in the perception of sanitation workers about QWL according to their marital status.

To examine the hypothesis, one- way ANOVA/Welch test is applied based on the result of homogeneity of variance assumption. The homogeneity assumption is verified by using Levene's test of Equality of Variance. For variables showing significant difference in the one-way ANOVA/Welch test, post hoc analysis is performed. Accordingly, Tukey/ Tamhane's T2 test is applied for multiple comparisons. The corresponding results are presented below.

Table 6.16*Marital Status wise comparison of Perception*

Dimensions	Descriptive Statistics of Marital Status wise comparison				Levene's test of Equality of Variance		One- way ANOVA/ Welch test	
	Single	Married	Divorced	Widow	Test statistics	Sig. value	Test Statistics	Sig. value
FE	3.697 (.377)	3.387 (.785)	3.671 (.646)	3.727 (.436)	5.627**	.001	6.505**	.002
WM	3.817 (.545)	3.790 (.733)	3.825 (.527)	4.000 (.336)	3.241*	.022	2.078	.124
EB	3.222 (.621)	3.098 (.839)	3.277 (.600)	3.444 (.922)	2.446	.064	1.436	.232
Perception	3.579 (.392)	3.425 (.565)	3.591 (.509)	3.723 (.396)	3.109*	.026	4.299*	.013

Source: Primary Data

**Significant at the 1% level of significance

*Significant at the 5% level of significance

Parentheses represent standard deviation

Unequal variance is observed in the dimensions of fairness and equity, work motivation and overall perception as per the Levene's test of equality of variance. Welch test result of fairness and equity reported a significant difference (p value=0.001) indicating that this dimension varies statistically among marital status categories. In the case of work motivation Levene's test was significant (p value=0.022), the result of Welch was not significant (p=0.124), indicating that despite difference in variance, the mean level of work motivation does not differ significantly across the groups. For the dimension expectation and belief Levene's test was not significant (p =0.64) and ANOVA also showed no significant difference (p=0.232) which means perception remain similar irrespective of marital status. Considering the overall perception Levene's test was significant (p= 0.026) and the Welch result shows that there is significant difference (p=0.013). It is concluded that overall perception about the QWL of workers differ significantly among marital status groups.

Welch test result shows significant difference in fairness and equity dimension and on overall perception, in order to do a multiple comparison of different marital status on the perception of workers Tamhane's T2 Post Hoc Test is used. This will show the category wise difference between the variables.

Table 6.17

Multiple Comparisons of Marital Status on Perception (Tamhane's T2 Post Hoc Test)

Tamhane				
Dependent Variable	(I) Marital Status	(J) Marital Status	Mean Difference (I-J)	Sig.
FE	Single	Married	.31049**	.005
		Divorced	.02637	1.000
		Widow	-.02947	1.000
	Married	Single	-.31049**	.005
		Divorced	-.28412	.746
		Widow	-.33996*	.014
	Widow	Single	.02947	1.000
		Married	.33996*	.014
		Divorced	.05584	1.000
Perception	Married	Single	-.15388	.366
		Divorced	-.16617	.914
		Widow	-.29868*	.016
	Widow	Single	.14480	.760
		Married	.29868*	.016
		Divorced	.13250	.980

** . The mean difference is significant at the 0.01 level.

* . The mean difference is significant at the 0.05 level.

Source: Primary Data

The post-hoc results indicate that significant pairwise differences exist among certain marital status groups in terms of fairness and equity and overall Perception. Under fairness and equity dimension single workers shows difference

with married workers ($p=0.005$), married workers with widowed workers ($p=0.014$). Overall perception part shows difference between married and widowed ($p=0.016$). These findings confirm that married employees tend to report lower levels of perception compared to single and widowed employees, indicating that marital responsibilities or work-life demands may influence their experience of their QWL.

6.7.10 Income wise comparison of perception of sanitation workers about QWL

All workers are working for getting a better remuneration, so income from their job has an important role in shaping the perception of them about anything. For income wise comparison of perception of sanitation workers regarding QWL the following hypothesis is formulated and tested.

H0: There is no significant difference in the perception of sanitation workers about QWL according to their income.

H1: There is a significant difference in the perception of sanitation workers about QWL according to their income.

To examine the hypothesis, one- way ANOVA/Welch test is applied based on the result of homogeneity of variance assumption. The homogeneity is verified by using Levene's test of Equality of Variance. For variables showing significant difference in the one-way ANOVA/Welch test, post hoc analysis is performed. Accordingly, Tukey/ Tamhane's T2 test is applied for multiple comparisons. The corresponding results are presented below

Table 6.18*Income wise comparison of Perception*

Dimensions	Descriptive Statistics of Income wise comparison						Levene's test of Equality of Variance		One- way ANOVA/ Welch test	
	Below 50000	50001-100000	100001-150000	150001-200000	200001-250000	Above 250000	Test statistics	Sig. value	Test Statistics	Sig. value
FE	3.189 (.975)	3.482 (.744)	3.591 (.610)	3.527 (.602)	3.364 (.786)	3.585 (.612)	5.158**	.000	2.180	.061
WM	3.410 (1.08)	3.875 (.487)	3.841 (.625)	4.019 (.449)	3.830 (.572)	3.712 (.791)	18.60**	.000	4.402**	.001
EB	3.251 (.868)	3.336 (.649)	3.368 (.703)	3.258 (.810)	2.737 (.793)	3.016 (.993)	2.533*	.028	7.783**	.000
Perception	3.283 (.719)	3.564 (.436)	3.600 (.455)	3.601 (.458)	3.310 (.508)	3.438 (.682)	5.417**	.000	5.534**	.000

Source: Primary Data

**Significant at the 1% level of significance

*Significant at the 5% level of significance

Parentheses represent standard deviation

The test result of equality of variance shows that there is no equality of population variance ($p < 0.05$) in any dimension and over all perception, hence use Welch test for finding out the difference in income groups. The result of Welch indicates that income groups differ significantly in work motivation ($p = 0.001$), expectation and beliefs ($p = 0.000$) and overall perception ($p = 0.000$) but fairness and equity does not show significant difference ($p = 0.061$). Better income level is associated with improved perception of work-related factors, mean value of respondent shows that workers earning range between 100001- 150000 and above 250000 tend to report higher perception score across most dimensions, lowest perception observed among workers earning below 50000. This indicates that there is a positive link between financial status and employees' perception of QWL.

Welch test shows significant difference in all dimensions of perception except for fairness and equity. In order to do a multiple comparison of different income groups on the perception of workers Tamhane's T2 Post Hoc Test is used. This will show the category wise difference between the variable.

Table 6.19

Multiple Comparisons of Family Income on Perception (Tamhane's T2 Post Hoc Test)

Tamhane				
Dependent Variable	(I) Family Income	(J) Family Income	Mean Difference (I-J)	Sig.
WM	150001 to 200000	Below 50000	.60907**	.001
		50000 to 100000	.14423	.839
		100001 to 150000	.17796	.574
		200001 to 250000	.18835	.158
		Above 250000	.30673	.821
EB	200001 to 250000	Below 50000	-.51426**	.003
		50000 to 100000	-.59864**	.000
		100001 to 150000	-.63113**	.000
		150001 to 200000	-.52138**	.000
		Above 250000	-.27919	.986
Perception	150001 to 200000	Below 50000	.31798*	.035
		50000 to 100000	.03743	1.000
		100001 to 150000	.00128	1.000
		200001 to 250000	.29102**	.001
		Above 250000	.16356	.997
	200001 to 250000	Below 50000	.02696	1.000
		50000 to 100000	-.25358	.057
		100001 to 150000	-.28974**	.003
		150001 to 200000	-.29102**	.001
		Above 250000	-.12746	1.000

** . The mean difference is significant at the 0.01 level.

* . The mean difference is significant at the 0.05 level.

Source: Primary Data

Multiple comparison of family income on perception with the help of Tamhane's T2 Post Hoc Test shows that in the dimension of work motivation 150001 to 200000 group of income shows significant difference with below 50000 group ($p=0.001$). In the dimension of expectation and belief difference were observed in almost all groups except with above 250000 (p -value is less than 0.05). In overall perception 150001 to 200000 category shows difference with below 50000 ($p=0.035$) and with 200001 to 250000 ($p=0.001$). Income group of 200001 to 250000 shows difference with 100001 to 150000 and with 150001 to 200000 ($p=0.001$). Overall, the findings indicate that perception levels vary across income groups, with higher income generally associated with more positive work perceptions, though some variations exist across dimensions.

Section III

6.8 Impact of Perception level on QWL

This section analyses how and what extent the perception level influences the QWL of sanitation workers. In previous research, according to (Kumar & Singh, 2019) 'job security is crucial factor, as stability in employment reduces stress and improves productivity among sanitation workers' (Gupta & Srivastava, 2020). Further emphasizes the importance of a safe and healthy work environment, which enhances job satisfaction and performance. "Fair compensation and benefits also play a vital role in boosting morale and reducing turnover", as highlighted by (Patel & Desai, 2018). Additionally, (Jain & Sharma, 2021) note that positive interpersonal relationship at the workplace fosters a supportive environment, contributing to improving Quality of Work Life.

To explain the relationship between perception level and QWL, Structural Equation Modelling (SEM) is used. Before that, there is a need to propose a model for the analysis (Figure 6.1) and the model has to be checked using model fitness indices like Goodness of Fit Index (GFI), Tucker Fit Index (TLI), Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA), Adjusted GFI (AGFI), Incremental Fit Index (IFI), Normed Fit Index (NFI) and Normed chi-

square (CMIN/df) are used to check the goodness of fit of the model. The proposed model, measurement model, model fitness indices and hypotheses testing results are presented below. Following hypotheses are formulated for the relationship first order dimensions as well as second order variables. It involves checking the significance of the outer loadings of the first order constructs on the second order constructs.

In a second – order reflective Structural Equation Model, hypotheses are formulated at two levels; how first order components relate to their construct as well as how second order variable relates with the first order construct.

First of all, the hypotheses at the indicator level are framed to measure the relationship between components and its indicators and then the hypothesis related with the relationship between variables are framed.

H1₁: Fairness & Equity, Work Motivation and Expectation & Believes are the reflective constructs of overall perception level

H1₂: Working Condition, Compensation, Workload, Work life Balance, Job Security, Health & Safety, Social Support & Workplace relationship, Training & Development facilities and Career Growth & Advancement are the reflective constructs of Quality of Work Life.

H1₃: Perception level has significant impact on QWL.

In this second- order (higher-order) structural equation model, assessing the path loadings and their significance of indicators of the main constructs, followed by examining the structural path from the second-order factor to other variables, interpreting standardised regression co-efficient.

Firstly, interpret the result of first-order model by checking the standardized loadings from the indicator to the construct. Here, high loadings indicate strong representation of indicators.

Secondly, interpret the second-order structural paths by using path co-efficient. These shows the strength and direction of the sub-dimensions' contribution

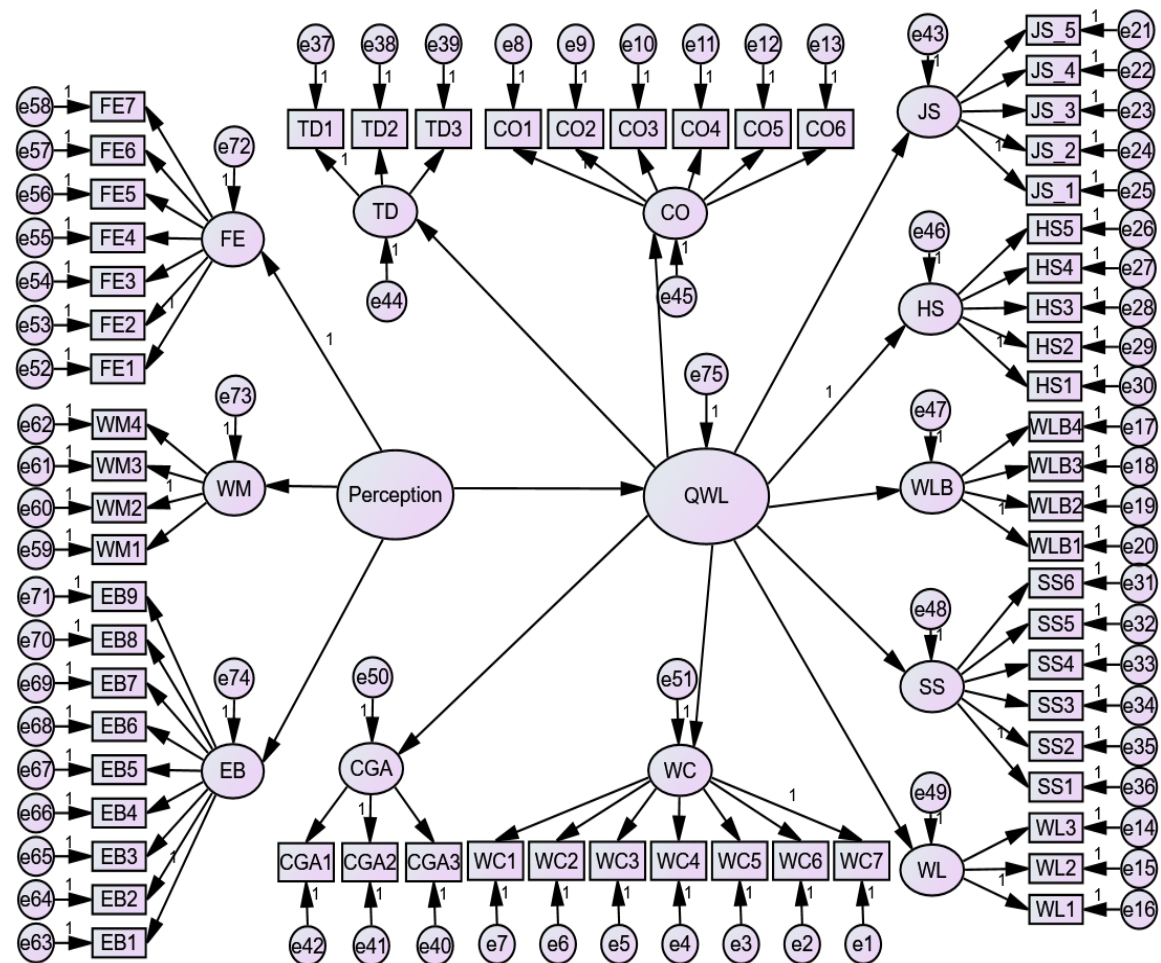
to the main construct. It is verified with the help of significant value of the relationship.

Finally, interpret the structural model (second-order factor to other variables) using standardized path co-efficient. It also explains how the independent variable influences in the dependent variable using different dimensions and indicators.

Regarding the proposed relationship between perception level and QWL, the higher-order structural model is used to explain the strength and direction of indicators, dimensions and constructs respectively. The results are presented below.

Figure 6.1

Proposed Model for the impact of Perception level on QWL

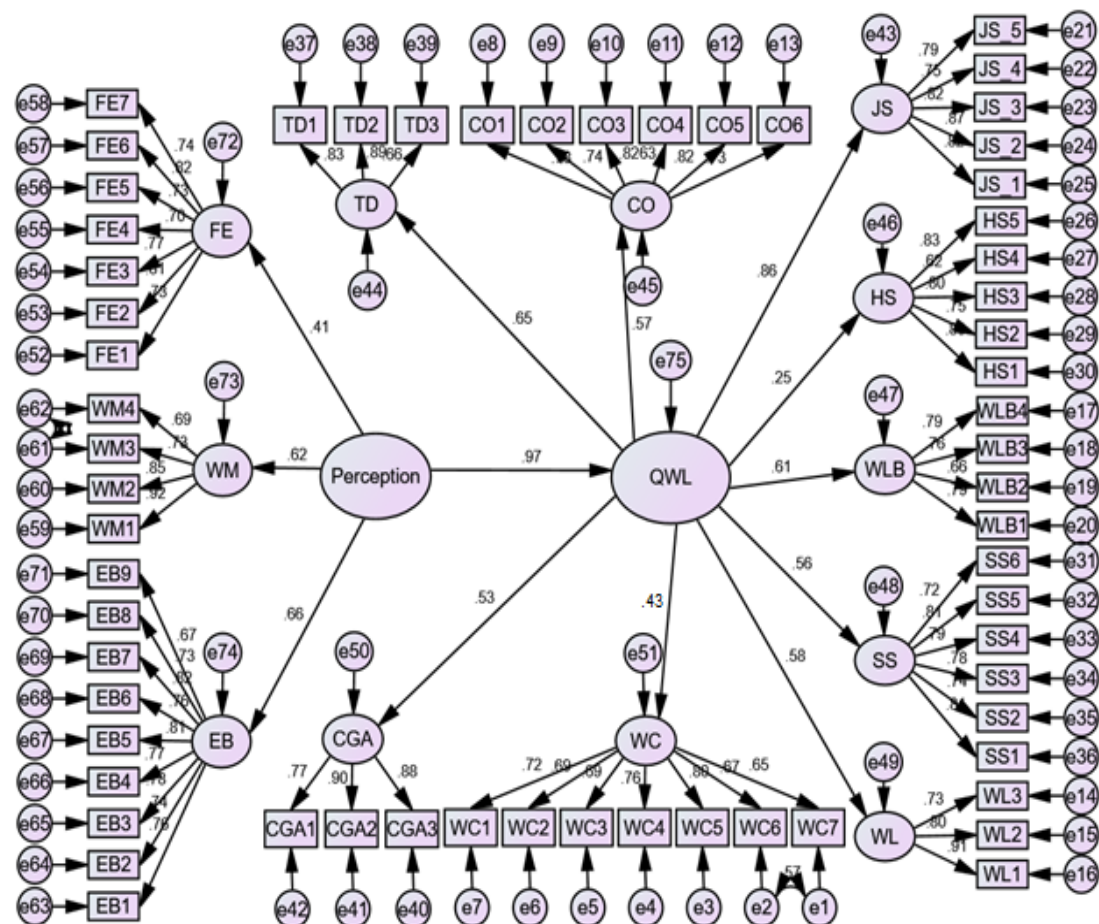


Source: Primary Data

The proposed model for measuring the impact of perception level on QWL shows higher-order structural model. In the first order of perception level, there are three components are measured with different indicators. Further, the second order shows the relationship between components and main construct. On the other side of the picture, the first order of QWL is measured using nine components are its indicators. Furthermore, the relationship between components and construct also verified. Similarly, the structural model shows the relationship between independent variable (Perception) and dependent variable (QWL). The measurement model with values of factor loadings and regression co-efficient are presented below.

Figure 6.2

Measurement Model for the impact of Perception level on QWL



Source: Primary Data

The measurement model of checking the impact of perception on QWL of sanitation workers shows the relationship between components and indicators in the first order level, relationship between construct and components in the second-order level and relationship between constructs in the structural level. Here, in the first order level, the relationship between components and indicators of Perception level and QWL is established with factors loading of greater than 0.70. Similarly, in the second order level, the relationship between construct and components of Perception level and QWL also established with significant regression co-efficient. Most important, the impact of perception level on QWL also verified with significant path co-efficient of 0.97 (at 1% level of significance). Hence, perception level has significant impact on QWL of Sanitation Workers.

Table 6.20

Model fit indices of the measurement model of perception level and QWL

Indices	Value Obtained	Recommended Values of Good Fit	Recommended Values of Acceptable Fit
Normed chi-square (CMIN/df)	2.519	≤ 3	≤ 5
Root Mean Square Residuals (RMR)	0.069	≤ 0.05	≤ 0.08
Comparative Fit Index (CFI)	0.828	≥ 0.90	≥ 0.80
Goodness of Fit Index (GFI)	0.801	≥ 0.90	≥ 0.80
Incremental Fit Index (IFI)	0.829	≥ 0.90	≥ 0.80
Tucker Fit Index (TLI)	0.821	≥ 0.90	≥ 0.80
Normed Fit Index (NFI)	0.802	≥ 0.90	≥ 0.80
Relative Fit Index (RFI)	0.801	≥ 0.90	≥ 0.80
Root Mean Square Error of Approximation (RMSEA)	0.063	≤ 0.08	$= 0.08$

Source: Primary Data

The model fitness indices are used to verify the measurement model of perception level on QWL. The value of CMIN/df (2.519) is less than 3, hence the model said to be good fit. Further, the value of RMR (0.069) and RMSEA (0.063)

also within the limit of good fitness. Similarly, the values of CFI, GFI, IFI, TLI, NFI and RFI are within the limit of acceptable fit of greater than 0.80. Since the fitness indices are either within the limit of good or acceptable, the model used for checking the impact of perception level on QWL is said to be acceptable. Hence, the above – specified model (figure 6.2) can be used as the measurement model of perception level and QWL.

Table 6.21

Hypothesis testing result for the model perception level and QWL

Hypothesis	Path		Path Co-efficient	p (Sig.) Value	Result
H1 ₁	Perception level	→ FE	0.409**	<0.01	Supported
	Perception level	→ WM	0.618**	<0.01	Supported
	Perception level	→ EB	0.663**	<0.01	Supported
H1 ₂	QWL	→ WC	0.431**	<0.01	Supported
	QWL	→ CO	0.570**	<0.01	Supported
	QWL	→ WL	0.576**	<0.01	Supported
	QWL	→ WLB	0.612**	<0.01	Supported
	QWL	→ JS	0.857**	<0.01	Supported
	QWL	→ HS	0.250**	<0.01	Supported
	QWL	→ SS	0.561**	<0.01	Supported
	QWL	→ TD	0.652**	<0.01	Supported
	QWL	→ CGA	0.530**	<0.01	Supported
H1 ₃	Perception level	→ QWL	0.971**	<0.01	Supported

Source: Primary Data

** Significant at 1% level of significance

Regarding the relationship between QWL and its reflecting constructs, the regression co-efficient are significant at 1% level of significance and hence these constructs are effectively contributing for the variable QWL. With regard to the perception level, all the reflective constructs have path co-efficient of 0.409, 0.618

and 0.663 respectively. Since the values are significant at 1% level, these constructs are considered as the reflective measures of perception level.

The important result of the structural model shows the regression co-efficient of **0.971** between perception level and QWL. Since the value is significant at 1% level, the proposed hypothesis is supported, and perception level has significant high positive impact on QWL of the sanitation workers.

6.9 Conclusion

Sanitation worker perception towards quality of work life was studied by using three dimensions namely fairness & equity, work motivation and expectation & beliefs. Workers show a moderate positive perception towards quality of work life, among the dimensions work motivation has the highest level of influence on perception. Influence of perception on QWL was also studied by using structural equation modelling; it is observed that QWL has a significant influence on overall perception of sanitation workers. These findings provide a clear empirical basis for further discussion and interpretation in the subsequent chapter.

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Chapter 7

Job Satisfaction of Sanitation Workers

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7.1 Introduction

Quality of work life and job satisfaction which are considered the most important aspects of work, greatly influence the well-being of employees of an organization. An employee remains in an organization only when they are satisfied with their job. Job satisfaction of sanitation workers is affected by different variables; in this area the researcher is trying to give a picture about how different variables affected their satisfaction. Sanitation workers have an important role in maintaining public health and environmental hygiene, but their job is often characterized by physical strain social stigma, inadequate safety measures, and limited career progression, all of which shape their job satisfaction levels (ILO, 2017). Job satisfaction among sanitation workers is strongly influenced by factors such as working conditions, supervisory support, fair wages, recognition, and opportunities for skill development (Kumar, S. & Bhaduri, R, 2019). If a sanitation worker feels satisfied in his job, it will lead to increased productivity, minimum employee turnover and better psychological well-being (Spector, P. E., 2019). However, due to the hazardous nature of their work and persistent societal undervaluation, sanitation workers frequently report lower satisfaction compared to other occupational groups (Narayan, G & Joseph, A., 2021).

Understanding the job satisfaction of sanitation workers is essential for designing policies that improve their QWL, promote dignity of job and ensure a peaceful employment life. To measure the job satisfaction of sanitation workers in Kerala, the researcher uses two variables namely, Job Attributes and Organizational Dynamics. According to Hackman and Oldham's Job Characteristics Model, job attributes strongly influence employees' internal motivation and satisfaction with their work (Hackman, J. R. & Oldham, G. R., 1976). Organizational support theory states that supportive organizational dynamics increase job satisfaction and commitment among workers (Eisenberger, R. et al., 2001).

The present chapter is divided into four sections;

Section I- Satisfaction of Sanitation workers towards job

Section II- Comparison of Job Satisfaction across demographic classification

Section III- Influence of QWL factors on job satisfaction

Section IV- Mediating role of Perception in between QWL and Job Satisfaction.

To compare the job satisfaction among demographic groups, Age, Gender, Social Class, Family Type, Education, Employment Status, Type of job, Place of living, Marital Status and Family Income are considered. The following sections are in respect to the above discussions.

7.2 Objectives

- To analyze the job satisfaction of sanitation workers and the influence of QWL on their overall Job Satisfaction.
- To check the mediating role of Perception in the relationship between Quality of Work Life and Job Satisfaction of sanitation workers.

7.3 Hypotheses

- H1₆: There is an average level of job satisfaction among sanitation workers in Kerala.
- H1₇: There is significant difference in the job satisfaction among sanitation workers according to their demographic classifications.
- H1₈: QWL has significant influence on job satisfaction of sanitation workers.
- H1₉: Perception act as mediator in the relationship between Quality of Work Life and Job Satisfaction.

7.4 Methodology and Database

In order to achieve the objectives of the present chapter, primary data is gathered from sanitation workers through a pretested structured questionnaire. A total of 380 sample sanitation workers are selected for the research.

The study evaluates the job satisfaction of sanitation workers using descriptive statistics and a one-sample t-test. Comparative analysis across various demographic classifications is carried out using the independent samples t-test and

either one-way ANOVA or the Welch test, based on the assumption of variance homogeneity. Levene's test of equality of variances is employed to assess this assumption. In addition, Tukey HSD or Tamhane's T2 post-hoc tests are performed to analyze multiple comparisons in cases of significant differences in job satisfaction.

Besides, Structural Equation Modeling (SEM) is employed to check the direct and indirect effect of QWL on job satisfaction. The results are presented in the following pages in sequence: descriptive statistics, one-sample t-test, mean difference tests, their post-hoc analysis, and structural equation modelling.

7.5 Variables of the Study

Table 7.1

Variables used for the study of job satisfaction of sanitation workers

Construct	Dimensions	Type of questions
Job Satisfaction	Job Attributes (JA) and Organizational Dynamics (OD)	5 Point Likert Scale Questions

Source: Literature Review

Section I

7.6 Job Satisfaction of Sanitation Workers

In this section the job satisfaction is analysed using descriptive statistics (mean and standard deviation) and one-sample t-test. The job satisfaction level is identified from the point of view of Job Attributes (JA) and Organizational Dynamics (OD). The following analysis is concerned with the job satisfaction in the order of descriptive statistics, one-sample t-test and its discussions and interpretation based on hypothesis formulated.

Table 7.2

Descriptive Statistics of Job Satisfaction of Sanitation Workers

Factors and Statements	Mean	Std. Deviation
Job Attributes		
Working conditions	3.5974	.75737
Compensation	3.4474	.89258
Motivation obtained	3.2579	.90546
Job security	3.1789	.99581
Job enlargements	3.1421	.93075
Possibility for promotion	3.0211	.90416
Organizational Dynamics		
Work life balance	3.2921	.91105
Relations with co workers	3.5816	.77981
Quality of supervision	3.4868	.85481
Recognition	3.3868	.94734
Involvement in decision making	3.2395	1.03144
Facility to express and share concerns of workers	3.3211	.96759
Approaches of trade unions	3.5632	.87396

Source: Primary Data

Table 7.2 Shows the descriptive statistics about satisfaction of job of sanitation workers, within the job attributes dimension of job satisfaction there are 6 statements, highest mean score is observed for working condition ($\bar{X} = 3.5974$) indicating that workers are more satisfied with their physical and operational part of their job environment. The compensation attribute showing a moderate level of satisfaction ($\bar{X} = 3.4474$), motivation obtained ($\bar{X} = 3.2579$) and job security ($\bar{X} = 3.1789$) reflecting slightly above average satisfaction, while job enlargements ($\bar{X} = 3.1421$) and possibility for promotion ($\bar{X} = 3.0211$) have the lowest mean scores within this category. This indicates that sanitation workers have only restricted opportunity for career growth and expansion.

In the case of Organizational Dynamics dimension of job satisfaction relation with co-workers ($\bar{X} = 3.518$) and approaches of trade union ($\bar{X} = 3.5632$) shows the highest mean score indicating that a strong interpersonal relationship and supportive peer interaction exist between the workers and trade unions have a dominant place in the minds of workers as they help in addressing work place issues. Quality of supervision ($\bar{X} = 3.4868$), recognition ($\bar{X} = 3.3868$), and facility to express and share concerns ($\bar{X} = 3.3211$) show moderate levels of satisfaction, reflecting a reasonably supportive organizational climate. Meanwhile, work–life balance ($\bar{X} = 3.2921$) and involvement in decision making ($\bar{X} = 3.2395$) record comparatively lower scores, suggesting that workers may feel limited participation in organizational decisions and experience challenges in balancing personal and work-related demands.

7.6.1. Job Satisfaction among Sanitation workers

Job satisfaction of sanitation workers is analyzed by using one-sample t-test as the proposed variable is measured with the help of five-point Likert scale. Since it is, the test value is considered as 3 and the mean score which is above the test value describes that there will be a good level of job satisfaction for workers. If the mean value is less than test value, then there will not be good job satisfaction. Similarly, if the mean value is equal to test value, there will be average job satisfaction for sanitation workers. Following hypothesis is formulated and tested accordingly,

- *H0: There is an average level of job satisfaction among sanitation workers ($\bar{X} = 3$).*
- *H1: There is no average level of job satisfaction among sanitation workers ($\bar{X} \neq 3$).*

Table 7.3

One Sample Statistics and Test Result of Job Satisfaction

Dimensions of Job Satisfaction	One-Sample Statistics			One Sample Test (Test Value = 3)		
	N	Mean	Std. Deviation	t	df	Sig. (p) value
Job Attributes	380	2.7311	.61617	8.506**	379	.000
Organizational Dynamics	380	3.4102	.71570	11.171**	379	.000
Job Satisfaction	380	3.0706	.60525	2.275	379	.053

Source: Primary Data

**Significant at the 1% level of significance

One-sample t test result of job satisfaction shows that in the dimension of job attributes mean value ($\bar{X} = 2.7311$) is slightly less than 3 which indicates that in this dimension job satisfaction of sanitation workers are slightly lower than the average job satisfaction. Organizational dynamics part of satisfaction ($\bar{X} = 3.4102$) shows that workers have above average job satisfaction and regarding the overall job satisfaction ($\bar{X} = 3.0706$) sanitation workers have an average satisfaction observed.

Here the 'p' value for two dimensions of job satisfaction shows less than 0.01; null hypothesis is rejected at 1% significant level that is these factors may show either above average (Organizational Dynamics) or slightly below average (Job Attributes) job satisfaction. But for overall job satisfaction, the 'p' value is greater than 0.05 and then failed to reject the null hypothesis, that is there is an average job satisfaction for sanitation workers in Kerala.

Section II

7.7 Comparison of Job Satisfaction across demographic classifications

In this section of analysis, the job satisfaction is compared among demographic classifications of the respondents namely, age, gender, education, family type, job type, employment status, income etc. The analysis employs

independent samples t-tests and either one-way ANOVA or the Welch test. Post hoc analysis is carried out for statistically significant mean differences. Before conducting these tests, the assumption of homogeneity of population variance is evaluated using Levene's test of equality of variances. The results are presented in the order of hypothesis, test result and interpretation.

7.7.1 Age wise comparison of job satisfaction of sanitation workers

Job satisfaction of workers in different age groups may differ from each other since the needs and wants of different age groups are different. Age is also linked to maturity, emotional regulation, and work experience, all of which influence job attitudes and satisfaction levels (Spector, P. E., 2019). Here age group is classified as below 35, 35 – 45, 46-55 and above 55. To compare job satisfaction among different age groups of sanitation workers, following hypothesis is formulated and tested.

H0: There is no significant difference in the job satisfaction of sanitation workers according to their age groups.

H1: There is a significant difference in the job satisfaction of sanitation workers according to their age groups.

In order to check the hypothesis, One-way ANOVA/ Welch test is applied according to the homogeneity assumption of population variance. Before that homogeneity assumption is tested with the help of Levene's test of Equality of Variance. The results are presented below.

Table 7.4

Age wise comparison of Job Satisfaction

Dimensions	Descriptive Statistics of Age wise comparison				Levene's test of Equality of Variance		One- way ANOVA/ Welch test	
	Below 35	35 - 45	46-55	Above 55	Test statistics	Sig. value	Test Statistics	Sig. value
Job Attributes	2.548 (.619)	2.693 (.585)	2.771 (.618)	2.756 (.671)	.095	.963	1.368	.252
Organizational Dynamics	3.175 (.689)	3.390 (.676)	3.446 (.723)	3.451 (.785)	.936	.423	1.371	.251
Job Satisfaction	2.861 (.633)	3.041 (.568)	3.109 (.610)	3.104 (.630)	.332	.803	1.641	.180

Source: Primary Data

Parentheses represent standard deviation

To check the assumption of equality of variance Levene's test is used and the result indicates that job satisfaction and its dimensions show 'p' values greater than 0.05, hence the equality of variance assumption is proved, so, one-way ANOVA is used for testing the hypothesis. Age wise comparison of job satisfaction of sanitation workers reveals that there is no difference in the satisfaction of workers according to their age difference. 'P' value of job satisfaction and its dimension is greater than 0.05, hence failed to reject the null hypothesis.

7. 7. 2 Gender-wise comparison of Job Satisfaction

Job satisfaction of male and female is different because their perceptions about the different aspects of job environment are different. Gender of the worker can influence on work condition, organizational support and career opportunity which in turn affect overall job satisfaction (Oshagbemi, T., 2020). For checking the influence of gender on job satisfaction of sanitation workers the following hypothesis is formulated and tested.

H0: There is no significant difference in the job satisfaction of sanitation workers according to their gender.

H1: There is a significant difference in the job satisfaction of sanitation workers according to their gender.

For testing the hypothesis, independent sample t-test is used according to homogeneity assumption of population variance. Levene's test for equality of variance is used to check this assumption. The results of the test are given below.

Table 7.5

Gender wise comparison of Job Satisfaction

Dime nsions	Gender	Mean	SD	Levene's Test for Equality of Variances		t-test result	
					F Sig.	t	Sig.
JA	Male	2.759	.593	Equal variances assumed	2.802 .095	1.082	.280
	Female	2.690	.647	Equal variances not assumed		1.065	.288
OD	Male	3.493	.674	Equal variances assumed	4.381* .037	2.726**	.007
	Female	3.291	.757	Equal variances not assumed		2.670**	.008
JS	Male	3.126	.583	Equal variances assumed	4.451* .036	2.159*	.031
	Female	2.990	.628	Equal variances not assumed		2.131*	.034

Source: Primary Data

**Significant at the 1% level of significance

*Significant at the 5% level of significance

Parentheses represent standard deviation

The Levene's test result of job attribute dimension of job satisfaction indicates that the variance between male and female workers is not significantly

different ($p = 0.095$), allowing the assumption of equal variance. The t-test result shows no difference in job attribute score between male and female ($p > 0.05$), suggesting that both genders perceive job attribute similarly. About Organizational Dynamics significant difference across gender was shown by Levene's test ($p = 0.037$) indicating that equal assumptions cannot be assumed. Using the unequal variance of the t-test, a significant difference is found between male and female workers ($p = .008$). Female employees indicating a lower mean score ($\bar{X} = 3.291$) while comparing with male employees ($\bar{X} = 3.493$), indicating that men experience more favourable satisfaction of organizational dimensions than women. Levene's result of overall satisfaction also shows a difference in variance ($p = .036$), therefore t-test result under unequal variance is considered, which shows a difference ($p = .034$). Male workers show a higher job satisfaction ($\bar{X} = 3.126$) compared to females ($\bar{X} = 2.990$), suggesting that men tend to be more satisfied with their jobs.

7.7.3 Social class wise comparison of Job Satisfaction

Social class difference may create difference in educational opportunities, employment opportunities and job mobility. Generally, persons from higher social class may get better opportunity for education, technical and professional skill development. Workers from lower social classes are more likely to be employed in low-skilled, physically demanding, or insecure jobs, which may limit their control over work processes and reduce overall satisfaction (Kraus, M. W. et al., 2017).

For checking the influence of social class on job satisfaction of sanitation workers the following hypothesis is formulated and tested.

H0: There is no significant difference in the job satisfaction of sanitation workers according to their social class.

H1: There is a significant difference in the job satisfaction of sanitation workers according to their social class.

To examine the hypothesis, one-way ANOVA/Welch test is applied based on the result of the homogeneity of variance assumption. The homogeneity is verified by using Levene's test of Equality of Variance. The results are presented below

Table 7.6

Social class wise comparison of Job Satisfaction

Dimensions	Descriptive Statistics of Social class wise comparison			Levene's test of Equality of Variance		One- way ANOVA/ Welch test	
	Forward Class	Other Backward Class	Backward Class	Test statistics	Sig. value	Test Statistics	Sig. value
JA	2.740 (.569)	2.764 (.598)	2.704 (.648)	.488	.614	.351	.704
OD	3.443 (.694)	3.379 (.741)	3.416 (.710)	.102	.903	.200	.818
JS	3.091 (.549)	3.072 (.600)	3.060 (.633)	.882	.415	.072	.931

Source: Primary Data

Parentheses represent standard deviation

The result of equality variance test shows that 'p' value for all dimensions and overall job satisfactions are above 0.05, hence equality of variance assumption is proved, so for testing the hypothesis One-way ANOVA is used. The significant value of ANOVA test ($P > 0.05$) indicates that there is no difference in the job satisfaction of sanitation workers according to their social class. It can be concluded that, social class of sanitation workers has no influence on the job satisfaction.

7.7.4 Family Type wise comparison of Job Satisfaction

Family type of sanitation workers consists of nuclear and joint families; members from these two categories are different in respect of their family responsibilities. A worker from nuclear family must handle both the younger one and the elder one in the family by him/herself. Understanding job satisfaction across different family types is important because family environment significantly influences psychological well-being, motivation, and work engagement (Greenhaus, J. H. & Powell, G. N., 2006). For making comparison of family type with job satisfaction of workers the following hypothesis is formulated and tested.

H0: There is no significant difference in the job satisfaction of sanitation workers according to their family type.

H1: There is a significant difference in the job satisfaction of sanitation workers according to their family type.

For testing the hypothesis an independent sample t-test is used according to the homogeneity assumption of population variance. Levene's test for equality of variance is used to check this assumption. The results of the test are given below

Table 7.7

Family Type wise comparison of Job Satisfaction

Dimen sions	Family Type	Mean	SD	Levene's Test for Equality of Variances		t-test result		
				F	Sig.	t	Sig.	
JA	Nuclear	2.744	.624	Equal variances assumed	.906	.342	.795	.427
	Joint family	2.684	.587	Equal variances not assumed			.823	.412
OD	Nuclear	3.440	.708	Equal variances assumed	.063	.801	1.552	.122
	Joint family	3.304	.735	Equal variances not assumed			1.519	.131
JS	Nuclear	3.092	.606	Equal variances assumed	.240	.625	1.322	.187
	Joint family	2.994	.596	Equal variances not assumed			1.334	.184

Source: Primary Data

The comparison of job satisfaction of sanitation workers based on their family type indicates that the assumption of equal variance is met for all dimensions and overall job satisfaction ($p > 0.05$). The t-test results show that there is no

significant difference observed between employees from nuclear and joint families across any job satisfaction dimensions. In case of job attribute ($p = 0.427$), organizational dynamics ($p = 0.112$) and overall job satisfaction ($p = 0.187$) showing 'p' value is greater than 0.05, hence H_0 fails to be rejected. Finally, it is concluded that family type does not significantly influence the job satisfaction of sanitation workers.

7.7.5 Education wise comparison of Job Satisfaction

Comparison of job satisfaction of sanitation workers across different educational levels is helpful for understanding how workers' qualifications shape their attitude and experience at work. Highly educated workers expect career advancements and may feel uncomfortable in the present job. Workers with higher education may seek opportunities for advancement, autonomy, and meaningful work, whereas those with lower educational levels may value job security, stability, and supportive supervision more strongly (Sarker, S. J. et al., 2003).

Educational level of sanitation workers is classified as less than 10th standard, 10th to 12th standard and graduates. For making a comparison of perception of sanitation workers in different educational qualifications, following hypothesis is formulated and tested.

H0: There is no significant difference in the job satisfaction of sanitation workers according to their educational level.

H1: There is a significant difference in the job satisfaction of sanitation workers according to their educational level.

In order to check the hypothesis, One-way ANOVA/ Welch test is applied according to the homogeneity assumption of population variance. Before that homogeneity assumption is tested with the help of Levene's test of Equality of Variance. The results are presented below.

Table 7.8

Education- wise comparison of Job Satisfaction

Dimensions	Descriptive Statistics of Education wise comparison			Levene's test of Equality of Variance		One- way ANOVA/ Welch test	
	Upto 10 th std	10 th to 12 th	Graduate	Test statistics	Sig. value	Test Statistics	Sig. value
JA	2.882 (.594)	2.691 (.621)	2.772 (.484)	1.691	.185	2.908	.056
OD	3.509 (.702)	3.386 (.719)	3.389 (.691)	0.808	.447	0.888	.412
Satisfaction	3.196 (.586)	3.038 (.609)	3.081 (.551)	1.134	.323	2.016	.135

Source: Primary Data

Parentheses represent standard deviation

Equality of population variance is tested with Levene's test and the result shows that job attributes, organizational dynamics and overall job satisfactions are showing 'p' values greater than 0.05, hence the equality variance assumption is satisfied, so the study uses One-way ANOVA for testing hypothesis. The result of ANOVA indicates that in job attributes ($p = 0.056$), organizational dynamics ($p = 0.412$) and job satisfaction ($p = 0.135$) all 'p' values are higher than 0.05, hence null hypothesis fails to be rejected. There is no significant difference in job satisfaction of sanitation workers according to their different educational level.

7.7.6 Employment status wise comparison of Job Satisfaction

There are permanent and temporary workers working as sanitation workers in Kerala, generally the job satisfaction level of permanent and temporary workers is different because of their job security feelings. Analyzing employment status provides valuable insights into how job insecurity and contract arrangements affect employee well-being and performance outcomes (De Witte, H., 2005). For making a

comparison of employment status with job satisfaction of workers the following hypothesis is formulated and tested.

H0: There is no significant difference in the job satisfaction of sanitation workers according to their employment status.

H1: There is a significant difference in the job satisfaction of sanitation workers according to their employment status.

For testing the hypothesis independent sample t-test is used according to the homogeneity assumption of population variance. Levene's test for equality of variance is used to check this assumption. The results of the test are given below.

Table 7.9

Employment status wise comparison of Job Satisfaction

Dimensions	Employment Status	Mean	SD	Levene's Test for Equality of Variances		t-test result	
				F	Sig.	t	Sig.
JA	Permanent	2.720	.611	Equal variances assumed	.323	.603	.547
	Temporary	2.766	.633	Equal variances not assumed		.591	.555
OD	Permanent	3.375	.737	Equal variances assumed	3.023	1.773	.077
	Temporary	3.531	.625	Equal variances not assumed		1.941	.054
JS	Permanent	3.048	.605	Equal variances assumed	.884	1.354	.177
	Temporary	3.148	.599	Equal variances not assumed		1.362	.176

Source: Primary Data

The result of Levene's test of equality of variance indicates that 'p' values for all the dimensions and overall job satisfaction are greater than 0.05, it shows that equal variance assumption is considered for analysis. The test value of Job attitude ($p = 0.547$), organizational dynamics ($p = 0.077$) and overall job satisfaction ($p = 0.177$) shows that all the 'p' values are greater than 0.05, hence H_0 failed to reject at 5% level of significance. Permanent workers and temporary workers do not show difference in their job satisfaction, that is employment status of workers has no effect on their job satisfaction.

7.7.7 Place of residence wise comparison of Job Satisfaction

Employees' work attitude is generated by the socio-economic and environmental conditions of their living place. Workers living in urban area may experience higher job stress due to the fast-paced environment but also have better opportunity for career growth and resource availability whereas workers from rural area may value stability and community ties that enhance job satisfaction (Müller, A. & Kirchner, K., 2020). For studying influence of living place on the job satisfaction of sanitation workers the following hypothesis is formulated and tested.

H0: There is no significant difference in the job satisfaction of sanitation workers according to their place of residence.

H1: There is a significant difference in the job satisfaction of sanitation workers according to their place of residence.

To examine the hypothesis, One-way ANOVA/Welch test is applied based on the result of the homogeneity of variance assumption. The homogeneity assumption is verified by using Levene's test of Equality of Variance. The results are presented below.

Table 7.10

Place of residence wise comparison of Job Satisfaction

Dimensions	Descriptive Statistics of Place of residence wise comparison			Levene's test of Equality of Variance		One- way ANOVA/ Welch test	
	Urban	Semi Urban	Rural	Test statistics	Sig. value	Test Statistics	Sig. value
JA	2.734 (.679)	2.656 (.599)	2.767 (.567)	1.567	.210	.888	.412
OD	3.439 (.792)	3.278 (.672)	3.454 (.664)	2.009	.136	1.838	.161
JS	3.086 (.664)	2.967 (.612)	3.110 (.544)	2.007	.136	1.618	.200

Source: Primary Data

Parentheses represent standard deviation

The equality of variance results shows that for all dimensions and overall job satisfaction 'p' value is greater than 0.05, so the assumption of equality of variance is proved, hence One-way ANOVA is used for testing the hypothesis. ANOVA result for job attribute (p = 0.412), organizational dynamics (p = 0.161) and overall job satisfaction (p = 0.200) indicates that the 'p' value for all of them are higher than 0.05, hence H₀ is failed to be rejected at 5% level of significance, that is the living place of sanitation workers has no influence on their job satisfaction.

7.7.8 Working Place wise comparison of Job Satisfaction

Nature of the work environment has a critical role in shaping employees' attitude and well-being, working atmosphere of a corporation may be different from that of a municipality. Working environment factors like physical conditions, organizational support, safety and availability of resources often vary between institutions, industries, or local administrative units (Spector, P. E., 2019). In order to study the influence of the working place on the job satisfaction of sanitation workers the following hypothesis is formulated and tested.

H0: There is no significant difference in the job satisfaction of sanitation workers according to their working place.

H1: There is a significant difference in the job satisfaction of sanitation workers according to their working place.

For testing the hypothesis independent sample t-test is used according to the homogeneity assumption of population variance. Levene's test for equality of variance is used to check this assumption. The results of the test are given below.

Table 7.11

Working Place wise comparison of Job Satisfaction

Dimensions	Working Place	Mean	SD	Levene's Test for Equality of Variances		t-test result		
				F	Sig.	t	Sig.	
JA	Corporation	2.696	.652	Equal variances assumed	2.461	.118	1.184	.237
	Municipality	2.771	.570	Equal variances not assumed			1.195	.233
OD	Corporation	3.380	.741	Equal variances assumed	1.079	.300	.879	.380
	Municipality	3.444	.685	Equal variances not assumed			.884	.377
JS	Corporation	3.038	.626	Equal variances assumed	.485	.487	1.122	.262
	Municipality	3.107	.579	Equal variances not assumed			1.128	.260

Source: Primary Data

Here the 'p' value of Levene's test of equality of variance for all dimensions of job satisfaction and overall job satisfaction are more than 0.05, hence equality of variance assumption is true for these cases and independent sample t-test is suitable for testing the hypothesis. The result of the t-test indicates that the 'p' value for all dimensions and overall job satisfaction is higher than 0.05, hence the null hypothesis is failed to be rejected at the 5% level of significance, hence there is no significant difference in the matter of job satisfaction of workers working in municipalities and corporations.

7.7.9 Marital Status wise comparison of Job Satisfaction

Marital status of employees' may or may not influence the job satisfaction of workers, the strength and direction of relationships may vary based on the work setting and occupation. Some of the studies argued that there is a positive situation for married persons, they may experience reduced work-related stress because they receive emotional and instrumental support from their spouse, enhancing their overall satisfaction with work (Rashid, H. & Zhao, L., 2010). But some of the studies against these arguments like marital status alone do not fully determine job satisfaction; instead, factors such as working conditions, organizational climate, and individual personality play more significant roles (Spector, P. E., 2019a). For studying the influence of marital status of sanitation workers on the job satisfaction the following hypothesis is formulated and tested.

H0: There is no significant difference in the job satisfaction of sanitation workers according to their marital status.

H1: There is a significant difference in the job satisfaction of sanitation workers according to their marital status.

To test the hypothesis, a one-way ANOVA or Welch test is applied based on the homogeneity of population variance. Prior to this, the assumption of the homogeneity is evaluated using Levene's test of equality of variances. After that, post hoc analysis is conducted for the significant result of One-way ANOVA/ Welch test, Tukey/ Tamhane's T2 test for multiple comparisons is applied accordingly. The results are presented below.

Table 7.12

Marital Status wise comparison of Job Satisfaction

Dimensions	Descriptive Statistics of Marital Status wise comparison				Levene's test of Equality of Variance		One- way ANOVA/ Welch test	
	Single	Married	Divorced	Widow	Test statistics	Sig. value	Test Statistics	Sig. value
JA	2.384 (.628)	2.734 (.611)	2.966 (.340)	2.992 (.611)	2.097	.100	4.682**	.003
OD	3.027 (.861)	3.443 (.701)	3.571 (.512)	3.298 (.701)	1.399	.243	3.111*	.026
JS	2.706 (.699)	3.088 (.599)	3.269 (.391)	3.145 (.519)	1.495	.216	3.794*	.011

Source: Primary Data

**Significant at the 1% level of significance

*Significant at the 5% level of significance

Parentheses represent standard deviation

The comparison result of job satisfaction of sanitation workers across their marital status shows statistically significant difference in Job attributes organizational dynamics and overall job satisfaction. For job attribute, Levene's test indicates no violation of homogeneity of variance ($p = 0.100$), allowing the use of one-way ANOVA. The result of ANOVA reveals a highly significant difference among the groups ($p = 0.003$). The mean score shows that widowed and divorced workers reported higher satisfaction with job attributes compared to married and single workers. Similarly organizational dynamics dimension also meet equal variance assumption ($p = .026$), ANOVA indicates a significant difference ($p = .026$), mean score indicates that the divorced workers reported the highest satisfaction followed by married, widowed and single workers. Overall job satisfaction also shows equal variance ($p = 0.216$) and ANOVA shows significant difference ($p = .011$). The divorced workers have the highest overall job satisfaction followed by married and single workers. These findings point out that the marital status plays an important role in workers job satisfaction.

ANOVA result shows that there is a difference in the satisfaction of sanitation workers according to the marital status of employees. Now it is important for a post hoc test to make multiple comparisons of different marital status. The result of the Tukey HSD Post Hoc test is shown below.

Table 7.13

Multiple Comparisons of Marital Status on Job Satisfaction (Tukey HSD Post Hoc Test)

Tukey HSD				
Dependent Variable	(I) Marital Status	(J) Marital Status	Mean Difference (I-J)	Sig.
JA	Single	Married	-.34934*	.026
		Divorced	-.58205	.051
		Widow	-.60781**	.003
OD	Single	Married	-.41618*	.022
		Divorced	-.54396	.168
		Widow	-.27123	.551
Job Satisfaction	Single	Married	-.38276*	.010
		Divorced	-.56300	.057
		Widow	-.43952	.056

** . The mean difference is significant at the 0.01 level.

* . The mean difference is significant at the 0.05 level.

Source: Primary Data

Tukey HSD Post Hoc Test result shows that in the dimension of job attitude, the significant difference is observed between single with married ($p = 0.026$) and with widows ($p = 0.003$). In the dimension of organizational dynamics, there is a significant difference in the satisfaction of workers observed between single with married ($p = 0.022$) only. Likewise, in overall job satisfaction, there is a significant difference observed between single with married only.

7.7.10 Income wise comparison of Job Satisfaction

Income of employees directly influences their ability to meet personal, social and economic needs, there for to make a study about their income will help to enhance employee motivation, reduce turnover and improve workplace well-being. Research consistently shows that higher income often contributes to greater job

satisfaction because it provides a sense of financial security, fairness, and recognition for one's efforts (Judge, T. A. et al., 2010). Income wise comparison also assist employers in designing better reward structures, addressing dissatisfaction among lower-income workers, and fostering a more motivated and content workforce (Shields, M. A. & Ward, M., 2001). For studying influence of income of sanitation workers on job satisfaction the following hypothesis is formulated and tested.

H0: There is no significant difference in the job satisfaction of sanitation workers according to their annual income.

H1: There is a significant difference in the job satisfaction of sanitation workers according to their annual income.

In order to check the hypothesis, One-way ANOVA/ Welch test is applied according to the homogeneity assumption of population variance. Before that the homogeneity assumption is tested with the help of Levene's test of Equality of Variance. After that, post hoc analysis is conducted for the significant result of One-way ANOVA/ Welch test. Accordingly, Tukey/Tamhane's T2 test for multiple comparisons is applied accordingly. The results are presented below.

Table 7.14

Income wise comparison of Job Satisfaction

Dimensions	Descriptive Statistics of Income wise comparison						Levene's test of Equality of Variance		One- way ANOVA/ Welch test	
	Below 5000	5001-10000	10001-15000	15001-20000	20001-25000	Above 25000	Test statistics	Sig. value	Test Statistics	Sig. value
JA	2.773 (.704)	2.979 (.375)	2.645 (.654)	2.771 (.565)	2.624 (.610)	2.733 (.716)	4.478**	.001	4.015**	.002
OD	3.542 (.678)	3.825 (.467)	3.256 (.774)	3.485 (.649)	3.151 (.692)	3.621 (.897)	3.373**	.005	9.929**	.000
JS	3.157 (.657)	3.402 (.386)	2.950 (.613)	3.128 (.563)	2.887 (.580)	3.177 (.731)	3.626**	.003	8.346**	.000

Source: Primary Data

**Significant at the 1% level of significance

Parentheses represent standard deviation

Income wise comparison results show that there is a difference across various income groups. Levene's test indicates that job attributes ($p = 0.001$), organizational dynamics ($p = 0.005$) and overall job satisfaction ($p = 0.003$) all 'p' values are less than 0.05, hence the assumption of homogeneity of variances is violated, consequently Welch test is used for testing the hypothesis. Welch result shows a significant difference across income categories, that is for job attributes ($p = 0.002$), organizational dynamics ($p = 0.000$) and overall job satisfaction ($p = 0.000$). All the p value of the Welch test are less than 0.05; hence reject H_0 that means income of sanitation workers has an influence on the job satisfaction. Mean score further shows that the employees earning between 50001 to 100000 tend to report higher satisfaction across all dimensions whereas those in the 100001 to 150000 and 200001 to 250000 categories reported comparatively lower satisfaction. Finally, it is concluded that the mid-income earners exhibit relatively better job satisfaction, while both lower and higher income groups show moderate or reduced satisfaction.

Welch result shows that there is a difference in the satisfaction of sanitation workers according to the difference in their income. Now it is important to conduct a post hoc test to make multiple comparisons of different income level. The result of Tamhane's T2 Post Hoc test is shown below.

Table 7.15

Multiple Comparisons of Family Income on Job Satisfaction (Tamhane's T2 Post Hoc Test)

Tamhane				
Dependent Variable	(I) Family Income	(J) Family Income	Mean Difference (I-J)	Sig.
JA	50000 to 100000	Below 50000	.20573	.577
		100001 to 150000	.33366*	.021
		150001 to 200000	.20810	.199
		200001 to 250000	.35498**	.001
		Above 250000	.24583	.930

Tamhane

Dependent Variable	(I) Family Income	(J) Family Income	Mean Difference (I-J)	Sig.
OD	50000 to 100000	Below 50000	.28259	.185
		100001 to 150000	.56876**	.000
		150001 to 200000	.33991*	.015
		200001 to 250000	.67374**	.000
		Above 250000	.20357	.998
	150001 to 200000	Below 50000	-.05732	1.000
		50000 to 100000	-.33991*	.015
		100001 to 150000	.22885	.585
		200001 to 250000	.33383*	.010
		Above 250000	-.13634	1.000
	200001 to 250000	Below 50000	-.39115**	.007
		50000 to 100000	-.67374**	.000
		100001 to 150000	-.10498	.999
		150001 to 200000	-.33383*	.010
		Above 250000	-.47017	.428
JS	50000 to 100000	Below 50000	.24416	.249
		100001 to 150000	.45121**	.000
		150001 to 200000	.27401*	.025
		200001 to 250000	.51436**	.000
		Above 250000	.22470	.971

*. The mean difference is significant at the 0.05 level.

*. The mean difference is significant at the 0.05 level.

Source: Primary Data

Multiple comparisons of different income groups of sanitation workers with the job satisfaction of workers by using Tamhane's T2 Post Hoc Test results shows that in the dimension of job attributes there is significant difference in job satisfaction of workers observed on income level of 50000 to 100000 with income level of 100001 to 150000 ($p = 0.021$) and with 200001 to 250000 ($p = 0.001$). In

the dimension of organizational dynamics difference observed in 50000 to 100000 with 100001 to 150000 ($p = 0.000$), with 150001 to 200000 ($P=0.015$) and with 200001 to 250000 ($p = 0.010$). Income group of 200001 to 250000 shows a difference with below 50000 ($p = 0.007$), with 50000 to 100000 ($p = 0.000$) and with 150001 to 200000 ($p = 0.010$). In the overall job satisfaction part, a difference observed in the income category of 50000 to 100000 with 100001 to 150000 ($p = 0.025$) and with 200001 to 250000 ($p = 0.000$). In all it is concluded that in all dimensions the middle-income category shows difference in job satisfaction when they are comparing with each other.

Section III

7.8 Influence of QWL Factors on Job Satisfaction

In this section of analysis, the influence of QWL on Job Satisfaction is identified with the help of Structural Equation Modelling. According to (Sulochana & et.al, 2024), a study on women sanitation workers in Coimbatore found a significant positive correlation between job satisfaction and work life balance, highlighting the need for improved working conditions and support systems (Rajan, 2021). Examined physical working environment and welfare facilities related factors causing heavy workload among sanitary workers, influencing their QWL and job satisfaction. (Bhowmik & S, 2005), also highlighted the challenging conditions of hygiene and sanitation workers, emphasizing the importance of QWL on job satisfaction.

Overall, QWL has made a significant influence on job satisfaction, hence it is important to understand the same role as well. Regarding the proposed model development of relationship, different model fitness indices are used to verify the theoretical model. Accordingly, Goodness of Fit Index (GFI), Tucker Fit Index (TLI), Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA), Adjusted GFI (AGFI), Incremental Fit Index (IFI), Normed Fit Index (NFI) and Normed chi-square (CMIN/df) are used as the model fitness indices. The study is evaluated the relationship in the order of proposed and measurement model, model fitness indices and hypothesis testing results.

Here the second order reflective structural model is used to understand the level of relationship between components & constructs, statements & components of QWL factors and Job Satisfaction separately and then influence of main constructs of the model. First, the hypotheses at the indicator level are framed to measure the relationship between components and its indicators and then the hypothesis related to the relationship between variables are framed.

H1₁: Working Condition, Compensation, Workload, Worklife Balance, Job Security, Health & Safety, Social Support & Workplace relationship, Training & Development facilities and Career Growth & Advancement are the reflective constructs of Quality of Work Life.

H1₂: Job Attributes and Organizational Dynamics are the reflective constructs of Job Satisfaction.

H1₃: QWL have significant influence on Job Satisfaction of sanitation workers.

In this second- order (higher-order) structural equation model, assessing the path loadings and their significance of indicators of the main constructs, followed by examining the structural path from the second-order factor to other variables, interpreting standardised regression co-efficient.

Firstly, interpret the result of first-order model by checking the standardized loadings from the indicator to the construct. Here, high loadings indicate strong representation of indicators.

Secondly, interpret the second-order structural paths by using path co-efficient. This shows the strength and direction of the sub-dimensions' contribution to the main construct. It is verified with the help of significant value of the relationship.

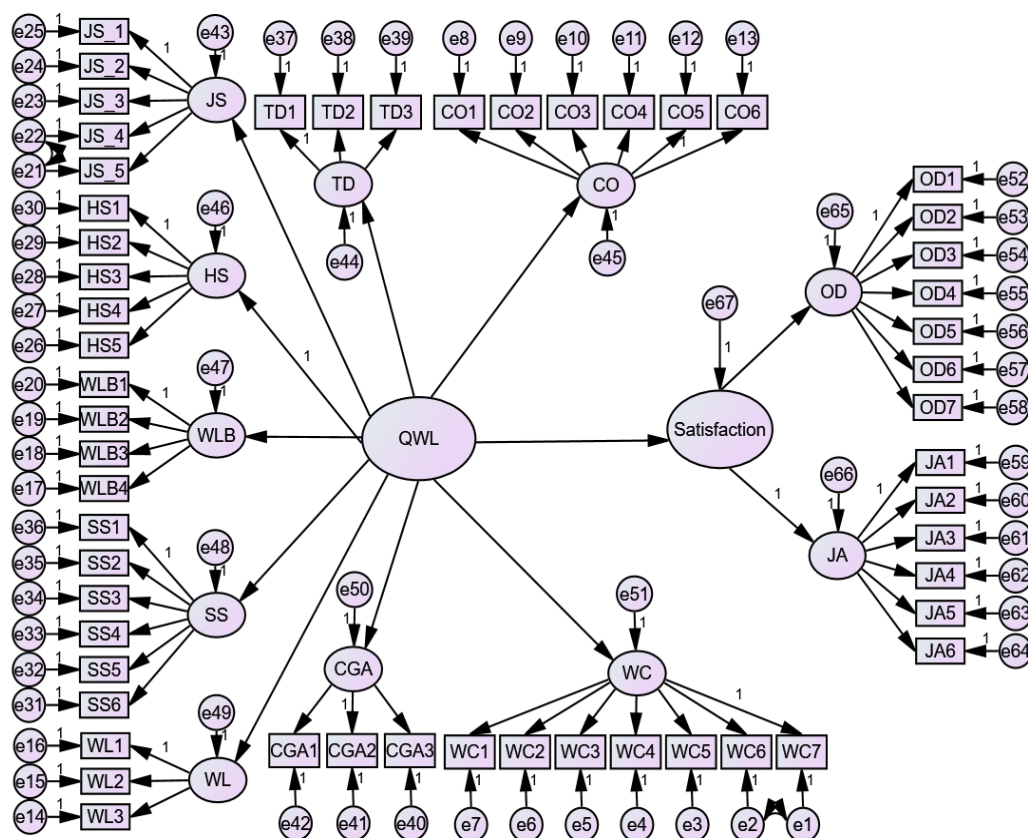
Finally, interpret the structural model (second-order factor to other variables) using standardized path co-efficient. It also explains how the independent variable influences in the dependent variable using different dimensions and indicators.

Regarding the proposed relationship between QWL and Job Satisfaction, the higher-order structural model is used to explain the strength and direction of indicators, dimensions and constructs respectively. The results are presented below.

In the left side of the model, the components and its relationship with QWL is exhibited with regression co-efficient. Similarly, in the right side of the model the components and its relationship with Job Satisfaction are presented. Further, in the centre of the model, the relationship between QWL and Job Satisfaction is displayed.

Figure 7.1

Proposed Model for the influence of QWL on Job Satisfaction



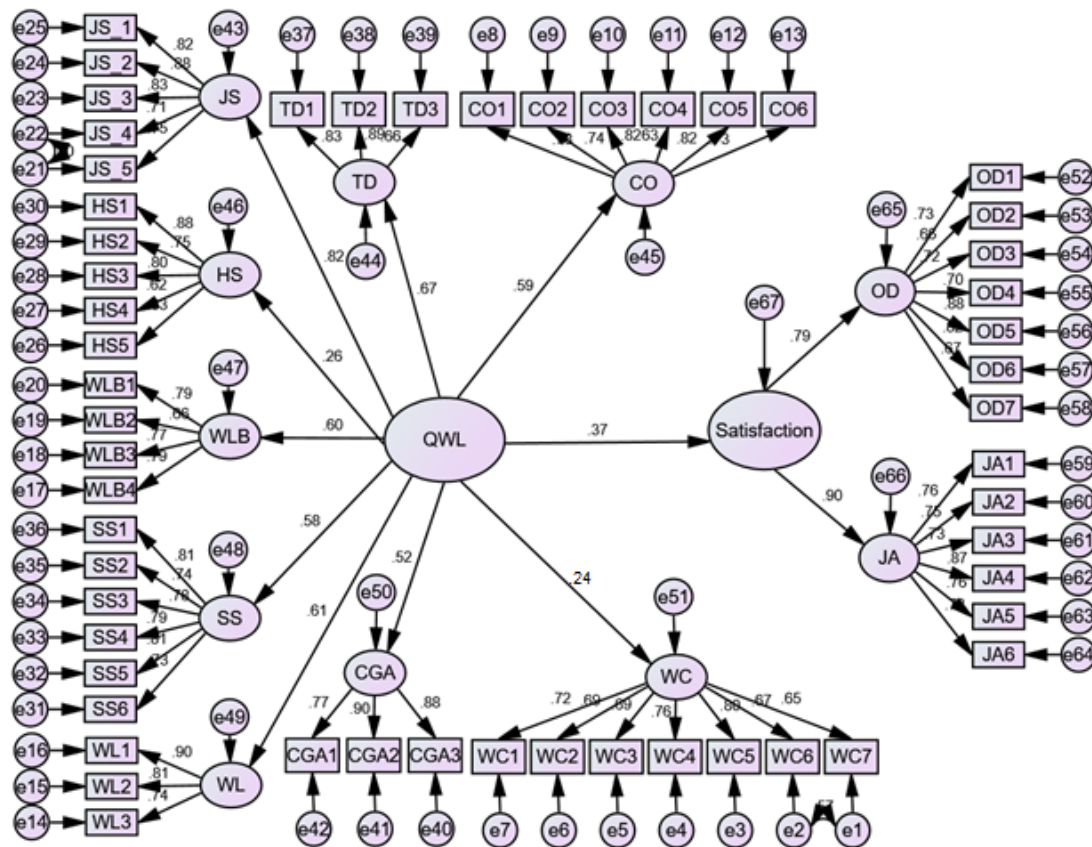
Source: Primary Data

The proposed model for measuring the influence of QWL on Job Satisfaction shows a higher-order structural model. In the first order of QWL, there are nine components are measured with different indicators. Further, the second order shows

the relationship between components and main construct. On the other side of the picture, the first order of Job Satisfaction is measured using two components are its indicators. Furthermore, the relationship between components and construct also verified. Similarly, the structural model shows the relationship between independent variable (QWL) and dependent variable (Job Satisfaction). The measurement model with values of factor loadings and regression co-efficient are presented below.

Figure 7.2

Measurement Model for the influence of QWL on Job Satisfaction



Source: Primary Data

The measurement model of checking the influence of QWL on Job Satisfaction of sanitation workers displays the relationship between components and indicators in the first order level, relationship between construct and components in the second-order level and relationship between constructs in the structural level. Here, in the first order level, the relationship between components and indicators of QWL and Job Satisfaction is established with factors loading of greater than 0.70.

Similarly, in the second order level, the relationship between construct and components of QWL and Job Satisfaction also established with significant regression co-efficient. Most important, the influence of QWL on Job Satisfaction also verified with significant path co-efficient of 0.37 (at 1% level of significance). Hence, QWL has moderate level of influence on Job Satisfaction of sanitation workers in Kerala.

Table 7.16

Model fit indices of the measurement model of QWL and Job Satisfaction

Indices	Value Obtained	Recommended Values of Good Fit	Recommended Values of Acceptable Fit
Normed chi-square (CMIN/df)	2.194	≤ 3	≤ 5
Root Mean Square Residuals (RMR)	0.059	≤ 0.05	≤ 0.08
Comparative Fit Index (CFI)	0.871	≥ 0.90	≥ 0.80
Goodness of Fit Index (GFI)	0.812	≥ 0.90	≥ 0.80
Incremental Fit Index (IFI)	0.871	≥ 0.90	≥ 0.80
Tucker Fit Index (TLI)	0.864	≥ 0.90	≥ 0.80
Normed Fit Index (NFI)	0.810	≥ 0.90	≥ 0.80
Relative Fit Index (RFI)	0.809	≥ 0.90	≥ 0.80
Root Mean Square Error of Approximation (RMSEA)	0.056	≤ 0.08	$= 0.08$

Source: Primary Data

The above-mentioned model fitness indices are used to verify the measurement model of QWL and Job Satisfaction. The value of CMIN/df (2.194) is less than 3, hence the model said to be good fit. Further, the value of RMR (0.059) and RMSEA (0.056) also within the limit of good fitness. Similarly, the values of CFI, GFI, IFI, TLI, NFI and RFI are within the limit of acceptable fit of greater than 0.80. Since the fitness indices are either within the limit of good or acceptable, the model used for checking the influence of QWL on Job Satisfaction is said to be

acceptable. Hence, the above-specified model (figure 7.2) can be used as the measurement model of QWL and Job Satisfaction

Table 7.17

Hypothesis testing result of the model QWL and Job Satisfaction

Hypothesis		Path	Path Co-efficient	p (Sig.) Value	Result
H1 ₁	QWL	→ WC	0.241**	<0.01	Supported
	QWL	→ CO	0.592**	<0.01	Supported
	QWL	→ WL	0.610**	<0.01	Supported
	QWL	→ WLB	0.603**	<0.01	Supported
	QWL	→ JS	0.818**	<0.01	Supported
	QWL	→ HS	0.263**	<0.01	Supported
	QWL	→ SS	0.577**	<0.01	Supported
	QWL	→ TD	0.670**	<0.01	Supported
	QWL	→ CGA	0.524**	<0.01	Supported
H1 ₂	Job Satisfaction	→ JA	0.791**	<0.01	Supported
	Job Satisfaction	→ OD	0.897**	<0.01	Supported
H1 ₃	QWL	→ Job Satisfaction	0.374**	<0.01	Supported

Source: Primary Data

** Significant at 1% level of significance

Concerning the relationship between QWL and its reflecting constructs, the regression co-efficient are significant at 1% level of significance and hence these constructs are effectively contributing for the variable QWL. Regarding the Job Satisfaction, all the reflective constructs have path co-efficient of 0.791 and 0.897 respectively. Since the values are significant at 1% level, these constructs are considered as the reflective measures of Job Satisfaction.

The important result of the structural model shows the regression co-efficient of **0.374** between QWL and Job Satisfaction. Since the value is significant at 1%

level, the proposed hypothesis is supported and QWL have significant influence on the Job Satisfaction of the sanitation workers.

Section IV

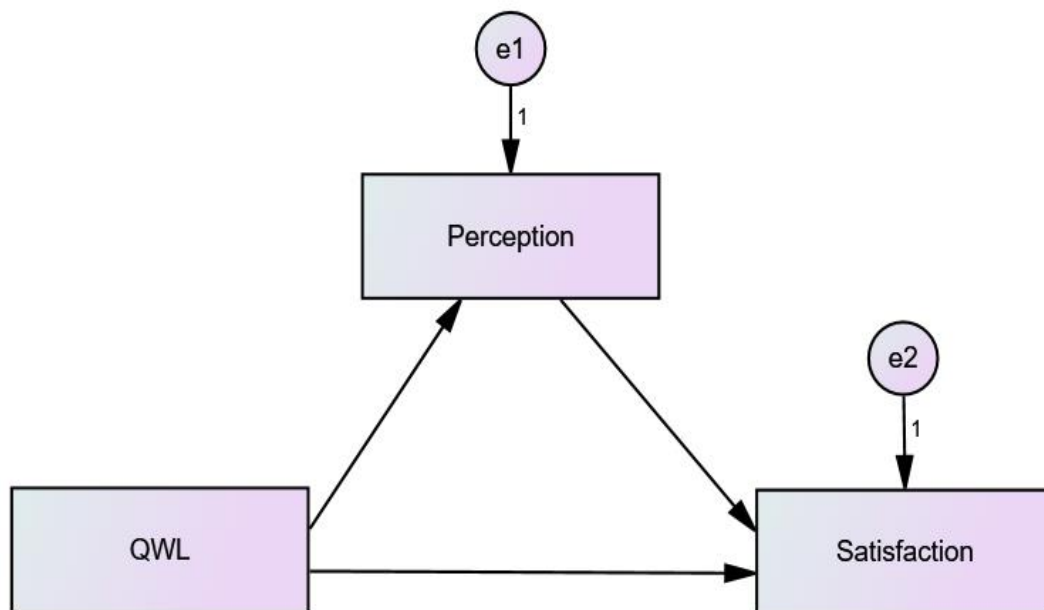
7.9 Mediating role of perception in between QWL and Job Satisfaction

This section of analysis exhibits the mediating role of the Perception in the relationship between Quality of Work Life and Job Satisfaction. To check the direct and indirect relationship, Structural Equation Modelling (SEM) is applied by considering Quality of Work Life as the independent, Perception as the mediating and Job Satisfaction as the dependent variables. Here the direct, indirect and total effect among them is proved with the help of proposed, measurement model, model fit indices and hypothesis testing result. Following hypothesis is formulated in respect of analysis.

H1: Perception act as mediator in the relationship between QWL and Job Satisfaction

Figure 7.3

Proposed Model of mediating role of Perception in between QWL and Job Satisfaction

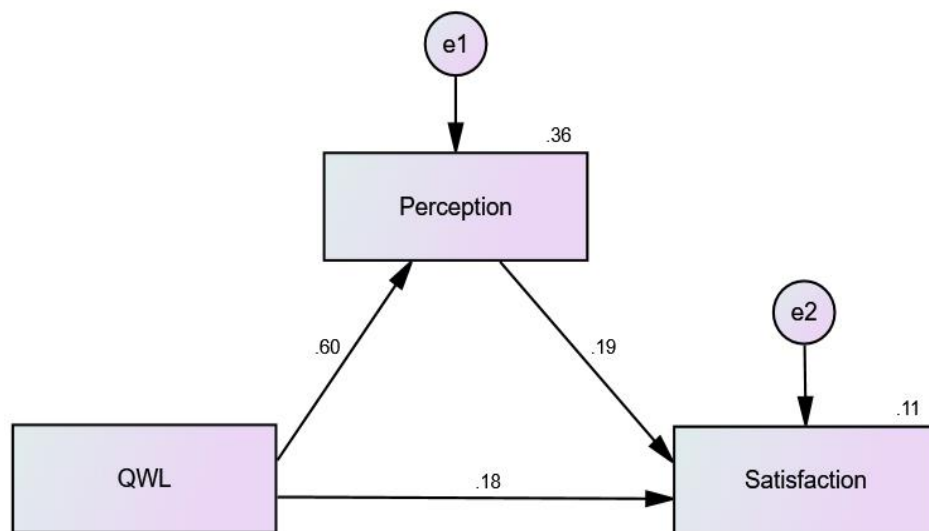


Source: Primary Data

The figure is the proposed model for explaining the mediating role of the Perception in the relationship between QWL and Job Satisfaction. Here imputed SEM model is used to explain the relationship. Accordingly, the QWL is explored and confirmed as the observed variable from nine-factor solution, Perception from three-factor solution, and Job Satisfaction from two-factor solution respectively. The relationship is measured by proposing a path diagram model of connecting regression path from X and Y, X and M and M and Y. Accordingly, following measurement model shows the path co-efficient and its explanations.

Figure 7.4

Measurement Model of the mediating role of Perception in between QWL and Job Satisfaction



Source: Primary Data

The figure clarifies the direct and mediating relationship of Quality of Work Life and Perception on Job Satisfaction of sanitation workers. Here, Perception is an intermediate variable that explain how and why QWL influences the Job Satisfaction. It is clear from the mediation analysis, there is a significant relationship between QWL (independent variable) and Satisfaction (dependent variable) ($\beta = 0.18$, $p < 0.01$) and there is significant relationship between Quality of Work Life and Perception (mediating variable) ($\beta = 0.60$, $p < 0.01$) and between Perception and Job Satisfaction ($\beta = 0.19$, $p < 0.01$). This is the case of partial mediation (Table 7.18);

which implies that there is not only a significant relationship between the mediator and the dependent variable, but also some direct relationship between the independent and dependent variables. The partial/ moderate relationship is explained using the value of Variance Accounted For (VAF) derived from standardized indirect effect and standardized total effect between independent and dependent variables. The results are presented below.

Table 7.18

Mediation Testing result of the Model (Total, Direct and Mediation Effect of Paths) using Bootstrapping Procedure

Independent Variable	Mediating Variable	Dependent Variable	Standardized Total Effect (c' + axb)	Standardized Direct Effect (c')	Standardized Indirect Effect (Mediation Effect) (axb)	VAF = Standardized Indirect Effect ÷ Standardized Total Effect	Sig. Value	Result of Mediation
Quality of Work Life	Perception	Job Satisfaction	0.298	0.185	0.114	$\frac{0.114}{0.298} = 0.382$	0.000	Partial Mediation

Source: Primary Data (Output of AMOS)

From the above table it is evident that there is a partial mediation of Perception in the relationship between Quality of Work Life and Job Satisfaction according to the strength of mediation is calculated as Variance Accounted For (VAF) of 0.382. This value is within the range of 0.2 to 0.8, hence there exists 38% of partial or moderate mediation of Perception in the proposed relationship. Partial mediation is given if the independent variable exercises some of its influence on the dependent variable through the mediating variable, and it also exercises some of its influence directly on the dependent variable and not through mediating variable. Since the 'p' value is significant at 1% level of significance, the proposed hypothesis (H1) is accepted and hence Perception partially mediates in the relationship between Quality of Work Life and Job Satisfaction of Sanitation Workers in Kerala.

7.10 Conclusion

Measuring the job satisfaction of sanitation workers is the aim of this chapter, factor analysis grouping various statements related with job satisfaction in to two dimensions, they are job attributes and organizational dynamics. Sanitation workers show an average level of overall satisfaction. When Job satisfaction of workers compared with factors of QWL it is observed that QWL factors had an influence on the job satisfaction of sanitation workers. This chapter also tests the mediating role of perception in between QWL and job satisfaction; it is revealed that perception partially mediates in the relationship between QWL and job satisfaction of sanitation workers in Kerala.

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Chapter 8

Work Life Challenges faced by Sanitation Workers during calamities

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8.1 Introduction

Sanitation workers play an essential role in protecting the public's health; they are doing a most vulnerable job, especially during natural calamities. Their job becomes more demanding during calamities such as floods, pandemics, cyclones and epidemics, as during these period they have to face the problems of waste accumulation, contamination risks, and public threats sharply increase (Behera, B et al., 2021). During these periods they have to face heightened exposure to hazardous waste, insufficient protective equipment, and extended working hours, leading to physical strain and psychological stress (WHO, 2020). Moreover, calamities intensify work–life imbalance, as workers struggle to manage demanding work schedules while ensuring the safety and wellbeing of their families, particularly when mobility, housing, and essential services are disrupted (Roy, D. et al., 2022). These workers are also facing the experience of social stigma, less remuneration and inadequate institutional support, which further improved their work life challenges during calamities (Kulkarni, A. & Gokhale, P., 2020). Understanding these challenges is essential for developing an inclusive policy, improving occupational safety and building a better public health system.

The research instrument of this study includes four calamities like flood, earthquake, Nippa and Covid-19. Out of the total 380 samples only 361 respondents are responding that they are doing the job of sanitation during the period of calamities, the rest may be new workers. The following table shows the descriptive statistics

Table 8.1

Descriptive statistics of sanitation workers working during calamities

Type of calamities	YES	Percentage	NO	Percentage	Total
Flood	303	84	58	16	361
Earthquake	59	16	302	84	361
Nippa	84	23	277	77	361
Covid-19	339	94	22	06	361

Source: Primary data

The table 8.1 clearly indicates that 94% of the sanitation workers were working during the period of Covid- 19 pandemic, 84% of the workers were working during the period of flood, 23% of them were working the period of Nippa and only 16% of them are working the period of the earthquake.

In this study work life challenges are grouped into two based on the result of Exploratory Factor Analysis (EFA), they are operational challenges and personal challenges. The present chapter is divided into three sections;

Section I- Work life challenges faced by sanitation workers during calamities.

Section II- Comparison of work life challenges across demographic classification.

Section III- Effect of challenges on quality of work life.

To compare the demographic groups, Age, Gender, Social Class, Family Type, Education, Employment Status, Type of job, Place of living, Marital Status and Family Income are selected. Following sections are provided in respect of the above matters.

8.2 Objectives

- To examine the Work Life Challenges faced by sanitation workers during calamities and how it affected their Quality of Work Life.

8.3 Hypotheses

- H₁₀: There is an average level of challenges faced by sanitation workers during calamities.
- H₁₁: There is a significant difference in the challenges faced by sanitation workers according to the demographic groups.
- H₁₂: There is a significant relationship between challenges and quality of work life of sanitation workers.

7.4 Methodology and Database

To prove the objectives specified in this chapter, primary data is collected from sanitation workers using pretested structured questionnaire. A total of 380 sanitation workers are selected as the sample, out of which only 361 respondents are facing challenges during calamities. Hence these samples are taken for analysis purposes to fulfill the objectives.

To understand the challenges, descriptive statistics and one-sample t-test are used. Thereafter, the mean comparison is conducted to understand the significant difference across demographic groups. To achieve this, an independent samples t-test and either one-way ANOVA or the Welch test are applied, depending on the homogeneity of variance. Levene's test of equality of variances is used to assess this assumption. Furthermore, Tukey HSD/Tamhane's T2 post-hoc test is used to check the multiple comparisons of independent variables on significant difference in challenges faced by them.

Afterwards the relationship between challenges and quality of work life is identified using Karl Pearson Correlation Co-efficient. The results are presented in the following sections.

8.5 Variables of the Study

Table 8.2

Variables used for measuring work life challenges during calamities

Construct	Dimensions	Type of questions
Challenges	Operational Challenges (OC) and Personal Challenges (PC)	5 Point Likert Scale Questions

Source: Literature Review

Section I

8.6 Work Life Challenges faced by Sanitation Workers during calamities

In this section the challenges faced by sanitation workers are analysed using descriptive statistics (mean and standard deviation) and one-sample t-test.

Operational (OC) and Personal challenges (PC) are categorized as the two dimensions of measuring the challenges. The following analysis is concerned with the challenges in the order of descriptive statistics, the one-sample t-test and its discussions and interpretation based on hypothesis formulated.

Table 8.3

Descriptive Statistics of Challenges of Sanitation Workers

Factors and Statements	Mean	Std. Deviation
Operational Challenges		
Heavy work load during calamities affects quality standards	3.1690	.96133
Dealing with hazardous materials creates significant health risks	3.4626	.93948
Communication breakdown effects on effectiveness	3.2161	1.01536
Poor sanitation infrastructure during disasters hinders hygiene maintenance	3.1884	1.02901
Heavy work load during calamity put a strain on maintaining quality	3.1690	.96133
Personal Challenges		
Emotional stress reduces workers' mental wellbeing and effectiveness.	3.2188	1.00237
Financial constrains at the time of calamities	3.3601	.92073
Absence of training leave workers ill	3.0194	1.00397
Discrimination and stigmatization	3.2133	1.02004

Source: Primary Data

The descriptive statistics of work life challenges of sanitation workers show that workers face both substantial operational barriers and personal hardships during calamities, the mean value of all statements is above 3, in a 5 point Likert scale starting from strongly disagree to strongly agree, the above three value shows that all the workers have a mind of existence of work life challenges during calamities. In the case of operational challenges highest mean value recorded for the statement, workers are facing the problem of health issue due to handling hazardous materials

($\bar{X} = 3.4626$) which indicates that health issue is the major challenges during disaster. Communication and coordination difficulties ($\bar{X} = 3.21$) and poor sanitation infrastructure in disaster affected area ($\bar{X} = 3.18$) also create problems in providing effective sanitation services. Increased workload at the time of calamities ($\bar{X} = 3.17$) further contribute to the operational strain, making it difficult for workers to maintain quality standards.

In the area of personal challenges mean of 3.21 was recorded for emotional stress from witnessing disaster-related destruction and discrimination or stigmatization during calamities, which emerge as prominent concern affecting their mental wellbeing. Financial constraints during this period ($\bar{X} = 3.36$) further intensify their challenges by limiting their ability to adopt necessary protective measures. Absence of required training for handling disasters ($\bar{X} = 3.01$) also create a fling of ill-equipped to handle the complexities of sanitation work during emergencies. In all sanitation workers face both operational and personal challenges during calamities, reflecting the need for improved training and safety measurement.

8.6.1 The Level of work life challenges faced by sanitation workers

Challenges faced by sanitation workers are analyzed by using one-sample t-test as the proposed variable is measured with the help of a five-point Likert scale. Since it is, the test value is considered as 3 and the mean score which is above the test value defines that there will be good level of existence of challenges for workers during calamities. If the mean value is less than test value, then there will not be good level of existence of challenges during calamities. Similarly, if the mean value is equal to test value, there will be average level of challenges for sanitation workers. Following hypothesis is formulated and tested accordingly,

Hypotheses formulated and tested

H0: There is an average challenges faced by sanitation workers during calamities

H1: There is no average challenges faced by sanitation workers during calamities

Table 8.4

One Sample Statistics and Test Result of Work Life Challenges

Dimensions of challenges	One-Sample Statistics			One Sample Test (Test Value = 3)		
	N	Mean	Std. Deviation	t	df	Sig. (p) value
Operational Challenges	361	3.2590	.83026	74.580**	360	.000
Personal Challenges	361	3.2029	.79813	76.247**	360	.000
Challenges	361	3.2310	.76446	80.302**	360	.000

Source: Primary Data

**Significant at the 1% level of significance

The result of one sample t test is exhibited in the above table which indicates that operational challenges ($\bar{X} = 3.2590$), personal challenges ($\bar{X} = 3.2029$) and overall challenges ($\bar{X} = 3.2310$) have the mean score greater than 3, which means workers are facing above average level of challenges during the period of calamities. Since all 'p' value is less than 0.01, null hypothesis is rejected at 1% level of significance. All sanitation workers are facing considerable difficulties during the period of calamities like flood, Nipha, Covid 19 and other communicable diseases.

Section II

8.7 Comparison of Work Life Challenges across demographic classification

Comparison of the demographic profile of workers with their work life challenges helps to understand how the individual characteristics influence employees' experience in the workplace. The age, gender, marital status, income and employment status often shape workers' capacity to manage workload, stress, safety concerns and overall well-being. Younger workers may experience greater workload pressure due to limited experience, while married or older employees may face increased role conflict when balancing family and work responsibilities (Chand, P & Kaur, R., 2014). Comparing demographic characteristics with work-life challenges provides valuable insights for workforce planning and the creation of

supportive occupational environments (Hammer, L. B et al., 2016). Different demographic wise comparisons are given below.

8.7.1 Age wise comparison of work life Challenges during calamities

Age of workers is an important factor which affects the work life challenges faced by any worker. Middle-aged and older employees may experience greater challenges related to workload pressure, health limitations, physical strain, and the need to adapt to technological or organizational changes (Ng, T. W. H. & Feldman, D. C., 2015). Here age group is classified as below 35, 35 – 45, 46-55 and above 55. In order to check the comparison of work life challenges among different age groups of sanitation workers, following hypothesis is formulated and tested.

H0: There is no significant difference in the challenges faced by sanitation workers according to their age groups.

H1: There is a significant difference in the challenges faced by sanitation workers according to their age groups.

In order to check the hypothesis, One-way ANOVA/ Welch test is applied according to the homogeneity assumption of population variance. Before that the homogeneity assumption is tested with the help of Levene's test of Equality of Variance.

Table 8.5

Age wise comparison of Work Life Challenges

Dimensions	Descriptive Statistics of Age wise comparison				Levene's test of Equality of Variance		One- way ANOVA/ Welch test	
	Below 35	35 - 45	46-55	Above 55	Test statistics	Sig. value	Test Statistics	Sig. value
Operational Challenges	3.153 (.823)	3.263 (.869)	3.276 (.814)	3.243 (.848)	0.596	.618	0.200	.896
Personal Challenges	3.112 (.752)	3.308 (.796)	3.171 (.796)	3.180 (.856)	1.210	.306	0.793	.498
Challenges	3.133 (.684)	3.285 (.762)	3.223 (.768)	3.211 (.832)	2.020	.111	0.343	.794

Source: Primary Data

Parentheses represent standard deviation

The result of age wise comparison of work life challenges faced by sanitation workers is shown in the above table 8.5. Levene's test of equality of variance was done first to prove the equality assumption, the result indicates that operational challenges ($p = 0.618$), personal challenges ($p = 0.306$) and overall challenges ($p = 0.111$) having the 'p' value greater than 0.05, so it proves the equality of population variance for all part, use one-way ANOVA for testing hypothesis. H_0 is accepted as per the result of one-way ANOVA because the 'p' value for operational challenges ($p = 0.896$), personal challenges ($p = 0.498$) and overall challenges ($p = 0.794$) are more than 0.05. The difference in age does not create difference in work life challenges of sanitation workers.

8.7.2 Gender wise comparison of work life challenges during calamities.

The role of men and women in the working place and family matters is different, generally society itself made divide among them. Women generally face greater work-family conflict due to higher expectation for domestic and caregiving duties, which can increase stress and reduce overall well-being (Eby, L. T. et al., 2005). Men, although increasingly involved in family roles, often encounter organizational norms that emphasize long working hours and continuous availability, which create different but significant strains (Hill, E. J. et al., 2010). Hence the gender based disparity in the operational and personal challenges of sanitation workers is essential for making a rational judgement about their work life challenges during calamities.

In order to check the influence of gender of sanitation workers on work life challenges, following hypothesis is formulated and tested.

H₀: There is no significant difference in the challenges faced by sanitation workers during calamities according to their gender.

H₁: There is a significant difference in the challenges faced by sanitation workers during calamities according to their gender.

For testing the hypothesis independent sample t test is used according to homogeneity assumption is of population variance. Levene's test for equality of variance is used to check this assumption. The results of the test are given below.

Table 8.6

Gender wise comparison of Work Life Challenges

Dimensions	Gender	Mean	SD	Levene's Test for Equality of Variances		t-test result	
				F	Sig.	t	Sig.
OC	Male	3.238	.870	Equal variances assumed	5.084*	.564	.573
	Female	3.288	.772	Equal variances not assumed		.575	.566
PC	Male	3.215	.813	Equal variances assumed	.809	.352	.725
	Female	3.185	.779	Equal variances not assumed		.355	.723
CH	Male	3.226	.783	Equal variances assumed	.959	.122	.903
	Female	3.236	.740	Equal variances not assumed		.123	.902

Source: Primary Data

*Significant at 5% level of significance

Parentheses represent standard deviation

Before testing the hypothesis equality of population variance is identified with the help of Levene's test, the result depicts that in case of operational challenges 'p' = 0.025 which is less than 0.05, here the test value and significant value corresponding to the equality variance not assumed is selected for mean comparison. The T test result indicates that there is no difference in the challenges

faced by sanitation workers during calamities according to their gender as the 'p' > 0.05. In case of personal challenges and overall challenges Levene's value is greater than 0.05, the test value and significant value corresponding to equal variance assumed is considered for taking a judgment about the hypothesis. The t-test result of personal challenges ($p = 0.725$) and for overall challenges ($p = 0.903$), these two 'p' values are greater than 0.05, hence the null hypothesis fails to be rejected. That means there is no significant difference in the challenges faced by sanitation workers during calamities according to their gender.

8.7.3 Social class wise comparison of work life challenges during calamities.

Influence of social class on sanitation workers' work life challenges during calamities is vital for obtaining a complete view of workforce vulnerability. Comparing workers' work-life challenges across different social classes provides valuable insights for designing inclusive disaster management strategies, workplace policies, and welfare interventions. It helps identify which groups are more vulnerable and why, enabling policymakers and employers to adopt targeted measures that ensure equity, resilience, and well-being in the workforce (Smith, J. & Schreiner, M., 2021). For checking the influence of social class on work life challenges of sanitation workers the following hypothesis is set and tested.

H0: There is no significant difference in the challenges faced by sanitation workers during calamities according to their social class.

H1: There is a significant difference in the challenges faced by sanitation workers during calamities according to their social class.

To examine the hypothesis, one- way ANOVA/Welch test is applied based on the result of the homogeneity of variance assumption. The homogeneity assumption is verified by using Levene's test of Equality of Variance. The results are presented below.

Table 8.7

Social class wise comparison of Work Life Challenges

Dimensions	Descriptive Statistics of Social class wise comparison			Levene's test of Equality of Variance		One- way ANOVA/ Welch test	
	Forward Class	Other Backward Class	Backward Class	Test statistics	Sig. value	Test Statistics	Sig. value
OC	3.454 (.787)	3.239 (.864)	3.190 (.816)	2.585	.077	2.645	.072
PC	3.333 (.797)	3.224 (.829)	3.134 (.774)	1.049	.351	1.646	.194
CH	3.394 (.757)	3.231 (.796)	3.162 (.738)	1.204	.301	2.349	.097

Source: Primary Data

Parentheses represent standard deviation

Equality of variance assumption is proved in case of operational challenges ($p = 0.077$), personal challenges ($p = 0.351$) and overall challenges ($p = 0.301$) as the Levene's test result for all of them are more than 0.05, so test used for verifying the hypothesis is one-way ANOVA. The result of ANOVA for operational challenges ($p = 0.072$), personal challenges ($p = 0.194$) and overall challenges ($p = 0.097$) shows that 'p' values are more than 0.05; hence the null hypothesis fails to be rejected. There is no difference in the work life challenges faced by sanitation workers from backward and forward class. They are facing same level of work life challenges during calamities.

8.7.4 Family Type wise comparison of work life challenges during calamities.

The family background from where the employees have come from has a great influence on individuals' coping capacity and stress level. The family type of worker, nuclear or joint, shapes the distribution of household responsibilities, availability of social support, and emotional resilience, all of which affect how employees manage work-life demands in times of crisis (Bianchi, S. M. et al., 2012). During calamities such as natural disasters or pandemics, employees belonging to nuclear families may experience heightened pressures due to limited support systems and the concentration of caregiving duties on fewer members

(Craig, L. & Churchill, B., 2020). For comparing family type with work life challenges during calamities the following hypothesis is formulated and tested.

H0: There is no significant difference in the challenges faced by sanitation workers during calamities according to their family type.

H1: There is a significant difference in the challenges faced by sanitation workers during calamities according to their family type.

For testing the hypothesis independent sample t-test is used according to the homogeneity assumption is of population variance. Levene's test for equality of variance is used to check this assumption. The results of the test are given below.

Table 8.8

Family Type wise comparison of Work Life Challenges

Dimensions	Family Type	Mean	SD	Levene's Test for Equality of Variances		t-test result		
				F	Sig.	t	Sig.	
OC	Nuclear	3.276	.829	Equal variances assumed	.252	.616	0.716	.474
	Joint family	3.201	.833	Equal variances not assumed			0.715	.476
PC	Nuclear	3.234	.798	Equal variances assumed	.037	.847	1.401	.162
	Joint family	3.094	.791	Equal variances not assumed			1.408	.161
CH	Nuclear	3.255	.765	Equal variances assumed	.212	.646	1.120	.263
	Joint family	3.147	.758	Equal variances not assumed			1.126	.262

Source: Primary Data

Parentheses represent standard deviation

As per the result of Levene's test of equality of variance, equal variance assumption is proved for all dimensions of challenges and for overall challenges. The 'p' value of operational challenges ($p = 0.616$), personal challenges ($p = 0.847$) and overall challenges ($p = 0.646$) are higher than 0.05, hence t-test result corresponding to equal variance assumption is taken into account for testing hypothesis. The t-test result shows that operational challenges ($p = 0.474$), personal challenges ($p = 0.162$) and overall challenges ($p = 0.263$) having 'p' value greater than 0.05, so the null hypothesis is accepted at 5% level of significance. No significant difference exists in the work-life challenges experienced by workers belonging to nuclear and joint families.

8.7.5 Education wise comparison of work life challenges faced by sanitation workers during calamities

Educational level may have an influence on how the employees manage their work life challenges during calamities. Education of people determines their job role, access to various resources and level of autonomy available in the workplace. During calamities like floods, natural disaster or such type of pandemic employees with higher education levels may have greater opportunities for remote work, flexible scheduling, and organizational support, whereas those with lower educational qualifications may be concentrated in frontline or physically demanding jobs that expose them to greater risks (ILO, 2020). The study here tries to compare educational level of sanitation workers with their challenges, for that the following hypothesis is formulated and tested.

H0: There is no significant difference in the challenges faced by sanitation workers during calamities according to their education.

H1: There is a significant difference in the challenges faced by sanitation workers during calamities according to their education.

To examine the hypothesis, one-way ANOVA/ Welch test is applied based on the result of the homogeneity of variance assumption. The homogeneity assumption is verified by using Levene's test of Equality of Variance. The results are presented below

Table 8.9

Education wise comparison of Work Life Challenges

Dimensions	Descriptive Statistics of Social class wise comparison			Levene's test of Equality of Variance		One- way ANOVA/ Welch test	
	Upto 10th std	10th to 12	Graduate	Test statistics	Sig. value	Test Statistics	Sig. value
OC	3.197 (.828)	3.262 (.829)	3.568 (.859)	0.006	.994	0.960	.384
PC	3.156 (.791)	3.208 (.795)	3.363 (.951)	0.944	.390	0.352	.704
CH	3.177 (.756)	3.235 (.762)	3.465 (.894)	0.687	.504	0.702	.496

Source: Primary Data

Parentheses represent standard deviation

Levene's test of equality of variance test result indicates that one-way ANOVA can be used for testing hypothesis. In case of operational challenges, personal challenges and overall challenges the assumption of equality of variance is proved. The one-way ANOVA result for all items is more than 0.05, hence H₀ is accepted. Difference in educational level of employees has no influence on work life challenges of sanitation workers. Graduate employees and less than 10th standard employees are facing same type of work life challenges during calamities.

8.7.6 Employment status wise comparison of work life challenges during calamities.

The job status of sanitation workers in Kerala may be either permanent or temporary. Permanent employees typically have more predictable work arrangements and stronger institutional protections, which can lessen work-life conflict during crises (Tompa, E. et al., 2007). For making a comparison of employment status with work life challenges during calamities the following hypothesis is set and tested.

H0: There is no significant difference in the challenges faced by sanitation workers during calamities according to their employment status.

H1: There is a significant difference in the challenges faced by sanitation workers during calamities according to their employment status.

For testing the hypothesis independent sample t-test is used according to homogeneity assumption is of population variance. Levene's test for equality of variance is used to check this assumption. The results of the test are given below.

Table 8.10

Employment status wise comparison of Work Life Challenges

Dimensions	Employment Status	Mean	SD	Levene's Test for Equality of Variances		t-test result	
				F	Sig.	t	Sig.
OC	Permanent	3.239	.855	Equal variances assumed	4.779*	0.834	.405
	Temporary	3.326	.739	Equal variances not assumed		0.902	.368
PC	Permanent	3.162	.807	Equal variances assumed	1.611	1.794	.074
	Temporary	3.341	.755	Equal variances not assumed		1.860	.065
CH	Permanent	3.200	.774	Equal variances assumed	1.043	1.388	.166
	Temporary	3.333	.725	Equal variances not assumed		1.439	.152

Source: Primary Data

**Significant at the 5% level of significance*

Parentheses represent standard deviation

On testing the equality variance assumption, it is observed that for operational challenges p value is less than 0.05 ($p = 0.029$), so the assumption of equal variance not assumed is taken into account. In case of personal challenges and overall challenges ' p ' value are higher than 0.05, hence t -test value corresponding to equal variance assumption is taken into account. On checking the t -value it is observed that in the case of operational challenges ($p = 0.368$), personal challenges ($p = 0.074$) and overall challenges ($p = 0.166$) having ' p ' value higher than 0.05, so null hypothesis is failed to reject at 5% level of significance. All the dimensions and overall challenges faced by sanitation workers during calamities are not at all influenced by the nature of their employment.

8.7.7 Place of residence wise comparison of work life challenges faced by sanitation workers during calamities

Sanitation workers are working in urban areas, but they may live in urban, semi-urban or rural areas. There may be a chance of difference in the challenges faced by a worker from urban and rural area. Employees living in urban, semi-urban, and rural areas experience crises differently due to disparities in infrastructure, transportation, access to health services, and communication facilities (Cutter, S. L et al., 2014). For studying influence of living place of sanitation workers on work life challenges during calamities the following hypothesis is formulated and tested.

H0: There is no significant difference in the challenges faced by sanitation workers during calamities according to their place of residence.

H1: There is a significant difference in the challenges faced by sanitation workers during calamities according to their place of residence.

To examine the hypothesis, one-way ANOVA/Welch test is applied based on the result of the homogeneity of variance assumption. The homogeneity assumption is verified by using Levene's test of Equality of Variance. The results are presented below.

Table 8.11

Place of residence wise comparison of Work Life Challenges

Dimensions	Descriptive Statistics of Place of residence wise comparison			Levene's test of Equality of Variance		One- way ANOVA/ Welch test	
	Urban	Semi Urban	Rural	Test statistics	Sig. value	Test Statistics	Sig. value
OC	3.371 (.843)	3.270 (.825)	3.157 (.813)	0.021	.979	2.382	.094
PC	3.276 (.817)	3.203 (.787)	3.139 (.786)	0.325	.723	1.046	.352
CH	3.323 (.781)	3.236 (.775)	3.148 (.740)	0.197	.821	1.881	.154

Source: Primary Data

Parentheses represent standard deviation

Place of residence comparison of work life challenges faced by sanitation workers during calamities were tested one- way ANOVA is presented in the above table. Before conducting one-way ANOVA equality of population variance is measured with Levene's, result of which shows that operational challenges ($p = 0.979$), personal challenges ($p = 0.723$) and overall challenges ($p = 0.197$) having 'p' value more than 0.05, hence equality of population variance is proved. The ANOVA result of operational challenges ($p = 0.094$), personal challenges ($p = 0.352$) and overall challenges ($p = 0.154$) indicates that there is no difference in challenges among the workers living in urban area, semi urban area and rural area. Here H_0 is failed to reject at 5% level of significant because all 'p' values are more than 0.05.

8.7.8 Working place wise comparison of work life challenges faced by sanitation workers during calamities

Sanitation workers are working either at corporation or at municipalities, the working situation in both places were different. For making work place wise comparison the following hypothesis is formulated and tested.

H0: There is no significant difference in the challenges faced by sanitation workers during calamities according to their working place.

H1: There is a significant difference in the challenges faced by sanitation workers during calamities according to their working place.

For testing the hypothesis independent sample t-test is used according to the homogeneity assumption is of population variance. Levene's test for equality of variance is used to check this assumption. The results of the test are given below.

Table 8.12

Working Place wise comparison of Work Life Challenges

Dimensions	Working Place	Mean	SD	Levene's Test for Equality of Variances		t-test result	
				F	Sig.	t	Sig.
OC	Corporation	3.366	.762	Equal variances assumed		2.727**	.007
	Municipality	3.129	.890	Equal variances not assumed	20.35**	2.688**	.008
PC	Corporation	3.280	.751	Equal variances assumed		2.032*	.043
	Municipality	3.109	.843	Equal variances not assumed	11.53**	2.011*	.045
CH	Corporation	3.323	.686	Equal variances assumed		2.543*	.011
	Municipality	3.119	.837	Equal variances not assumed	25.94**	2.498*	.013

Source: Primary Data

***Significant at the 1% level of significance*

**Significant at the 5% level of significance*

Parentheses represent standard deviation

Levene's test result shows that equal variance not assumed is taken for t- test because all the 'p' value is less than 0.05. The t-test result of operational challenges ($p = 0.008$), personal challenges ($p = 0.045$) and overall challenges ($p = 0.013$) indicates that its 'p' values are less than 0.05 and hence H_0 is rejected at 5% level of significance. There is significant difference in work life challenges faced by sanitation workers according to their living place. Mean score comparison shows that workers in corporations are facing more work life challenges during calamities than municipality workers.

8.7.9 Marital status wise comparison of work life challenges faced by sanitation workers during calamities

The study classified the marital status of workers as single, married, divorced and widow, workers from different marital status may approach the calamities in different perspective. A married worker may have a fear in doing his job during the period of communicable diseases. During calamities such as pandemics, floods, or natural disasters, the fear of exposing their family to infection or hazards increases stress levels, making the balance between work and home life even more difficult (WaterAid India., 2020). For studying influence of marital status of sanitation workers on work life challenges the following hypothesis is formulated and tested.

H₀: There is no significant difference in the challenges faced by sanitation workers during calamities according to their marital status.

H₁: There is a significant difference in the challenges faced by sanitation workers during calamities according to their marital status.

To examine the hypothesis, one- way ANOVA/Welch test is applied based on the result of the homogeneity of variance assumption. The homogeneity assumption is verified by using Levene's test of Equality of Variance. The results are presented below

Table 8.13

Marital Status wise comparison of Work Life Challenges

Dimensions	Descriptive Statistics of Marital Status wise comparison				Levene's test of Equality of Variance		One- way ANOVA/ Welch test	
	Single	Married	Divorced	Widow	Test statistics	Sig. value	Test Statistics	Sig. value
OC	3.365 (.806)	3.245 (.829)	3.225 (.996)	3.329 (.835)	0.682	.564	0.225	.879
PC	3.211 (.786)	3.191 (.792)	3.550 (.806)	3.193 (.899)	0.222	.881	0.652	.582
CH	3.288 (.733)	3.218 (.760)	3.387 (.868)	3.261 (.841)	0.387	.763	0.225	.879

Source: Primary Data

Parentheses represent standard deviation

The comparison of marital status of workers with work life challenges faced during calamities shows that there is no significant difference. Before conducting hypothesis testing equality of population variance was tested with Levene's test, which shows that there is equality of population variance, so One-way ANOVA is the test used for testing hypothesis. ANOVA result of operational challenges ($p = 0.879$), personal challenges ($p = 0.582$) and overall challenges ($p = 0.879$) indicates that all 'p' value are higher than 0.05, hence accept the null hypothesis.

8.7.10 Income wise comparison of work life challenges faced by sanitation workers during calamities

Income of sanitation workers is grouped in to 6 groups starting from below 50000 and ending at above 250000. Workers with higher or more stable incomes, often found in formal or permanent positions, may receive better protective equipment, regular wages, and social security benefits. In contrast, low-income sanitation workers especially casual laborers, contract workers, and informal waste handlers face higher risks due to irregular income, lack of insurance, and limited workplace safety provisions during crises (Singh, K. & Somani, P., 2020). For

studying influence of income of sanitation workers on work life challenges during calamities the following hypothesis is formulated and tested.

H0: There is no significant difference in the challenges faced by sanitation workers during calamities according to their annual income.

H1: There is a significant difference in the challenges faced by sanitation workers during calamities according to their annual income.

To examine the hypothesis, one- way ANOVA/Welch test is applied based on the result of homogeneity of variance assumption. The homogeneity assumption is verified by using Levene's test of Equality of Variance. The results are presented below.

Table 8.14

Income wise comparison of Work Life Challenges

Dimensions	Descriptive Statistics of Income wise comparison						Levene's test of Equality of Variance		One- way ANOVA/ Welch test	
	Below 5000	50001-10000	100001-150000	150001-200000	200001-250000	Above 250000	Test statistics	Sig. value	Test Statistics	Sig. value
OC	3.176 (.835)	3.317 (.774)	3.211 (.832)	3.306 (.844)	3.270 (.830)	3.276 (.920)	0.492	.782	0.257	.936
PC	3.172 (.833)	3.412 (.750)	3.080 (.789)	3.238 (.810)	3.177 (.775)	3.236 (.867)	0.719	.610	0.864	.505
CH	3.174 (.805)	3.364 (.716)	3.146 (.775)	3.272 (.784)	3.224 (.728)	3.256 (.822)	1.466	.200	0.494	.781

Source: Primary Data

Parentheses represent standard deviation

Levene's statistics for operational challenges, personal challenges and overall challenges agree with the equality of population variance, so One-way ANOVA is the suitable test statistic. The ANOVA result about income effect on the work life challenges of sanitation workers reveal that there is no effect, the 'p' value for overall challenges and its two dimensions are higher than 0.05, which leads to

the acceptance of H0. Different income level of sanitation workers does not show any difference in their opinion about their work life challenges during calamities.

Section III

8.8 Effect of Challenges on Quality of Work Life

In this section of analysis, the effect of challenges on quality of work life of sanitation workers in Kerala is studied. It includes exposure to occupational hazards, poor working conditions, and social stigma (Sajeeb & Suresh , 2021). Long hours, low wages and inadequate safety measures contribute health issues and work-related stress (Kerala Planning Board, 2019). In this review of literature, the effect of challenges on quality of work life is evaluated using Correlation Analysis. Following hypothesis is formulated and tested

H0: There is no significant relationship between challenges and quality of work life.

H1: There is significant relationship between challenges and quality of work life.

Table 8.15

Relationship between Work life Challenges and Quality of Work Life

Correlations		Operational Challenges	Personal Challenges	Overall Challenges
Working Condition	Pearson Correlation	-.030	.016	-.008
	Sig. (2-tailed)	.569	.768	.877
Compensation	Pearson Correlation	.014	-.040	-.014
	Sig. (2-tailed)	.796	.447	.798
Workload	Pearson Correlation	.018	-.010	.004
	Sig. (2-tailed)	.739	.853	.933
Work Life Balance	Pearson Correlation	-.063	.009	-.029
	Sig. (2-tailed)	.234	.860	.580
Job Security	Pearson Correlation	-.030	-.051	-.043
	Sig. (2-tailed)	.566	.332	.413

Correlations

		Operational Challenges	Personal Challenges	Overall Challenges
Health and safety	Pearson Correlation	.001	.009	.005
	Sig. (2-tailed)	.988	.863	.922
Social Support	Pearson Correlation	.097	.021	.064
	Sig. (2-tailed)	.066	.687	.228
Training & Development	Pearson Correlation	.011	-.008	.002
	Sig. (2-tailed)	.829	.887	.966
Career Growth and Advancement	Pearson Correlation	-.028	-.066	-.050
	Sig. (2-tailed)	.591	.210	.344
Quality of Work Life	Pearson Correlation	-.005	-.030	-.018
	Sig. (2-tailed)	.929	.575	.733

Source: Primary Data

The correlation table presents Pearson Correlation Coefficients that measure the linear relationship between various QWL factors (such as Working Condition, Compensation, Workload, Work Life Balance, Job Security, Health and safety, Social Support, Training & Development, Career Growth, and Quality of Work Life) and three types of challenges; Operational, Personal and Overall Challenges along with their two-tailed significance (p-values). In general, the correlations are very weak, with most coefficients close to zero (e.g., Workload vs. Overall Challenges = 0.004, $p = 0.933$; Working Condition vs. Operational Challenges = -0.030, $p = 0.569$), indicating that there is no substantial linear association between these QWL factors and the challenge categories. None of the p-values are below the conventional 0.05 threshold, meaning none of the correlations are statistically significant, so we cannot reject the null hypothesis of no relationship. The results suggest that the selected QWL factors do not linearly predict or affect the perceived operational, personal, or overall challenges.

8.9 Conclusion

Work Life Challenges faced by Sanitation Workers during calamities were discussed in this chapter. Work life challenges of sanitation workers are grouped in to two categories- operational and personal challenges. In both the category of challenges workers are facing above average level of challenges during different calamities like COVID, Nippa, Flood and such type of natural calamities. Quality of work life factors has no influence on these challenges, so authority should take special strategies to face these challenges.

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Chapter 9

Findings and suggestions

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9.1 Introduction

Sanitation workers are the backbone of waste management system in the urban province of the society. The population density is a serious problem to be addressed in effective waste management program. Sanitation workers are considered to be unsung heroes of urban environment with minimum recognition and support. Sanitation workers play a very crucial role in maintains public health and hygiene. Their daily work ensures cleaning public spaces, collecting waste, clean drainage and septic tanks and maintains public toilets. A better working atmosphere is essential for any kind of workers for working effectively in their area of operation. Poor sanitation and hygiene of the society will limit the development possibilities in the areas like health sector, education sector and all other allied sectors which influence the overall development of urban and rural part of the society.

Quality of work life is a comprehensive concept that involves many elements which helps to create a favourable working environment in any organization. It involves many dimensions of work life like remuneration, job security, working condition, social integration; bring a balance between personal life and official life and improving employee work related happiness. Moreover they face specific challenges like physical hazards, inadequate protective gears and equipment. The intension of this study is to check the present status of quality of work life of sanitation workers, their perception towards quality of work life, their job satisfaction and the major challenges they face during different calamities in Kerala.

9.2. Research problem

Urbanization is one of the growing reality of Kerala and this is one of the major challenges arising from this change is management of urban waste. Government of Kerala formulated different programme for the safe treatment of waste like Haritha Kerala Mission, Suchithwa Mission, Clean Kerala Campaign, Haritha Karma Sena etc. The success of all these programmes are depends on the effective work of employees who are made the policy in to reality. Sanitation workers are the foot soldiers of urban waste management system. They are working

for continuous six hours daily starting from early morning and keep our surrounding clean. As we know cities are a place where the public come from different places for different purposes and a thick population is resides in and around the city, all of them are generating huge waste daily. Removing all these waste in the early morning daily is essential to keep the city attractive to the visitors. The period of calamities like COVID 19, Nippa, flood and other natural calamities create a huge waste, it will be a new challenges to be faced by sanitation workers other than their usual work challenges. This study focus on measuring the quality of work life of sanitation workers in Kerala and how they manage their work life challenges during the period of calamities.

9.3. Objectives of the study

1. To identify various factors that influences the quality of work life of sanitation workers in Kerala.
2. To measure the Perception of Sanitation Workers towards Quality of Work Life.
3. To analyze the job satisfaction of sanitation workers and the influence of QWL on their overall Job Satisfaction.
4. To check the mediating role of Perception in the relationship between Quality of Work Life and Job Satisfaction of sanitation workers.
5. To examine the challenges faced by sanitation workers during calamities and how it affects their QWL.

9.4. Methodological design

Research design of the study is descriptive and analytical in nature which uses both primary and secondary data. Primary data were collected from the sample respondent by using the structured questionnaire to analyze the QWL their perception and satisfaction Primary data were collected from sanitation workers in Kerala which consist of permanent and temporary workers from municipalities and corporations. Secondary data were collected from published works, newspapers,

PhD thesis, government publications like censuses data, economic review published by both central and state governments, report of RBI, reports of ILO, websites of various government, semi governments and private organizations.. A structured questionnaire was used for collecting data, before finalizing the tool a pilot study was conducted and collected data from 125 respondents. There are 7924 sanitation workers in Kerala, 380 sample respondents were collected by adopting multi stage proportionate random sampling method. Confirmatory factor analysis was done on the pilot data, based on the result certain statements which having not enough factor loading were deleted. Appropriate reliability and validity test was done on pilot data. Collected data were analyzed with the help of SPSS and AMOS, various tools like percentage, mean, standard deviation, correlation, one sample t-test, one-way ANOVA or Welch test, Levene's test of equality of variance, Tukey/Tamhane's post hoc test, confirmatory factor analysis and structural equation model were used for analysis.

9.5. Summary of chapters

The report of the study entitled "Quality of work life of sanitation workers in Kerala: an evaluative analysis" has been presented in 9 chapters. The first chapter 'introduction' consists of background of the study, research problem, and significance of the study, objectives, hypothesis, and conceptual model, limitation of study and chapter scheme of the report. The second chapter presents the review of literature related to research work. An overview of the concept of QWL, its evolution, manual scavenging in India and type of sanitation work were discussed in third chapter. Research methodology used in the research is discussed in the fourth chapter. Factors affecting the quality of work life of sanitation workers in Kerala are analyzed by using statistical tools and are presented in the fifth chapter. Chapter six is devoted to analysis of perception of sanitation workers regarding QWL, seventh chapter deals with the analysis of job satisfaction of sanitation workers and eighth chapter cover analysis of challenges faced by sanitation workers during calamities. The ninth and last chapter covers findings, suggestions and suggested topic for further study in the related area.

9.6. Major findings at a glance

Major findings of the study based on data analysis are shown in the following pages.

9.6.1 Demographic profile Socio- economic factors of sanitation workers in Kerala

1. Among the respondents (58.9%) male workers dominate in sanitation jobs in Kerala. Female workers accounts only 41.1%
2. Sanitation work is dominantly carried on by middle aged population 82% of workers are aged between 35 to 55. It clearly indicates that youth do not prefer this job as a means of their lively hood.
3. Majority (77.6%) of workers having educational qualification between 10th standard to 12th standard. Only 2.9% are graduates.
4. Majority of the respondents belongs to the religion Hindu (67.1%) compared to the Muslim and Christians
5. Almost half (47.4%) of the respondents belongs to backward class, 32.4% of respondents are from other backward class, which indicates backward class and other backward class dominates in sanitation work in Kerala. The ministry of social justice and empowerment said in its written reported in Lok Sabha that the majority of sanitation workers in India collectively belongs to SC, ST and OBC groups stands at 92% (Vrinda Tulsian, 2026).
6. Majority (42.4%) of workers are living in rural area, indicating they have to travel a lot to reach the place of wok.
7. Among the respondents (84.7%)who dominate in the area are married women , followed by single 6.8%, widowed 5.8% and divorced with 2.6%
8. Majorities (77.6%) of workers are from nuclear families and only 22.4% are from joint families.

9. Income disparity among the sanitation workers is a common phenomenon to be addressed. Only a simple majority (26.8%) having income between 200001 to 250000 followed by 150001 to 200000 (23.9%). 16.8% of the respondents says that they are getting less than 50000 and only 5.3% of the respondents are getting more than 250000 income.
10. Regarding the place of work of sanitation workers 53.4% are working in corporation and 46.6% are working in municipalities.
11. Majority (77.6%) of the respondents are permanent workers, only 22.4% of the respondents are temporary staffs.
12. In India sanitation job is treated as a hereditry work, but the data collected for the study revealed that such a pattern does not exist now in Kerala, only 4.4% of the respondents have an ancestral background but the majority (95.6%) has no previous experience of these jobs.
13. There is no uniformity in the types of job done by sanitation workers, 85.2% of the respondents says that they are doing other jobs, Sweeping the street (88.2%) is the one of the major job done by of sanitation workers followed by loading garbage in vehicles (74.7%). Buries the dead animals (64.7%) is another major job performed by sanitation workers followed by drainage cleaning (60.3%) and driving (20%) is the least accounted job of sanitation workers.

9.6.2 Quality of work life of sanitation workers

1. The result of factor analysis shows that the most important factor affecting the QWL of sanitation worker is Working Condition followed by Compensation, Work load, Work life balance, Job security, Health and safety, Social support and work place relationship, Training and Development facilities and Career Growth and Advancements are the factors affecting the quality of work life of sanitation workers in Kerala

2. Sanitation workers have favorable working conditions ($\bar{X}=3.882$) in their respective work places. They agree that they have only reasonable hours of work, authority provided them adequate equipment, group cohesion is promoted and they have only a reasonable work load. But in the working environment they face harassment and discrimination ($\bar{X}=3.7421$) from their superiors and also they are working in a hazardous working condition ($\bar{X}=3.6895$)
3. With regard to compensation workers show moderate happiness ($\bar{X}=2.957$), they are not satisfied with the social security mechanism ($\bar{X}= 2.6789$), retirement benefits ($\bar{X}= 2.7816$), grievance and redressal mechanism about the compensation ($\bar{X}=2.8868$). there is a slight difference of opinion with regard to fare pay ($\bar{X} =3.1184$), market rate pay ($\bar{X}=3.0053$) and reimbursement for expenses ($\bar{X} = 3.2711$).
4. The study reveals that the respondents enjoy a reasonable work load and work life balance in their working atmosphere
5. The result with respect to job security shows that the respondents enjoy stability in their job but there is no retention of work of the workers by the authority during calamities.
6. The study depicts that workers are afraid of risk of illness, absence of insurance, timely preventive vaccination and safe and comfortable work place.
7. Social support and workplace relationship ($\bar{X}= 3.659$) dimension of QWL reveals that workers are experiencing a positive and supportive social environment at the work place.
8. The study reflects that the training and development ($\bar{X}= 2.657$) is the least influencing factor of QWL. Absence of adequate job specific training is the major problem specified by the workers.

9. Opportunity for career growth and advancement ($\bar{X}$ = 3.322) dimension shows a moderate level of agreement of mind among sanitation workers. There is no possibility to expand the capabilities of employees through career growth
10. Regarding the overall quality of work life of sanitation workers in Kerala the overall mean value ($\bar{X}$ = 3.223) and standard deviation (SD= 0.489) denote that their quality of work life is moderate.
11. The result of t test on the influence of facets of QWL on the overall QWL of sanitation workers, it is observed that there is a significant association between quality of work life and its factors.

9.6.3 Comparison of demographic factors with quality of work life of sanitation workers

1. Age wise comparison of sanitation workers shows that there is significant difference in the quality of work life among sanitation workers, especially between lower and upper age groups.
2. Gender wise comparison of QWL shows that the quality of work life of sanitation workers is almost same irrespective of their gender.
3. There is a significant difference in the level of QWL of sanitation workers according to their educational qualifications. Graduate workers show higher QWL ($\bar{X}$ =3.468) than the employees having educational qualification between 10th to 12th ($\bar{X}$ =3.248) and between less than 10 ($\bar{X}$ = 3.086). Higher educated employees show better QWL than lower educated employees.
4. The overall result of social class wise comparison highlights a consistent pattern. The forward class shows a higher level of QWL in almost all dimensions followed by other backward class and backward class at the end.

5. Family type of sanitation workers has a limited influence on specific aspects, like work life balance, but it does not significantly affect the overall QWL of sanitation workers.
6. Permanent and temporary workers show difference in their attitude towards QWL in the dimensions of compensation, job security, health & safety, training & development, career growth and overall QWL while no difference shown towards the dimensions of working condition, work load, work life balance and social support. Permanent workers experienced a higher level of QWL in most factors especially job security, career growth and overall QWL compared to temporary workers.
7. Based on the place of residence urban sanitation workers feel a better QWL than the rural and semi urban workers.
8. The respondents posted in municipalities experienced a better QWL compared to workers in corporations.
9. The widowed workers show a slightly better QWL compared to single, married and divorced workers.
10. Income wise comparison of QWL of the respondents shows that there is a significant variation across different income groups. Sanitation workers in the middle income group (between 1lakh to 2 lakh) experienced relatively better QWL compared to both lower and higher income groups.

9.6.4 Perception of sanitation workers toward QWL

1. The result of factor analysis shows that Fairness and Equity , Work Motivations and Expectations and Beliefs are identified as the factors which determine the perception of sanitation workers regarding their QWL
2. Among the three variables work motivation has the highest level of influence on the perception of sanitation workers.

3. Regarding the fairness and equity dimension of perception it is observed that sanitation workers shows less agreement of mind about fair recognition for contributions, fair compensation and working hours, supervisors are unbiased, equitable training and developments and equitable distribution of equipment.
4. The result indicates that workers are highly self-motivated, getting sufficient respect in their work, they are passionate about public health and workers having opportunity for socialization.
5. The perception of the respondents towards expectation and belief dimensions workers feel that their job security, health and safety, training and developments, opportunity for career growth, work life balance and work load are not as per their expectation and beliefs.
6. Structural model indicates that perception of the respondents have significant impact on the quality of work life of the sanitation workers.

9.6.5 Demographic factors and Perception of sanitation workers towards QWL

1. Perception of sanitation workers regarding QWL is different among different age groups. The workers of above 55 age group show significant difference in the perception with age group of 35 to 45.
2. There is no gender wise difference in the perception of sanitation workers regarding quality of work life
3. Forward class, other backward class and backward class do not show any difference in the perception of sanitation workers regarding their QWL.
4. The respondents from nuclear families and joint families have no influence on framing their perception about QWL.
5. The result of overall perception ($p=0.182$) indicates that there is no difference in the overall perception of sanitation workers regarding their different educational levels. But In the dimension of expectation & belief

significant differences were observed between the educational qualifications of 10th to 12th standard with graduates.

6. Permanent employees show a slightly better perception towards QWL than temporary workers.
7. Sanitation workers from different living condition do not share the same level of perception regarding QWL, workers from semi-urban area consistently reported lower scores compared to those from urban and rural regions.
8. Municipal workers show some better perception than sanitation workers in corporation.
9. Married employees tend to report lower levels of perception compared to single and widowed employees, indicating that marital responsibilities or work-life demands may influence their experience of their QWL.
10. Perception varies across income groups, with higher income generally associated with more positive work perceptions; though some variations exist across dimensions. Higher income group obtain higher perception score in almost all dimensions, which indicates that there is a positive link between financial status and employees' perception of QWL.

9.6.6 Job satisfaction of sanitation workers.

1. The factor analysis shows that job attributes and organizational dynamics were identified as the factors determining the job satisfaction of sanitation workers in Kerala.
2. With regard to job satisfaction the respondents show a high level of satisfaction towards organizational dynamics and an average level of job satisfaction towards job attributes.

3. The workers are not highly satisfied in the areas of possibility for promotion, job enlargement, job security, motivation and compensation that they received.
4. Organizational dynamics dimension shows that workers are satisfied, but they expect a betterment in the areas like work life balance, recognition of employees, participative decision making process and facility to express and share concerns of workers.
5. The result of the structural model shows that QWL factors have significant influence on the Job Satisfaction of the sanitation workers.
6. On testing the mediating role of perception in between QWL and job satisfaction by using structural equation model indicates that perception partially mediates in the relationship between QWL and Job Satisfaction of Sanitation Workers in Kerala.

9.6.7 Demographic factors and job satisfaction.

1. Age wise comparison of job satisfaction of sanitation workers shows that there is no significant difference in the satisfaction of workers according to their age difference
2. Male workers show a higher job satisfaction ($\bar{X} = 3.126$) compared to females ($\bar{X} = 2.990$), suggesting that men tend to be more satisfied with their jobs.
3. On testing the effect of demographic variables like social class, family type, educational level, employment status, living place of the workers and working place of the workers on job satisfaction of sanitation workers, it is revealed that these variables have no effect on job satisfaction
4. Marital status plays an important role in workers job satisfaction. The divorced workers have the highest overall job satisfaction followed by married and single workers.

5. Mid-income earners exhibit relatively better job satisfaction, while both lower and higher income groups show moderate or reduced satisfaction.

9.6.8 Work life challenges during calamities.

1. Based on the result of factor analysis work life challenges faced by sanitation workers are grouped in to two groups- operational and personal challenges
2. In operational challenges ($\bar{X} = 3.2590$), personal challenges ($\bar{X} = 3.2029$) and overall challenges ($\bar{X} = 3.2310$) workers are facing above average level of challenges during the period of calamities.
3. The major challenges faced by sanitation workers during calamities in dealing with hazardous materials are the absence of proper training in the use of materials and followed by major threats and financial constraints.
4. Factors affecting the Quality of work life of sanitation workers do not linearly predict or affect the perceived operational, personal and overall work life challenges during calamities.

9.6.9 Demographic factors and work life challenges.

1. The demographic factors including age, gender, social class, family type of employees, educational qualification of employees, employment status, living place of employees, marital status and income of employees have no influence on the work life challenges of sanitation workers during calamities.
2. During the calamity period workers in corporation are facing more challenges than the workers from municipalities.

9.6.10 General findings

The above listed findings were created by the researcher based on the analysis of primary data collected through the questionnaire. Through the interaction with sanitation workers during the period of data collection, they disclose some of the threats in their work life, they are listed below

1. The schemes like the Amruth Mithram Project of the Central Government, the Azhak Scheme of Kozhikode Corporation and so on which are implemented for a certain period were completely withdrawn after the completion of the scheme. The sanitation workers are of the opinion that it adversely affected as there is a chance of losing their jobs. Due to the implementation of such scheme many corporations and municipalities appointed workers under this scheme in place of sanitation workers.
2. With regard to work performed there is no uniformity of work among the sanitation workers in different municipalities and corporations.
3. Absence of a special rule is another problem raised by these workers, permanent workers are treated as like of a government employee but many provisions of Kerala Service Rule is not applicable to them

9.7 Conclusion

Sanitation workers are an important segment of the work force; they are an indispensable part of the public health wing of Kerala. They are working hard to maintain health and hygiene of the urban population and are responsible for cleaning and maintaining our society. They collect waste from households and commercial establishments; carry it towards waste treatment centres. The sizes of the sanitation force are still unknown, most invisible and neglected in the society and are the most vulnerable workers. This comprehensive study on the quality of work life of sanitation workers in Kerala reveals the QWL of sanitation workers are influenced by nine factors, among them working condition and social support are the major factors. The other prominent factors are compensation, work load, work life balance, job security, health & safety, training & development and career growth & advancements. The evaluative analysis underscores the need for policy reforms prioritizing workers wellbeing, robust implementation of existing schemes and stake holder's engagements. Key suggestion includes standardised wage structure, enhanced safety protocols and regular health check-ups. The study covers the challenges faced by sanitation workers during different calamities like covid, Nippha, Flood and so on. The study highlighted the need for improved working condition, betterment in wage system and better social security system to protect the interest of sanitation workers in Kerala. The issue of sanitation workers are excluded in documents, legislations as well as policy formulation;

hence the authority should take necessary steps to improve the QWL of sanitation workers. The research contributes to the discourse on labour right and social justice, emphasising the imperative to prioritise marginalized workers dignity and wellbeing. This study also is helpful to develop and implement those policies to support and assist the vulnerable sanitation employees who play an important role in the economy and development of the city.

9.8 Suggestions

1. Majority of sanitation employees are middle aged, the main reason is the present selection criteria of workers. They are selected through employment exchanges; employment exchanges are generally following the policy of considering higher aged persons first. Such a policy has to be modified.
2. The majority of sanitation workers are less qualified in order to overcome the authority may implement adult educational programmes and basic digital literacy training to workers. Make use of modern technology for sanitation job that will attract young and educated persons towards this job, it will also reduce occupational diseases.
3. Socio economic upliftment of sanitation workers is an inevitable part, authority should design targeted welfare and support programmes.
4. The study reveals that workers work with low wages, health issues and work place accidents are common, hence authority should provide access to health support, wellness programmes and personal protective equipment
5. Income disparity among the workers is another problem to be addressed by authorities, for that it is suggested that performance based and risk allowance incentives should be implemented, especially for workers engaged in hazardous and high-risk duties.
6. As workers exhibit a moderate level of satisfaction towards compensation, work load, work life balance, job security and health & safety dimensions of QWL, it is suggested that municipal authorities should strengthen existing

- policies related to compensation, workload management, work–life balance, job security, and health and safety to enhance overall quality of work life.
7. Authority should provide opportunity to existing workers for promotion to higher grade based on their qualification. Career growth and advancements in sanitation job must be provided once the worker is appointed.
 8. As there exist social and structural disparity among sanitation workers, authority should design targeted interventions aimed at improving the QWL of backward and other backward class workers.
 9. The authority ought to endeavor to expedite regularization of temporary workers there by ensuring job security and commitment.
 10. Authorities should prioritize improving the Quality of Work Life of workers in Municipal Corporation, the workers from semi-urban and urban area. They are feeling relatively lower QWL
 11. SEM result shows that factors of quality of work life have a significant impact on workers perception towards their QWL. Sanitation workers show a moderate positive perception, so steps has to be taken to improve in the factors of QWL that will automatically improve the positive perception of workers.
 12. Workers exhibit below-average satisfaction with job attributes but shows above average satisfaction towards organizational dynamics. Authority must improve job attributes and sustaining positive attitude.
 13. Since female workers exhibit comparatively lower job satisfaction than male workers, targeted interventions should be introduced to address the specific challenges faced by women at the workplace.
 14. Since married and single workers exhibit comparatively lower job satisfaction than divorced workers, authority should introduce supportive measures such as flexible working hours, family-friendly policies, leave provisions, and stress-management programs for equal participation.

Providing counselling services and work–life balance initiatives may help address personal pressures and enhance overall job satisfaction across all marital groups.

15. As there exists income disparity among the higher income group and lower income group it is suggested that along with addressing their work pressure and expectations, it is advisable to improve and maintain balance across the income level.
16. As the workers experienced above average level of work life challenges during calamities, authority should boost disaster precautions and supportive services like safety equipment, clear work protocol, timely supportive services and disaster response mechanisms like proper training, proper coordination and provide proper welfare measures
17. Authority should integrate disaster management planning with sanitation services to address the unique challenges that arise during calamities. As the factors influencing the QWL of sanitation workers do not directly predict the work life challenges during calamities, separated targeted strategies should be adopted for disaster situations.
18. The workers in corporations face greater challenges during calamity compared to municipal workers, special attention should be given to strengthening support mechanism in corporation areas. Authorities should improve human resource allocation, provide adequate personal protective equipment, ensure better coordination, and offer timely welfare and emergency support to corporation workers during calamities.
19. As scheme workers hinder the sanitation workers job opportunities, the authority should not promote such type of workers.
20. Authority should take necessary steps to implement special rule for sanitation workers which should clearly specify the rights and responsibilities of sanitation workers. Treat these workers as a government employees like others and apply all provisions of KSR to them.

9.9 Scope for further research

This study give some essential contributions and suggestions, however there are many topics which remain unexplored. Some of them are listed below

1. A study on un organized sanitation workers especially contract workers can be attempted
2. A study on septic tank and manhole cleaners can be attempted
3. Effectiveness of rehabilitation schemes of manual scavengers in Kerala can be attempted
4. Role of scheme workers like Amruth Mithram Project of central government, special schemes of respective municipality and corporations in urban solid waste management can be attempted
5. Attitude of society towards sanitation workers can be attempted
6. Challenges and experience of women sanitation workers can be attempted
7. Study on use of modern technology and equipment in management of waste disposal

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APPENDIX

Quality of Work Life of Sanitation Workers in Kerala: An Evaluative Analysis

Demographic questions

1. Name:
2. Gender
 - (a) Male
 - (b) Female
 - (c) Transgender
3. Age
 - (a) Under 25
 - (b) 26 to 35
 - (c) 36-45
 - (d) 46-55
 - (e) Above 55
4. Education
 - (a) Less than 10 th standard
 - (b) 10 th to 12 th standard
 - (c) Bachelor degree
 - (d) Master degree
5. Religion
 - (a) Hindu
 - (b) Muslim
 - (c) Christine
 - (d) Others

6. Social class
 - (a) Forward class
 - (b) Other backward class
 - (c) Back ward class
7. Place of residence
 - (a) Urban
 - (b) Semi Urban
 - (c) Rural
8. Marital status
 - (a) Single
 - (b) Married
 - (c) Divorced
 - (d) Widowed
9. Family Type
 - (a) Nuclear
 - (b) Joint Family
10. Family income (annual)
 - (a) Below 100000
 - (b) 100001- 200000
 - (c) 200001 to 300000
 - (d) 300001 to 400000
 - (e) 400001 to 500000
 - (f) Above 500000
11. You are working at
 - (a) Corporation
 - (b) Municipality

-
12. Employment status
- (a) Permanent employee
 - (b) Temporary employee
13. What are the jobs you are doing
- (a) Sweeping the street
 - (b) Loading of garbage in vehicles
 - (c) Driving job
 - (d) Drainage cleaning
 - (e) Bury the dead animals.
 - (f) Other jobs
14. Any of your ancestors do this job
- (a) Yes
 - (b) No

Indicate your degree of agreement towards the following statements

1. Working condition

SL No	Statements	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	I have reasonable hours of work					
2	My environment are overcrowded and dirty					
3	Adequate and good equipment's are provided to me					
4	Easiness in working as group					
5	Preference to work collectively than individually					
6	Working environment is					

SL No	Statements	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	free from harassment, discrimination and other form of mistreatment					
7	The work load assigned to me are manageable and reasonable					

2. Compensation

SL No	Statements	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	The compensation is adequate to meet my requirements					
2	The base salary is competitive compared to the similar position					
3	The benefit packages such as health insurance, retirement plans and paid time off, meet their needs and expectations					
4	Opportunity for reimbursement for job related expenses incurred by the workers eg- uniforms, safety equipment's					
5	Have access for addressing any concern or dispute related to the compensation					
6	I am happy with the pension and other retirement benefits					

3.

4. Work load

SL No	Statements	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	The task assigned to each workers are reasonable after considering their resources and time constrains					
2	Adequate rest and breaks are provided during their shift					
3	Present workload affect their ability to provide high quality service to the society					

5. Work life balance

SL No	Statements	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	My personal needs have enough consideration in my work place					
2	Work schedule and other requirements are not taking too much of my leisure time and family life					
3	Authority promote use of technology for balancing family work and life					
4	I am getting alternative and flexible work schedule					

6. Job security

SL No	Statements	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	Workers are confident about the stability of their employment					

SL No	Statements	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
2	The authority provide adequate support and resources to ensure job security					
3	Workers believe that their skills and contributions are valued by the authority					
4	Workers have a sense of job security that allows them to focus on their task effectively					
5	The authority demonstrate a commitment to retain its workers even during the challenging time					

7. Health and safety

SL No	Statements	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	My physical working conditions ensure safety and comfort					
2	I have minimum risk of illness and occupational diseases					
3	My working condition ensure safety and comfort					
4	Necessary protective gear such as gloves, masks and goggles to ensure workers safety					
5	My working conditions have chance of illness and injury					
6	The authority give me proper and timely preventive vaccinations					

SL No	Statements	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
7	Insurance facilities are provided by the authority					

8. Social support and work place relationship

SL No	Statements	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	My job boost my social status					
2	My job is a socially responsible one					
3	My work life matches the social life I led					
4	Working environment provide opportunity for creating personal identity and self esteem					
5	Working environment create a sense of community and inter personal openness					
6	Freedom from prejudice based on gender, race, caste and religion					
7	Job provide me dignity and growth					
8	Members interactions based on ideas and feelings					

9. Training and development facilities

SL No	Statements	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	Workers are getting adequate training to perform their duties					
2	Training programmes are tailored to their specific					

	job requirements and challenges					
3	Workers have opportunity to participate in workshops, seminars or conferences relevant to their field					
4	The authority encourages a culture of continuous learning and improvement among the workers					
5	Workers perceive that these programmes enhance their job performance and career growth					

10. Career growth and advancements

SL No	Statements	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	I have opportunity to expand my capabilities					
2	I am responsible for the work that I done					
3	There is an open channel for communication					
4	My job has a component of growth and development					
5	Working environment motivate me to realise my potentials					

10. Fairness and equity

SL No	Statements	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	The work load distribution among the workers in my team is					

	fare					
2	There is moral standards and ethics at work place					
3	Supervisors treat all workers fairly and without bias					
4	Recognition and appreciation for contribution are distributed fairly among the workers					
5	Allocation of equipment and tools among the workers is equitable					
6	Workers from different background are treated with equal respect and dignity in the work place					
7	Workers have equal access to training and development opportunity					
8	There is fairness in the matter of compensation and working hours					

11. Work motivation

SL No	Statements	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	I am motivated to perform duty as a sanitation worker					
2	I am getting enough respect in my work place					
3	I feel my job has an importance in the society					
4	I am passionate about the impact of my work on public health and safety					
5	I am getting enough opportunity for socialisation in my job					

12. Expectations and beliefs.

SL No	Statements	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	The working environment provided to me are in accordance with my expectation					
2	Remuneration provided to me are in accordance with my expectation					
3	Work load of my current position are in accordance with my expectation					
4	My perception about work life balance and actual work life balance are matching					
5	I believe my job is secure					
6	I feel that authority give enough consideration for my health and safety					
7	I believe that I am getting enough social support and having good work place relationship					
8	Training and development facilities provided to me are in accordance with my expectation					
9	I believe that I have enough opportunity for career growth and advancements					

13. Job satisfaction

Indicate the level of satisfaction towards the statement given below

SL No	Statements	Highly dissatisfied	dissatisfied	Neither satisfied nor dissatisfied	satisfied	Highly satisfied
1	Working conditions					
2	compensation					
3	Motivation obtained					
4	Job security					
5	Job rotation					
6	Job enlargements					
7	Possibility for promotion					
8	Work life balance					
9	Relations with co workers					
10	Supportive work culture					
11	Quality of supervision					
12	Recognition					
13	Challenges offered by the job					
14	Involvement in decision making					
15	Facility to express and share concerns of workers					
16	Approaches of trade unions					

1. Have you ever been work as a sanitation worker during calamities?

YES/NO

2. If yes please specify type(s) of calamities

- a. Floods
- b. Earthquakes
- c. Nippa
- d. Covid- 19
- e. Others (please specify)

3. Put a tick mark for your state of agreement for the following statements

SL No	Statements	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	In your experience, lack of adequate protective gear and equipment significantly hinders sanitation work during calamities					
2	During the calamities I have limited access to affected area to carry my work					
3	Disrupted transportation network during calamities					
4	Affecting timely completion of task					
5	Increased work load due to the heavy demand for sanitation during the calamities put a strain on me, making it difficult to maintain quality standards.					
6	Dealing with hazardous materials and bio hazardous poses considerable health issue to the workers					
7	Communication breakdown and coordination issues with					

SL No	Statements	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	other relief agencies effects on effectiveness of sanitation during calamities					
8	Lack of proper sanitation infrastructure in disaster, making it difficult to maintain hygiene standard					
9	Emotional stress resulting from witnessing the aftermath of calamities can significantly impact the mental wellbeing of workers, affecting their ability to perform their duties effectively.					
10	Financial constraints at the time of calamities restricts the implementation of necessary measures and exacerbate existing challenges					
11	Absence of training and preparedness for handling sanitation during calamities leave workers ill					
12	Discrimination and stigmatization particularly during calamities add an additional layer of challenges to their already demanding work environment					

Your suggestions if any

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