EVALUATION OF PROBLEMS FACED BY WOMEN CONSTRUCTION WORKERS DURING COVID-19

A

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of

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STUDENT'S DECLARATION

I hereby declare that the work presented in the Project report entitled **"Evaluation of Problems Faced by Women Construction Workers During COVID-19"** was submitted for partial fulfillment of the requirements for the degree of Master of Technology in Civil Engineering with specialization in Construction Management at the **Jaypee University of Information Technology, Waknaghat.** It is an authentic record of my work carried out under the supervision of **Dr. Saurabh Rawat.** This work has not been submitted elsewhere for the reward of any other degree/diploma. I am fully responsible for the contents of my project report.

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CERTIFICATE

This is to certify that the work which is being presented in the thesis titled **"Evaluation of Problems Faced by Women Construction Workers During COVID-19"** in partial fulfillment of the requirements for the award of the degree of Master of Technology in Civil Engineering with specialization in Construction Management submitted to the Department of Civil Engineering, **Jaypee University of Information Technology, Waknaghat** is an authentic record of work carried out by **Vansheika, 202601** during a period from July 2021 to May 2022 under the supervision of **Dr. Saurabh Rawat,** Department of Civil Engineering, Jaypee University of Information Technology, Waknaghat, H.P, India.

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ABSTRACT

The unorganized construction industry came to a grinding halt because of multiple lockdowns during the COVID-19 pandemic. With no work opportunities, construction workers were forced to undergo reverse migration and faced a loss of livelihood. The pandemic has heightened the already existing gendered problems of women construction workers. This study aims to identify the magnitude of various problems that women construction workers have encountered during the pandemic and find the significant relationship between these problems and the factors like reverse migration, marital status, and daily wage. After a thorough literature review, a self-prepared questionnaire survey of 130 women construction workers was conducted followed by semi-structured interviews. Furthermore, a survey of 40 daily wage-earning men construction workers was conducted to understand the gender biases during COVID-19. The population being infinite, non–probability convenient sampling technique was used. SPSS software was used for comprehensive data analysis. The magnitude of personal, social, occupational, economic, health, safety, gender biases, COVID-19, and family problems was researched. The study found that there is a Highly Significant (P<0.01) relationship between various problems that women construction workers faced during the COVID-19 pandemic and the factors such as marital status, the average daily wage, and interstate reverse migration as discussed in this paper.

Keywords COVID-19 Pandemic; Unorganized Sector; Construction; Social security; Women Construction Workers; Problems and Challenges

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CHAPTER 1

INTRODUCTION

1.1 General

Earth has a prolonged past of exposure to health catastrophes and various pandemics integrated with economic predicaments; and these are typically the consequence of unparalleled adversity, which has required individuals to compromise on their present lives. Due to the persistence of COVID-19, WHO declared a pandemic on March 11, 2020, for the COVID-19 outbreak (Cucinotta and Vanelli, 2020). COVID-19 has become a pandemic affecting all areas of people's lives. The COVID-19 prompted lockdowns in 4 segments (1st Phase was from 25 March 2020 to 4 April 2020, 2nd Phase was from 15 April 2020 to 3 May 2020, 3rd Phase was from 4 May 2020 to 17 May 2020, and Phase 4th was from 18 May 2020 to 31 May 2020) and these simultaneous lockdowns overwhelmed unorganized sector workers. Unskilled and semi-skilled migrant workers were hit hardest when the lockdown was announced in March 2020 as a measure to contain the exponential progression of the COVID-19 pandemic in India (Dandekar and Ghai, 2020). The construction industry is considered the backbone of the developing countries, which improves the country's infrastructure and gives a boost to its economy by providing jobs to millions of people. Construction became one of the most affected sectors. It is also one of the key sectors for Indian immigrants to find work throughout the pandemic. The quandary of migrant construction workers in India throughout the lockdown has exposed economic and social weakness. (Ranjan, 2021). Millions of unorganized female migrant workers had been left without food and shelter. The COVID-19 Pandemic (Global Pandemic) caused cross-station movement of construction workers, resulting in loss of livelihoods.

The thesis is dedicated to getting an insight into the magnitude of problems these women construction workers faced concerning interstate reverse migration, gender biases, and marital status. In the study, an efficient attempt is made to understand the factors that affected the lives of women construction workers during COVID-19. The study is conducted mainly on the migrant women construction workers in Himachal Pradesh. A questionnaire survey followed by semi-structured interviews was used to understand the problems. The qualitative and quantitative

analysis of the survey helped in finding out the critical problems and their magnitude. The remedies on how to deal with those problems are also discussed so that this study can help in proper project management as women workers have a very promising potential to become a valuable asset to the future of the construction industry.

1.2 Problem Statement

Construction works came to a grinding halt as the nation was put under lockdown in March 2020. While a few projects were running to meet the high demands of spaces for medical needs during the lockdown, there was a complete holdup of all other construction work in the country(Gamil and Alhagar, 2020). The COVID-19 lockdowns and successive actions to limit its spread mounted serious societal, financial, and physical challenges for migrant construction workers in numerous states. Migrant construction workers, and women, are vulnerable and have to face many disadvantages of being underprivileged. Women working on a construction site face a number of occupational hazards caused by men's work-based culture. Strength has been promoted as an important commodity as well as women with limited skills to manage occupational hazards and maintain focus on work (Michelle, 2021). Female workers lack the control of monetary assets even though they earn. This is because of the male-controlled social system, which results in more terrible consequences.

Female construction laborers face socio-financial disparities, dealing with mistreatment in public and in a nonpublic sphere, alongside sexual exploitation, daily wage-earning female construction laborers every so often become a target of sexual abuse by their bosses along with the exploitation and mistreatment by their spouses inside the personal domain (Kumar, 2013). Alongside the overall routine of unpaid work inside the household, Female laborers are discriminated against in the place of work in addition they are not given equal or just wages. Women in the informal sector need social security that covers vacation, wages, working conditions, pensions, housing, childcare, medical and maternity benefits, safety, and health at work (Patel and Tripathy, 2021). There are no studies conducted in Himachal Pradesh that focus on the difficulties faced by female construction workers during the COVID-19 pandemic. The present study focuses on identifying the most significant problems and their correlations with the factors like marital status, interstate reverse migration, daily wage, and the existing pay gap. In this milieu,

the objective of this study was to examine the effect of the COVID-19 pandemic on female construction workers in the construction industry in Himachal Pradesh.

1.3 Purpose and Significance

Disparate the organized sector, there are few laws or programs for the informal sector. Outside of the agricultural sector, the only laws available to non-regular or unorganized/ informal workers in general are provisions of the Social Security Act, which proposes various schemes for maternity, family benefits, and health policies for non-regular workers. worker. Several other government initiatives failed to provide women with better working conditions and didn't even emphasize improving conditions for their children.

Lakhs of migrant women have been building modern India away from home, living in huts made by them, with little to no access to safe drinking water, with no quality education for their children or themselves, and they have no hope for healthcare or they suffer not having job security when they are not able to work. Daily wage-earning women construction workers build the urban and rural areas, but their work hardly ever adds up to the national statistics. Policies formed for their welfare and security are hardly ever implemented and more disheartening is construction workers' lack of awareness. Construction workers are getting displaced from their villages and are at risk of being kicked out of the construction industry, which has managed to save themselves and their families from hunger and despair. There is no direct communication of women construction workers with their employers and this sometimes leads to unheard complaints. Without regular employers, these workers struggle to make a living on the meager assets and skills they own, these workers include contingent workers, contract workers, migrant workers, home workers, and the self-employed.

The COVID-19 crisis has exacerbated many of the existing challenges faced by the migrant community, which have always plagued them at various stages of interstate reverse migration (Khan and Arokkiaraj, 2021). Construction workers were severely affected as project developers significantly reduced the number of on-site workers, while women workers were the worst affected as they were the first ones to get laid off due to the gendered division of labor in the sector. All the daily wage-earning women construction workers working in the national capital lost their work and income as a result of the 5 lockdowns and 25% of them also faced a denial of wages for the

work done before the lockdown (Datta, 2020). There is a substantial connection between the marital status of women construction workers and the various problems like family problems, occupational problems, and personal problems (Chitra, 2015). For informal daily wage-earning women employed in the unorganized construction sector, life in the pandemic has been vulnerable, underpaid, and overworked. During regular and overtime work, women construction workers are abused and prejudiced by the payment of salaries and other benefits, the allocation of jobs, and employment terms.

It is necessary to find out the significance of the difficulties faced by female construction laborers during the pandemic. There is a pressing need to form policies and to improve the life quality of these workers, who continue to live below the poverty line. And this will be possible if more such studies are conducted on the lives of women construction workers. This inclined the researcher to investigate daily wage-earning women construction worker working in the construction sector. Consequently, the researcher studied the challenges faced by women construction laborers in the areas of occupation, education, social, family, personal, and gender aspects, and the COVID-19 impacts. The significance of this study can be analyzed by the fact that by understanding and adopting the recommendations given by this study, the organization and companies working in the construction industry and the Govt. will become more aware of the conditions of women workers and hopefully work forward to improve their economic status in the society.

1.4 Definitions

1.4.1 Unorganized Labour

The term unorganized labor is defined under the Unorganized Workers Social Security Act, 2008, as a home-based worker, self-employed worker, or a wage worker in the unorganized sector and includes a worker in the organized sector who has not been covered in any of the following acts mentioned in Schedule-II of the Act, viz. Employees' Compensation Act, 1923 (3 of 1923), Industrial Disputes Act, 1947 (14 of 1947), Employees' State Insurance Act, 1948 (34 of 1948), Employees' Provident Fund and miscellaneous provisions The Payment of Gratuity Act, 1952 (19 of 1952), the Maternity Benefit Act, 1961 (53 of 1961) and the Payment of Gratuity Act, 1972 (39 of 1972).

1.4.2   Unorganized sector

National Commission for Enterprises in the Unorganized Sector, in their Report on Conditions of Work and Promotion of Livelihoods in the Unorganized Sector, defined the Unorganized sector as consisting of all unincorporated private enterprises owned by individuals or households engaged in the sale or production of goods and services operated on a proprietary or partnership basis and with less than ten total workers.

1.5 Women Construction workers: Lives in the construction Industry

Women construction workers' status in the current situation is unequal which puts their livelihood at risk, widening the gap between a large number of unskilled and highly skilled workers. The unorganized economic sector remains the most susceptible area because there is no direct control system and repeatedly evades rules for employees of the organized sector. The unorganized sector grew quickly during the growth period of industries and services, which led to greater segregation of occupations and products. The sector is made up of financial units that produce legitimate products and services, but various maneuvers remain unaccounted for and are outside the scope of financial laws, labor laws, healthcare laws, and tax laws (Agarwala, 2007). The construction workforce is developing in numerous optimistic ways, particularly as it vigorously embraces diversity and technology. Construction workforces are the pillar of the economy as these laborers build the necessary infrastructure for industrial development. In a globalized economy, it is they who are creating new economic zones, Information Technology cities, call centers, and mega-malls that are creating new forms of wealth today. It is the construction laborers who are restlessly laying the cables for the speedily growing countrywide telecommunications network. Nevertheless, these construction workers, who form the basis of the novel economy, themselves live in the fabric of a stint, in unskilled, low-wage, unsafe working situations, bound by worst work relationships, often factually in oppression and get trapped in debts. About a third of construction workers like these are female laborers and children.

The construction sector is one of the most male-governed trades in the world. Recruitment biases, industry culture where active conversations around harassment are not paid attention to, further even details such as tools and safety wear are not made keeping female construction

workers in mind, all these reasons perform a stern part in why more female construction workers aren't seeing being a construction worker as a safe occupation. But if it takes a community to make a building of value, it will require an all-out effort from people, businesses, non-profits, schools, and the governments to better stabilize the workforce. While demand for construction has risen over the COVID-19 pandemic, the number of workers employed has been stagnant. Gender expectations, negative perceptions, and lack of female mentors often keep women from pursuing a career in construction. Despite these barriers, the number of women working in construction has increased over the years. There is a demand for more women construction workers working in construction.

Women construction workers are involved in nearly all of the work associated with the construction procedure from bases such as foundation work to bricklaying and all the other works. They help remove debris from the ground once excavated, carry water, sand, cement mixture, etc. to lay the foundation and concrete, and carry the necessary stones, bricks, and gears to the location. In construction, women construction workers carry out most of the hard and unskilled work in industries such as making bricks, mining, assembling building materials, stones, bricks, cement, etc. Contractors usually treat them as meager helpers, pay them a smaller amount than their male counterparts, and wage discernment never stops. The difference in the exploitation of construction laborers is more distinct for females than for males. Every time there is an increase in labor demand in the construction sector, it is often mentioned that the rate of growth in the employment rate of female labor is much higher than that of men. And, on every occasion there is a decrease in the number of workers, this decrease is more severe for working women than for men. Female construction workers form a reserve force to help with the construction industry, and they seem to be the first to be fired when work is reduced. The situation was similar with multiple closures during the COVID-19 period.

The love of this study arises from the yearning to understand the plight of daily wage-earning women construction workers who are at risk of informal economics. The construction industry and its gender bias are a very common phenomenon and require further research. This study examines the gender biases, working situations, and financial disparities female construction laborers faced during the COVID-19 pandemic. The research was needed, and it helped to find many different stories and ideas on this topic.

1.6 Research Structure

This research study is divided into five chapters and an appendix. The short description of each chapter and appendix is given here.

Chapter 1 Introduction: This chapter provides the knowledge about the topic, discusses the problem, provides the purpose and scope of this study, and defines the Unorganized or informal sector, informal labor, and women construction workers and their significance in the construction industry.

Chapter 2 Literature Review: This chapter can be considered the backbone of this study. It provides the knowledge gathered by past researchers on the topic of women construction workers and the problems faced by them in the construction industry published in different reputed journals papers, books, and text articles. From the study of these research articles, several different factors that affect women construction workers' lives are taken into account for further analyses and understanding of different problems faced by women construction workers during a pandemic.

Chapter 3 Research Methodology: A discussion of the methodology used for this research study

is enlisted in this chapter. The selection of factors for this study, formation of the questionnaire survey form, survey data collection, and the methodology used in survey analyses is thoroughly explained in this chapter.

Chapter 4 Results and Discussions: From the analyses of the survey conducted, all the results of different factors were represented in tabular form in their respective category. The critical problems that women construction workers faced during COVID-19 are also highlighted.

Chapter 5 Recommendations and Conclusions: Based on the hypothesis critical problems are identified and different recommendations are given for all the severe factors. This chapter also concludes this entire study and gives suggestions to improve the status of women construction workers.

CHAPTER 2

LITERATURE REVIEW

2.1 General

This chapter comprises the review and critical analysis of the research papers and articles connected to the effects of the pandemic on the female labor force working in the construction industry. The author has reviewed the plight of women laborers in the construction industry long before the COVID-19 pandemic and during the pandemic through different research papers written in a decade.

2.2 Review of Literature

According to an International Labor Organization (ILO 2020) report, around 400 million unorganized sector employees in India are in peril of extreme poverty due to the pandemic. The report also noted that women lost the most jobs because most jobs women do are considered unseen and these women are more probable to work in the unorganized labor system. Furthermore, the large and broadening gender gaps in labor force participation, jobs, and incomes that existed before the closure widened in the post-closure or post lockdown period. In addition, Nation has noted an unsatisfactory gender division in domestic work, and according to the first and only The National Time Use Survey (TUS) (1998-99), women spend approximately 4.47 hours a week in unpaid care work (i.e., caring for the children, caring for the elderly, the sick, and the disabled), while men spend 0.88 hours a week. With the gender distribution of unpaid care work being disproportionate, the global COVID-19 impact could exacerbate the scenario by increasing the burden of females' housework, inappropriate layoffs, and unemployment.

As the effects of the Covid-19 epidemic continue to be felt, the global gender gap has seen an unfortunate growth from 99.5 years to 135.6 years in one generation. (Global Gender Gap Report, 2021). Indian Government data estimates that the sector employs 57 million workers, a total of 50 million men and 7 million women. 10 times more men than women are employed. The demand for women is limited due to gendered skill gaps and societal norms. More than INR 380 million (equivalent to 62%) of cess lies unutilized by the Building & Other Construction Workers

(BOCW) Board (Jha, 2021). Official records state that 30% of workers are still unregistered under the Act, and several others remain uncounted. Only half (30 million workers) of those registered, have updated profiles required to avail of benefits (Economic Survey, 2019-2020). According to the 2018-2019 Periodic Labor Force Survey (PLFS), the construction sector employs 83% of non-regular or casual workers and 11% of self-employed workers.

Construction was one of the sectors hardest hit during the pandemic and is also one of the key sectors in which migrant workers in India are looking for work. The plight of migrant workers in India during the lockdown has revealed economic and social weakness (Ranjan, 2021). The number of construction workers in the country exceeds 74 million (NSSU, 2016-2017). Migrant workers make up 35.4% of all the construction labor force in the country's city areas. Of all regional migrants leaving the agricultural sector in India, construction absorbs about 9.8%, making it the next most favored sector for the migrant labor force after retail. In India, all workers except about 3 percent are unorganized workers (Census of India, 2001). Informal construction workers are mainly casual workers in two geographic areas, accounting for 98% of women and 85% of men in India and 95% of women and 74% of men in urban India (Raveendran and Vanek, 2020). Of the 482 million employed in India, approximately 194 million are permanent and semi-permanent migrant workers (India Census 2011). Unskilled and semi-skilled migrant workers were hit hardest when the lockdown was declared in March of year 2020 as a measure to contain the exponential spread of the COVID-19 pandemic in India (Dandekar and Ghai, 2020). Millions of informal migrant women workers have been left without food and shelter. The COVID-19 Pandemic (Global Pandemic) has caused cross-station movement of construction workers, resulting in loss of livelihoods.

Occupational segregation is a major problem for women in employment, especially in the construction industry, which is famous for gender segregation. Although it is possible to guarantee equal opportunities to women in the face of segmentation problems in the construction sector, various problems exist in the construction sector, such as a shortage of skilled manpower and a reduction of labor costs (Araya, 2021). The informal sector employs a huge number of workers, especially women, in urban India. Women are predominantly vulnerable to the disadvantages of informal construction workers because of the interface of different social and financial conditions. Of all the female construction labor force in the country, only about 7.5% get membership in listed

unions (Geetika, Gupta, and Singh, 2011) due to factors like male dominance, insecure environment, no child care services, etc. Women construction workers live below acceptable levels. They live without satisfactory facilities and very low wages that do not meet their everyday needs (Kumar, 2019). Most interstate migrant workers live without social security (John et al. 2020).

The unorganized sector of the ever-evolving construction industry suffers from widespread neglect and with the spread of new monetary policies since the 1980s, companies have faced struggles and hired illegal workers to further decrease labor costs (Agarwala, 2007). Various steps have been taken to avoid complacency in this field, but not much has been accomplished in the government plans and policies. Since the ancient times, construction has taken place mainly in places of worship in India, due to religious and social restrictions and various beliefs, only men were permitted to carry out those responsibilities, and women typically prepared the area and transported construction materials. During the construction course, they helped the men and maintained the equipment. Modern building activities are dominated by modern technology, but the position of women is the same (Kaveri, 1995). Fixed working hours remain an unknown luxury for many untrained construction workers, who rely heavily on physical activity (Breman, 1996). Many things put construction workers at risk such as temporary employment, employer-employee relationships which are very fragile and short-lived, and workers are at risk of natural loss of life owing to the absence of safety, health, and social services. And since they are part of the informal sector, women labor cannot negotiate equal and fair wages and mostly do not receive any additional employment (Kumar M, 2013).

Injuries to women construction laborers comprise severe muscle ache, intestinal complications, stomach pains, etc. (Kumar M, 2013). Health risks have been linked to shocking working conditions including risk factors from impact, the penetration of discarded iron or shrill objects, and various other physical problems (Breman, 1996; Kumar M, 2013). Construction laborers keep on being unregistered and therefore do not have access to basic government welfare services, in the case of injury construction workers habitually spend their own hard-earned money and do not take any help from the government or their contractors (Kumar M, 2013; Pattanaik, 2009). Immigrant workers face major problems, obtaining smart cards from health facilities and food cards becomes problematic and therefore they get exploited day-to-day (Dalmia, 2012;

Pattanaik, 2009). There is a deficiency of communal support, like old-age annuities and healthcare insurance. As per the ILO, the present construction sector is branded by job insecurity, harassment, absence of insurance in case of an accident, inadequate compliance and interpersonal relationships on site is very unstable and poor (Pattanaik, 2009).

Women are perceived as having low quality of work and are therefore underpaid. The Indian government explained in the year 1976 that men and women workers are paid the same wages when the type of labor is the same regardless of the amount of labor (Bhaumik, 2012). As per the year 1998 investigation by SEWA in the Ahmedabad city, the usual wage for physical work for men labors is Rs. 128 per day whereas the average woman's salary is Rs. 60 a day. Women are on longstanding contracts because they are fine with lower pays, and after the wages of trained workers increased in the year 2003, the wages of unskilled construction workers continued to the same or were somewhat reduced (Baruah, 2010). This mean that the wages of female construction laborer, who remain typically unskilled or untrained, were very insufficient. 60% of females were earning between Rs. 61 and Rs. 70 a day in the nation's capital. Female construction laborers said that there is discrimination in daily wages, employers pay them Rs. 80 a day while male laborers earn Rs. 100 a day (Mumbai). Females are discriminated against in the workplace because they are not given the same job even if they have the same skills as men (Kumar M, 2013; Devi and Kiran, 2013). Females are not paid straight. Women construction workers' husband or father accepts wages on their behalf and even the pay books don't have specific data. Thus, the idea of money is relative to the women construction workers which they estimate founded on their expenditures (Dalmia, 2012).

In a study led by SEWA in city of Ahmedabad, Gujarat, India, 10% of females worked as semi-skilled labor force and, nevertheless, these women construction workers were more often paid the same as unskilled female construction workers (Baruah, 2010). Another study focused on women workers in the unorganized sector, women construction workers, agricultural laborers, and domestic labors (Dave, 2012). The purpose of this descriptive study was to recognize the socio-economic, functional, and household situations of the labor force. A multi-step, stratified random sampling method was used and data was obtained from three hundred fifty urban and rural women laborers in three regions of the state Haryana: Panipat, Kaithal, and Kurukshetra. Workers faced

problems such as wage inequality, where women workers were paid less. There were no fixed working hours, and workplace harassment was rampant.

According to the 2005 report by the National Commission on Women, the female construction labor work even until the last few days of pregnancy and return immediately afterward childbirth (Kumar M, 2013). In addition to wage labor, women must participate in all household activities such as cooking, childcare, laundry, and cleaning. When men return in search of comfort, care, and attention, females are likely to continue working in the unorganized sector (Bremen, 1996). Females are statistically better positioned in the unorganized sector but women's place in the work ladder and pay is less and their sorts of labor can be simply changed by technology. In the construction sector, the work of transporting construction supplies to the worksite and carrying gravel baskets on the head, which is mostly done by females, can be done using machines like conveyor belts, and as a result, women lose their jobs when this is implemented. Women workers are also incapacitated in skills like carpentry, plumbing, electrical work, etc., which are generally classified as manly jobs (Bhowmik, 2012). Since the subcontractors do not provide the food, women have to run the housework and prepare food for their families (Kumar M, 2013). Most women associate housekeeping and home care with economic work both at home and outside the workplace. Globalization and liberalization have increased the workload of women across the spectrum of India's workforce (Kalpagam, 2011). Lack of skills and financial constraints often force women to do this work. Citing the labor force report, it has often been renowned that whenever there is a high demand for labor in this construction sector, the employment rate of women is more complex than men.

Further, every time there is a slight reduction in the labor force, women construction workers will be laid off more in comparison to men (Devi and Kiran, 2013). In Devi's case study, she highlights matters such as husbands' alcoholism, family members' income, domestic exploitation, powerlessness to have education and healthcare conveniences in unfamiliar city environments, and the allocation of a significant portion of earnings by contractors. There are hitches in opening bank accounts by migrant female labor as no documents are available in their name, origin place, and additional details (Dalmiya, 2012). Females labor and their children have constantly been portrayed as accompanying migrants and are more susceptible due to low financial preferences and absence of social sustenance in the novel area (Kumar M, 2013). It is

simpler for females to gain skills than to get a job as trained labors. Traditionally, females face significant societal and cultural blockades to entry into the "male" construction industry (Baruah, 2010). Lack of financial control and the absence of education and information about their constitutional rights, despite being earning members, women become burdensome and vulnerable (Dalmiya, 2012). Extremely harsh conditions in the sector lead to bottle-up anger among labors who have to find outlets and it is barely shocking that the frailest members suffer utmost in the environment (Bremen, 1996).

Citing the Ministry of Labour and employment in India these are the current Labour Reforms: As per the info given by the ministry of labor and employment, To improve ease of obedience and ensure regularity in labor laws, the Government of India has recommended consolidating the central labor laws into broader groups such as The Code on Social Security, 2020 is a The Social Security Act purposes to alter and unify laws related to social security to extend social security to all employees, whether organized or unorganized or otherwise. It also extends the assistance of social security to platform workers, one of the main job creation sectors. The Code on Wages (2019) is a code that pursues to control pay and bonus expenditures in all engagements where any business, trade, occupation, or manufacturing is carried out. It will apply to all employees. The 2020 Code of Safety, Health, and Working Conditions is a Code that consolidates and amends the laws governing the health, safety, and working conditions of those who work in an establishment. The Act substitutes thirteen old central labor laws. The Industrial Relations Act 2020 unites and amends laws relating to trade unions, industrial employment conditions, and the investigation and resolution of labor disputes. Ignorance and lack of awareness create barriers between builders and governments' continued efforts to improve the unorganized workforce. Social Security Welfare Schemes include Pradhan Mantri Shram Yogi Maan-Dhan Yojana (PM-SYM) (Old Age Protection), Pradhan Mantri Jeevan Jyoti Yojana (PMJJBY), Pradhan Mantri Suraksha Bima Yojana (PMSBY), Atal Pension Yojana, and Aam Admi Beema Yojana. Informal sector workers make up around 93% of the country's total labor force. The government provides some social security for certain occupations, nonetheless, their coverage is limited. Most workers still do not have social security. Knowing the need to provide social protection to these laborers, the central government presented a bill to Parliament. Employment schemes: The MGNREGA scheme is designed to give employment to a limit of 100 days per

household per year. The wage rate (220) has been increased and to be incorporated. Not only the increasing inflation, but the pandemic has also made it very difficult for poor strata of society to survive with the help of such a scheme. Garib Kalyan Rozgar Yojana scheme will give employment for one hundred and twenty-five days.

In the country, the chief drivers of domestic migration and global migration are the predominant joblessness, modest labor market, and the prospect of improved livelihoods in the host state or country. Though, the countrywide lockdown to control the COVID-19 pandemic and the sealing of regional and intercontinental borders led to the reverse migration of unorganized migrant laborers. This necessitated the central and state governments and they formulated a collective strategy to enable their relocation and smooth rehabilitation into the post-Covid-19 economy. The Covid-19 crisis has exacerbated many of the pre-existing difficulties faced by migrating communities, causing them to continuously suffer at various phases of their repositioning (Asma Khan, 2021). The network plays an imperative part in the course of movement of construction workers. There is a network amongst contractors and laborers that transports unskilled underpaid workers from distant places and in some scenarios trained laborers act as a bridge between employers and rural unskilled villagers. Poverty, obligation, unemployment, starvation, and conflict push village unskilled workers out of the vicinity to find work and improve their standard of living and this draws the rural masses toward the urban construction labor market. Unorganized laborers are susceptible to unethical games played by unethical individuals and in this case contractors, including government employees who have authority and who are out to exploit them. Weaknesses add to these people's misery, putting them in a vicious circle. This unfavorably affects development trends and job creation and further marginalizes the labor force. The unorganized sector is a very vital part of the Indian economy and its significance is increasing mainly owing to the cumulative casualization of labor of prevailing formal labor and the lack of employment prospects. In terms of wages, migrant construction laborers are better off than in their home state. They can make substantial savings by putting in long working hours and overtime, leading to awfully prudent lives to save some money. Nevertheless, the fact that migrant women laborers are discriminated against in terms of wages and working conditions in the workplace cannot be ignored. The working labor class, specifically low-income migrant workers, has been the hardest hit by the Covid-19-inspired lockdown.

In this context, the present work investigates the impact of COVID-19 on daily wage-earning women construction workers to find the magnitude of various problems they face during COVID-19, and to do a comprehensive analysis to compare and correlate the dependencies or relationship of these problems with marital status, daily wage, and reverse migration.

2.3 Research Gap and Summary

The current literature has experimentally inspected the primary impacts of the lockdown on the employment situation in India and did not precisely consider gender aspects (APU 2020; Kapoor 2020; NDIC 2020). (Deshpande ,2020) solely examines the abrupt effects of the COVID-19-induced lockdown on all women workers. Most of the researchers used a questionnaire survey to gather the responses from the respondents, a scale of 1-5 is generally adopted in this literature review. All the factors are divided into groups in these research papers to make the study easy and are mainly grouped into 5-10 groups. The total number of factors considered for the preparation of the questionnaire is in the range of   25 – 60, only a few other papers having several factors as high as 70 and 115 were observed. The survey was conducted on construction personnel, mostly project managers, site engineers, supervisors, and craft workers in the range of 100-180 respondents. Mostly convenient sampling methods and statistical software are used for research methodology.

Based on these literature reviews, one thing was observed that there was no such study found that talks about the study of the effect of the pandemic on daily wage-earning women construction labor force.

1. What is the magnitude of personal social problems faced by daily wage-earning women construction workers during COVID-19?
2. What is the magnitude of occupational problems faced by daily wage-earning women construction workers during COVID-19?
3. What is the magnitude of gender biases faced by daily wage-earning women construction workers during COVID-19?
4. What is the magnitude of economic problems faced by daily wage-earning women construction workers during COVID-19?

5. What is the magnitude of safety and healthcare problems faced by daily wage-earning women construction workers during COVID-19?

6. What is the magnitude of family problems faced by daily wage-earning women construction workers during COVID-19?

7. What is the magnitude of all other COVID-19-related problems faced by daily wage-earning women construction workers?

8. What is the magnitude of problems faced by women construction workers during COVID-19 because of illiteracy and lack of awareness or ignorance?

9. What is the relation between interstate reverse migration and the magnitude of categories of problems faced by women construction workers during COVID-19?

10. What is the possible correlation between the age of the women construction workers and gender biases faced by them in the construction industry?

11. What can be the possible relationship between women construction workers' problems and their marital status?

12. What is the impact of wage difference or the daily wage on the problems faced by female construction laborers during the pandemic?

2.4 Aims and Objectives Defined

Based on the review of the literature, many observations were made as listed in the summary of the literature. A review of this literature has given us a research gap on which this current study is based. Thus, from the review of literature, the current study aims to determine the impact of Covid-19 on daily wage-earning women construction laborers. To achieve this aim, the study is divided into various objectives. On the completion of all the below-mentioned objectives, we will achieve the aim of the current study.

1. To identify the magnitude of different problems of women labor in the unorganized construction sector during the Covid-19 pandemic.

2. To analyze and co-relate female labor force participation works and working women problems during Covid-19.

3. To suggest recommendations (compliance and protection), (revival and recovery), (Building resilience and agility).

CHAPTER 3

METHODOLOGY

3.1 General

This chapter discusses the methodology adopted for this research work. In this section, we will discuss the selection of all the factors, a grouping of these factors, preparation of questionnaire survey form, selection of survey personnel, data collection, and analysis of data, methods used in the analysis of data, convenient sampling method, and use of SPSS statistical software. This chapter thoroughly explains every step taken for the completion of this research study and also explains the analysis methods used in this study.
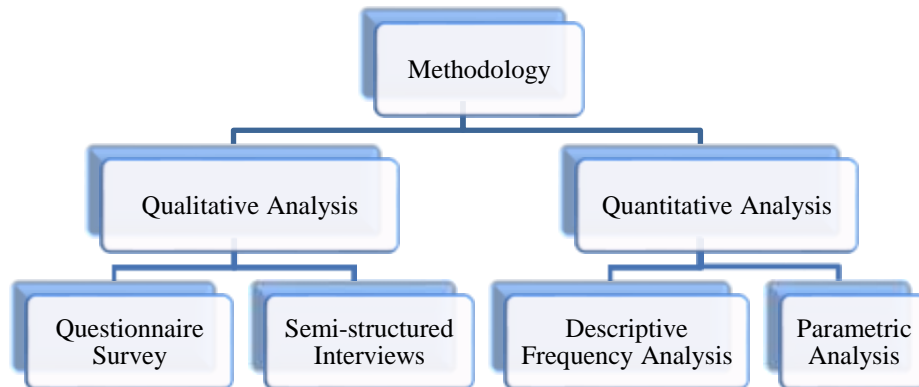
Fig. 3.1 Sequencing of the methodology

The methodology consisted of two-step processes (a) Qualitative and (b) Quantitative analysis of the data. The qualitative research approach is considered for data collection via a questionnaire survey and semi-structured interviews (John et al., 2020). The data collected was validated as per the norms from the Ministry of Labour and Employment, World Health Organization, National Sample Survey reports, Economic Survey, etc. Since the objective is to do a thorough analysis of various problems and challenges faced by female construction laborers during the COVID-19

pandemic, the unit of analysis for the research is the individual with a focus on single-gender specifically women.

The selection of factors affecting the women construction workers was identified from the published literature. Moreover, factors about the geographical location of the study in the context of the COVID-19 were further appended. The identified factors were used for the preparation of the questionnaire survey form. The survey questionnaire consisted of 90 questions bifurcated into 70 questions focusing on identifying the problems affecting women labor and the remaining 20 questions dealing with the respondent's demographic details.

3.2 Factor Bank

As discussed in the literature review those studies on women's labor exist in different research journals and books. These studies were conducted in different parts of the world by different authors. Taking the help of those research works, factors that affect women labor were taken from them. A factor bank was prepared in spreadsheet software containing 70 such factors. The foundations for data collection comprise the main data, constituting the respondent's response i.e., the daily wage-earning women construction laborers at the site of work. Secondary sources include information taken from articles, and journal articles that have been used for the Literature Review and further to create and compile an effective factor bank for the questionnaire survey.

3.3 Selection of Factors

After the factor bank was created, the factors ranking top and most common in the factor bank, containing factors from the different studies, were selected for this research work. Each factor was little modified to clearly explain the meaning and how it impacts women's labor during a pandemic so that it could easily be understood by the respondents. As there is no such study conducted in Himachal Pradesh concerning the impact of the pandemic on women construction workers, thus, some factors were taken from the response plans by the UN, ILO, UNDP, and other organizations which prepared their reports describing the impact of covid-19 on different strata of society.

Table 3.1: List of factors selected for this study.

S. No.	Factors	S. No.	Factors
1.	Abuse	36.	Labor disputes
2.	Access to education	37.	Labour exploitation
3.	Accidental injuries	38.	COVID-19
4.	Accidents during construction	39.	Labor rights
5.	Age	40.	Labour unions
6.	Alcoholism	41.	Labour cards
7.	Anxiety	42.	Lack of awareness about vaccination
8.	Availability of healthcare	43.	Welfare policies
9.	Use of masks and sanitizers	44.	Lack of family support
10.	Change in government laws	45.	Lack of job opportunities
11.	Child Marriage	46.	Lack of quarantine facility
12.	Childcare	47.	Lack of safety measures
13.	COVID-19 symptoms	48.	Lack of sanitation facility
14.	Earning members of the family	49.	Lack of social support
15.	Denial of wages	50.	Lack of transportation facility
16.	Diseases	51.	Loss of a family member
17.	Divorce or Separation	52.	Loss of jobs
18.	Domestic Violence	53.	Loss of shelter
19.	Dowry	54.	Marital status
20.	Educational qualification	55.	Maternity leaves
21.	Fairness in hospital facilities	56.	Medical facilities on site
22.	Fairness of Workload	57.	Mental harassment in the workplace
23.	Fertility Problems	58.	Mental stress and depression
24.	Food shortage	59.	Poor site conditions
25.	Fraud by contractors	60.	Poverty
26.	Getting infected	61.	Reverse Migration
27.	Holidays/ sick leave	62.	Sexual harassment in the workplace

28.	Housing problems	63.	Social Distancing
29.	Increase in house rent	64.	Unequal pay
30.	Increase of dependents	65.	Unequal workdays
31.	Inflation	66.	Unpaid care work
32.	Interstate reverse migration	67.	Vaccination
33.	Job opportunities biases	68.	Violation of safety laws
34.	Job security	69.	Water supply/ electricity
35.	Job security	70.	Workplace Absenteeism

3.4 Factor Grouping

To better understand all 70 selected factors that impact daily wage-earning women labor working in the construction industry, they have to be divided into groups. While going through the list of these factors very thoroughly, the collected data were processed for quantitative analysis. Factors depicting similar nature were further categorized into eight groups: 1) Personal social problems; 2) Occupational problems; 3) Economic problems; 4) Overall gender Biases; 5) Safety and healthcare problems; 6) Family related problems; 7) COVID-19 Lockdown problems; 8) Problems due to illiteracy and ignorance. Furthermore, a comprehensive quantitative analysis is done through SPSS software.

3.4.1 Personal social problems during Covid-19

Women construction workers face many problems daily. Factors related to personal and social problems faced by women construction workers are given below (Table 3.2). The study mainly focused on 10 such factors and these factors helped in understanding the day-to-day problems faced by women working in the construction industry (Chaudhari, 2012 and Gogoi,2020).

Table 3.2: Personal social problem factors

S. No.	Factors
1.	Access to education
2.	Age
3.	Alcoholism
4.	Child Marriage
5.	Dowry
6.	Domestic Violence
7.	Fertility Problems
8.	Marital status
9.	Mental stress and depression
10.	Unpaid care work

3.4.2 Occupational Problems during Covid-19

Loss of jobs during the pandemic impacted women construction workers negatively. A total of 10 factors (Table 3.3) were grouped to understand the various occupational problems women construction workers faced during COVID-19 (Gogoi, 2020 and Kapsos,2014).

Table 3.3: Occupational problem factors

S. No.	Factors
1.	Accidents during construction
2.	Job security
3.	Labor disputes
4.	Lack of job opportunities
5.	Lack of sanitation facility
6.	Maternity leaves
7.	Mental harassment in the workplace
8.	Poor site conditions
9.	Sexual harassment in the workplace
10.	Violation of safety laws

3.4.3: Economic Problems during COVID-19

8 factors (Table 3.4) were selected to find out the significance of economic problems faced by female construction labor force especially the status of migrant women workers in the construction industry who had to undergo interstate reverse migration (Alison, 2017 and Uppal,2020).

Table 3.4: Economic problem factors

S. No.	Factors
1.	Denial of wages
2.	Increase in house rent
3.	Inflation
4.	Loss of jobs
5.	Poverty
6.	Reverse Migration
7.	Water supply/ electricity
8.	Workplace Absenteeism

3.4.4: Gender Biasness during COVID-19

According to the literature survey, 5 factors were selected to understand the gender biases faced by daily wage-earning women construction workers on the construction site (Table 3.5). Gender biases in the construction industry are very much visible (Asongu, 2020; Malte,2021; Alon,2020)

Table 3.5: Gender biases problem factors

S. No.	Factors
1.	Job opportunities biases
2.	Job security
3.	Fairness of Workload
4.	Unequal pay
5.	Unequal workdays

3.4.5 Safety and Healthcare Problems during COVID-19

10 factors were selected to evaluate the significance of safety and healthcare problems faced by women construction workers during the pandemic (D.Rajasekhar, 2016).

Table 3.6: Safety and Healthcare Problem Factors

S. No.	Factors
1.	Accidental injuries
2.	Availability of healthcare
3.	Availability of masks and sanitizers at the construction site
4.	COVID-19 symptoms
5.	Diseases
6.	Fairness in hospital facilities
7.	Lack of safety measures
8.	Medical facilities on site
9.	Social Distancing
10.	Vaccination

3.4.6 Family Problems during Covid-19

Due to job loss, the income of construction workers was adversely affected during COVID-19 lockdowns (Paul, 2011 and Das Kabita, 2012). To better understand the family problems that women construction workers faced, the following 8 factors were selected.

Table 3.7: Family problem factors

S. No.	Factors
1.	Abuse
2.	Childcare
3.	Decrease in no. of earning members of the family
4.	Divorce or Separation

S. No.	
5.	Housing problems
6.	Increase of dependents
7.	Loss of a family member
8.	Lack of family support

3.4.7 All other COVID-19 lockdown related problems

The following 9 factors include all the factors that were left and didn't fit into a particular category or group (Table 3.8). These factors helped us understand the problems related to the COVID-19 lockdown that women construction workers faced (UN, 2020 and Abdul Azeez, 2020).

Table 3.8: Covid-19 lockdown related problem factors

S. No.	Factors
1.	Anxiety
2.	Food shortage
3.	Getting infected
4.	Interstate reverse migration problems
5.	Loss of shelter
6.	Lack of social support
7.	Lack of transportation facility
8.	Lack of quarantine facility
9.	Labour exploitation

3.4.8 Problems due to Illiteracy and lack of awareness during Covid-19

The following 10 factors (Table 3.9) were selected and further accessed to know the problems that arise from one's ignorance or lack of awareness. While interviewing women construction workers on-site, it was clear that many issues arise due to illiteracy and many reported cases of fraud and denial of wages by contractors (Bhalla, 2014).

Table 3.9: Illiteracy and lack of awareness problem factors

S. No.	Factors
1.	Change in government laws
2.	Educational qualification
3.	Fraud by contractors
4.	Holidays/ sick leave
5.	Lack of awareness about COVID-19
6.	Lack of awareness about vaccination
7.	Lack of awareness about the benefits of Labour cards
8.	Lack of awareness about labor rights
9.	Lack of awareness about welfare policies
10.	Lack of awareness about labor unions

3.5 Questionnaire Survey

The current study is a descriptive one and describes the difficulties and challenges faced by female construction laborers. Since the population was not finite, the researcher used a non-probability sampling technique and adopted a convenient sampling method to collect the sample. Judgmental or purposive sampling technique was also considered for fixing the sample size for study.
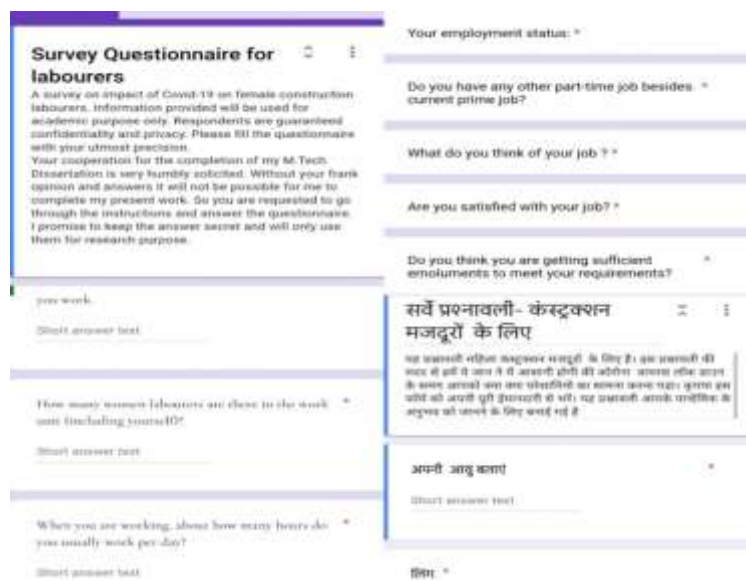
Fig. 3.2 Questionnaire Survey in Hindi and English language

A questionnaire was prepared for women workers receiving daily wages in the construction industry. Questionnaire consisted of 90 questions that were formulated after thorough literature analysis and considering various governmental survey forms. A similar questionnaire was also prepared for men construction workers to understand gender biases more deeply. Semi-Structured interviews were conducted for the ease of getting adequate and accurate responses and for the comfort of respondents.

Fig. 3.3 Women construction workers and their children at a construction site

As women construction workers struggled to fill out questionnaires, interviews were conducted for their convenience. Approximately. 550 women construction workers were interviewed to understand the magnitude of problems these hardworking, overburdened, and underpaid women construction workers were facing during COVID-19. Due to various constraints and according to the need of the study, data of a total of 130 women construction workers were considered for a detailed questionnaire survey and semi-structured interviews (Table 3.10). A survey of 40 daily wage-earning men construction workers was also conducted to understand the gender biases during the COVID-19 pandemic (Table 3.10).

Table:3.10: Gender Distribution of the Respondents

(n=170)	Gender	Frequency	Percent
Valid	Female	130	76.5
	Male	40	23.5
	Total	170	100

The total sample size of the survey comprised 170 daily wage-earning construction workers (Srivastava and Sutradhar, 2016). As the population is not finite, a non-probability convenient sampling method is adopted to determine the sample size (Behera, et al., 2021). The geographical scope of this research is limited to rural and semi-urban areas of the Indian state of Himachal Pradesh. The questionnaire survey was conducted in both Hindi and English languages. Interviews were conducted while maintaining proper social distance on the construction site during COVID-19.

3.6 Hypothesis

After literature review and data collection mainly through interviews, the problems of women construction workers became more visible. Based on the entire experience of the period of interviews, and site visits during COVID-19, the following were the formulated hypotheses for the present study:

1. There is a significant relationship between the daily wage of women construction workers and various categories of problems checklist faced during COVID-19. ($P<0.05$

2. There is a significant correlation b/w the age of the women construction workers and the overall gender biases they faced during COVID-19. ($P<0.05$)

3. There is a significant relationship between the interstate reverse migration status of migrant women construction workers and various problems faced during COVID-19. ($P<0.05$)

4. There is a significant relationship b/w the marital status of women construction workers and various categories of problems checklist faced during COVID-19. ($P<0.05$)

3. 7 Data analysis

Analyses of survey data are done in the following 3 ways via SPSS statistical software:

1. Percentage Analysis
2. Descriptive Frequency Analysis
3. One-way ANOVA analysis

The collected data were analyzed using percentage analysis for demographic details and statistical analysis was completed to find the relationship and connection between the dependent and independent variables selected in the study. The interpretation was based on data analysis using SPSS software. Using the methodology and working on the research questions and research gaps the following results were obtained and are shown in chapter 4.

CHAPTER 4

RESULTS AND DISCUSSIONS

4.1General

This chapter discusses the outcomes of this study. After the analyses, the results of the percentage analysis are given in a tabular form. Each of the eight groups is discussed further. After compiling the responses to the questionnaire survey, the factors affecting women construction workers during COVID-19 were divided into eight main groups. This chapter also discusses the probable reasons behind the very critical factors.

4.2 Results and Discussions

Data collected were analyzed using SPSS statistical software. Descriptive frequency analysis is conducted to find the magnitude of various problems categorized into eight groups. Crosstabulation analysis was also conducted to find various factors' interdependencies and determine correlation. Furthermore, a one-way analysis of variance ANOVA was also done to find the significance of various problems women construction workers face.

4.2.1 Demographic Distribution

The demographic details of 130 daily wage-earning women construction respondents synthesized using listwise descriptive frequency analysis are shown in Table 4.1.

Table 4.1: Demographic Distribution of the Respondents

S. No.	Factors	Particulars	Frequency (n:130)	Percentage
1	Age	Below 25 years	21	16%
		26-35 years	51	39%
		36-45 years	41	32%
		Above 45 years	17	13%
2	Marital Status	Married	102	78%
		Un- Married	18	14%
		Widowed/ Separated	10	8%
3	Education	Illiterate	31	24%

		Primary	63	48%
		Elementary	27	21%
		Secondary	8	6%
4	Home State	Himachal Pradesh	14	11%
		Uttar Pradesh	30	23%
		Bihar	39	30%
		Jharkhand	34	26%
		West Bengal	8	6%
		Haryana	5	4%
5	Worker status	Migrants	116	89%
		Residents	14	11%
6	Work Area	Rural	63	48%
		Urban	21	16%
		Both	46	35%
7	Monthly Income	Rs. 3000-6000	23	18%
		Rs. 6001-9000	100	77%
		Above Rs. 9000	7	5%
8	No. of Dependents	One	20	15%
		Two	26	20%
		Three	27	21%
		Four	16	12%
		Five	24	18%
		More than 5	15	12%
9	Electricity Facility	Yes	130	100%
10	Water Facility	No	34	26%
		Yes	96	74%

Out of the total sample population of 130 daily wage-earning women construction workers, 17% of the respondents are above the age of 45 years which means that economic conditions necessitate the respondents to continue their job at old age. While conducting the interviews most of the women expressed their spouse's habit of alcoholism as a reason to continue to work and support their families. 16% of the women respondents below the age of 25 stated that early marriage and increasing responsibilities of childbirth and rearing were their reason to choose work as a daily wage construction worker. 78% of the respondents are married and that shows women respondents are more likely to work as construction workers if their spouse is also in the same profession.

In the survey, it was also found that women construction workers often took work on the same or a nearby construction site in which a male family member was working. Education for

women's empowerment is pivotal. Contrary to that only 48% of the respondents' education is up to the primary. Respondents stated patriarchal influence, early marriage, poverty, and domestic work burden as hindrances to their path of getting themselves educated. The questionnaire survey wasn't enough to get responses from the targeted population, the reason being illiteracy and to combat this problem semi-structured interviews were conducted in the native language. 24% of the women construction workers were not able to read or write. Lack of education among unorganized workers often leads to a lack of awareness and ignorance, which further blocks these workers from avail of benefits from govt. 79% of the women construction workers migrated from states like Uttar Pradesh, Bihar, and Jharkhand. 48% of the respondents are working in rural areas. The average salary of women construction workers depends on various factors like availability of work hours and many more. 18% of the respondents' average salary is between Rs. 3000 and Rs. 6000. The loss of jobs during the pandemic left them with no money. 12% of the women respondents were bearing the burden of more than 5 dependents. This burden of dependents increases when the earning members of the family decrease.

Women workers engaged in construction are socially and economically backward and therefore unable to organize themselves to pursue their common interests. This is due to the informal nature of employment, lack of awareness, illiteracy, lack of mobility, poverty, small size, scattered size, and lack of cooperation among most employees. Therefore, women construction workers face many problems like job security, low wages, extra working hours, and the absence of social and medical welfare facilities. In general, construction workers face economic problems, health problems, illnesses, accidents, and even a lack of life. In addition, ignorance of social welfare measures and social safety and medical benefits affects the morale of women construction workers and makes their lives miserable.

4.2.2 COVID-19 impact on the magnitude of various problems

COVID-19 had a significant impact on the daily wage-earning women construction workers. Considering the problems mentioned above, the data collected was categorized into 8 groups tabulated above based on the questionnaire survey. Further, the responses were categorized into high magnitude and low magnitude as shown in Table 4.2.

Table 4.2: Distribution of Respondents by the Magnitude of their Problems

S. No.	Daily Wage-Earning Women Checklist and its Dimension	No. of Respondents (n:130)	Percentage
1	**Magnitude of personal social problems during COVID-19**		
	High Magnitude	73	56.2
	Low Magnitude	57	43.8
2	**Magnitude of occupational problems during COVID-19**		
	High Magnitude	72	55.4
	Low Magnitude	58	44.6
3	**Magnitude of economic problems during COVID-19**		
	High Magnitude	81	62.3
	Low Magnitude	49	37.7
4	**Magnitude of overall gender biases during COVID-19**		
	High Magnitude	82	63.1
	Low Magnitude	48	36.9
5	**Magnitude of safety and healthcare problems during COVID-19**		
	High Magnitude	74	56.9
	Low Magnitude	56	43.1
6	**Magnitude of family-related problems during COVID-19**		
	High Magnitude	80	61.5
	Low Magnitude	50	38.5
7	**Magnitude of other COVID-19 lockdown related problems**		
	High Magnitude	75	57.7
	Low Magnitude	55	42.3
8	**Magnitude of problems due to illiteracy and ignorance**		
	High Magnitude	80	61.5
	Low Magnitude	50	38.5

Respondents reported a high magnitude of family problems, gender biases, economic problems, and the problems due to illiteracy and ignorance at 62.3%, 63.1%, 61.5%, and 61.5% respectively. Migrant women respondents stated problems like separation from families, reverse migration, and job loss as major three factors resulting in a high magnitude of family problems during COVID-19. It was found that apart from wages, discrimination was also seen in the level of recruitment, selection, and promotion for skilled jobs for women construction workers. Contractors are biased against hiring women, especially in jobs where workers are always male.

The problems like personal social, occupational problems, healthcare, and other COVID-19 related problems have comparatively low magnitude.

4.2.3 Gender Biases in the construction sector: Pay gap & fewer workdays

Out of 130 respondents, 82 get an average of fewer than 15 workdays in a month. With fewer work prospects, women construction workers are subjected to economic burden and the cycle of debt. Women construction workers are trapped in a cycle of late entry, being unskilled, harassment at work, and low wages, and therefore, they are deprived of a safe working environment.

Table 4.3: Crosstabulation between Gender and Average Daily Wage of Respondents

(n=170)		Average Daily Wage of Respondents					
		Rs 350	Rs 400	Rs 450	Rs 500	Rs 550	Total
Gender	Female	76	54	0	0	0	130
	Male	0	11	10	12	7	40
Total		76	65	10	12	7	170

Table 4.3 shows the wage gap between women workers and their male counterparts. All 40 men respondents were unskilled or semi-skilled daily wage-earning construction workers and so were the women. Despite having quite similar skillsets women workers are given fewer opportunities to work and as a result, they are still getting paid less. Respondents reported no work opportunities during the first few lockdowns. Most women worked 10-11 hours a day for a mere Rs 350 per day. All the men construction workers were getting paid more than Rs. 400 per day. Respondents also reported denial of wages during the COVID-19 lockdown.

Table 4.4: One-Way Analysis of Variance Among Daily wage of the Respondents concerning Various Categories of Problems

(n=130)		Sum of Squares	df	Mean Square	F	Sig.
Magnitude of personal social problems during COVID-19	Between Groups	6.987	3	2.329	11.938	P<0.01
	Within Groups	24.582	126	0.195		Highly
	Total	31.569	129			significant
Magnitude of occupational problems during COVID-19	Between Groups	5.625	3	1.875	8.916	P<0.01
	Within Groups	26.498	126	0.21		Highly
	Total	32.123	129			significant
Magnitude of economic problems during COVID-19	Between Groups	6.218	3	2.073	10.742	P<0.01
	Within Groups	24.313	126	0.193		Highly
	Total	30.531	129			significant
Magnitude of overall gender biases during COVID-19	Between Groups	5.504	3	1.835	9.15	P<0.01
	Within Groups	25.265	126	0.201		Highly
	Total	30.769	129			significant
Magnitude of safety and healthcare problems	Between Groups	1.239	3	0.413	1.699	P>0.05
	Within Groups	30.638	126	0.243		Not
	Total	31.877	129			significant
Magnitude of family problems during COVID-19	Between Groups	2.466	3	0.822	3.492	P<0.05
	Within Groups	29.657	126	0.235		significant
	Total	32.123	129			
Magnitude of other COVID-19 lockdown related problems	Between Groups	3.286	3	1.095	4.769	P<0.01
	Within Groups	28.937	126	0.23		Highly
	Total	32.223	129			significant
Magnitude of problems due to illiteracy and ignorance	Between Groups	2.395	3	0.798	3.363	P<0.05
	Within Groups	29.913	126	0.237		significant
	Total	32.308	129			

Table 4.4 shows that there is a significant relationship between the daily wage of the women construction workers and the family problems, problems due to illiteracy, and ignorance. There is also a highly significant relationship between personal social problems, occupational problems, gender biases, economic problems, and other COVID-19 problems. Thus, it is observed that construction is a highly male-dominated industry with women laborers being less paid than their male counterparts having similar skills.

Table 4.5: Cross Tabulation between Age of Respondents and Magnitude of Overall Gender Biasness during COVID-19

(n=130)		Age of Respondents				
		Below 25 years	26-35 years	36-45 years	Above 45 years	Total
Magnitude of overall gender biases during COVID-19	Low Magnitude	1	15	22	12	50
	High Magnitude	20	36	19	5	80
Total		21	51	41	17	130

Table 6 shows that respondents faced more gender biases at the entry level at the young age of less than 25 years in the construction industry. 80 respondents reported a high magnitude of overall gender biases during COVID-19. The construction industry needs labor flows now more than ever. Among many of the fundamental findings, it's miles mentionable that the confirmation of the chasm includes the hiring of women construction workers within the construction enterprise and the reproduction of chauvinist fashions by both males and females. In contrast, cutting-edge society has sought to progress in this context and has produced some space for the distribution of powers formerly constrained to men workers. The empowerment experimented by women workers, while operating in a predominantly male surrounding, has contributed to this modification.

Unpaid care work further increases the gender biases domestically, according to the OECD, it refers to all unpaid services provided within a household for its members, including care of persons, housework, and voluntary community work. These activities are considered work because theoretically, one could pay a third person to perform them. Lockdown also led to an increase in Unpaid Care Work. 57.1 % of the respondents clearly showed that unpaid care work drastically increased during Covid-19.

4.2.4 Interstate Reverse Migration Status: A determinant of the plight of women in construction

Loss of work opportunities and denial of wages in the construction industry forced migrant women construction workers to undergo interstate reverse migration during COVID-19 lockdowns. The havoc resulted in major disruption in the life of migrant construction workers.

Table 4.6: Cross Tabulation between Migrant Status of Female Respondents and Age of Female Respondents

(n=130)		Age of Respondents				Total
		Below 25 years	26-35 years	36-45 years	Above 45 years	
Migration Status of Respondent	Migrant	21	43	35	17	116
	Himachal Domicile	0	8	6	0	14
Total		21	51	41	17	130

Table 4.7: Interstate Reverse Migration status of Migrant Female Respondents

(n=130) Frequency		Percentage
Undergone Reverse Migration	52	44.8
Didn't Undergo Reverse Migration	64	55.2
Total	116	100

Most of the migrant workers are in the age group of 26-35 years. Out of the total 116 migrant women construction workers interviewed, 44.8 % undergo reverse migration during COVID-19 lockdowns. Women construction workers who did undergo reverse migration faced wage denial by their contractors. Many respondents stated that they were frauded on transportation promises by their contractors and paid heftily to reach their homes. Many respondents also agreed that due to a lack of awareness and ignorance about the pandemic and government relief schemes, most of the respondents faced an economic crisis and food shortages.

Table 4.8: One-Way Analysis of Variance Among Interstate Reverse Migration Status of The Respondents concerning Various Categories of Problems

(n=130)		Sum of Squares	df	Mean Square	F	Sig.
Magnitude of personal social problems during Covid-19	Between Groups	0.584	1	0.584	2.412	P>0.05
	Within Groups	30.985	128	0.242		Not
	Total	31.569	129			Significant
Magnitude of occupational problems during Covid-19	Between Groups	1.348	1	1.348	5.608	P<0.05
	Within Groups	30.775	128	0.24		Significant
	Total	32.123	129			
Magnitude of economic problems during Covid-19	Between Groups	1.765	1	1.765	7.852	P<0.01
	Within Groups	28.766	128	0.225		Highly
	Total	30.531	129			Significant
Magnitude of overall gender biases during Covid-19	Between Groups	2.038	1	2.038	9.08	P<0.01
	Within Groups	28.731	128	0.224		Highly
	Total	30.769	129			Significant
Magnitude of safety and healthcare problems	Between Groups	0.618	1	0.618	2.529	P>0.05
	Within Groups	31.259	128	0.244		Not
	Total	31.877	129			Significant
Magnitude of family problems during Covid-19	Between Groups	3.49	1	3.49	15.602	P<0.01
	Within Groups	28.633	128	0.224		Highly Significant
	Total	32.123	129			
Magnitude of other Covid-19 lockdown related problems	Between Groups	1.589	1	1.589	6.638	P<0.05
	Within Groups	30.634	128	0.239		Significant
	Total	32.223	129			
Magnitude of problems due to illiteracy and ignorance	Between Groups	2.361	1	2.361	10.09	P<0.01
	Within Groups	29.947	128	0.234		Highly
	Total	32.308	129			Significant

Table 4.8 shows that there is a significant relationship between various categories of problems for daily wage-earning women construction workers. The magnitude of problems like economic problems, gender biases, family problems, and problems due to illiteracy and ignorance have a highly significant relationship with the reverse migration status of respondents. This quantitative analysis shows that women workers faced a high magnitude of these problems during COVID-19.

4.2.5 Marital Status as a determinant

To understand the relationship between various categories of problems. Women respondents are divided into three groups based on their marital status (G1 = Married; G2 =Unmarried; G3= Widowed/ Separated). Risk of violence and sexual harassment: Unsafe accommodation at the source, lack of proper facilities during transit, and inadequate awareness regarding legal redressal pose a greater risk of violence and harm on the worksite for women and children. Instead of addressing the concerns, employers use these as an excuse to not have women and families on-site. This study found out that married women tend to join construction jobs more as compared to unmarried women. Respondents also stated that they are more comfortable working on construction sites when their husbands are around. The safety of women construction workers is a topic of concern in the construction industry.

Table 4.9: One-Way Analysis of Variance Among Marital Status of the Respondents concerning Various Categories of Problems

(n=130)		Sum of Squares	df	Mean Square	F	Sig.
Magnitude of personal social problems during Covid-19	Between Groups	1.486	2	0.743	3.136	P<0.05
	Within Groups	30.084	127	0.237		Significant
	Total	31.569	129			
Magnitude of occupational problems during Covid-19	Between Groups	0.876	2	0.438	1.78	P>0.05
	Within Groups	31.247	127	0.246		Not
	Total	32.123	129			Significant
Magnitude of economic problems during Covid-19	Between Groups	2.339	2	1.17	5.269	P<0.01
	Within Groups	28.192	127	0.222		Highly
	Total	30.531	129			Significant
Magnitude of overall gender biases during Covid-19	Between Groups	1.744	2	0.872	3.816	P<0.05
	Within Groups	29.025	127	0.229		Significant
	Total	30.769	129			
Magnitude of safety and healthcare problems	Between Groups	2.209	2	1.104	4.728	P<0.05
	Within Groups	29.668	127	0.234		Significant
	Total	31.877	129			
Magnitude of family problems during Covid-19	Between Groups	2.785	2	1.392	6.027	P<0.01
	Within Groups	29.339	127	0.231		Highly
	Total	32.123	129			Significant
Magnitude of other Covid-19 related problems	Between Groups	0.362	2	0.181	0.722	P>0.05
	Within Groups	31.861	127	0.251		Not
	Total	32.223	129			Significant

Magnitude of problems due to illiteracy and ignorance	Between Groups	1.636	2	0.818	3.387	P<0.05 Significant
	Within Groups	30.672	127	0.242		
	Total	32.308	129			

In Table 4.9, it is made clear that ANOVA analysis shows that there is a significant relationship between marital status and personal social problems, gender biases, safety and healthcare problems, and problems due to illiteracy and ignorance. Also, there is a highly significant relationship between the marital status of daily wage-earning women construction workers and problems like economic problems and family problems suffered during COVID-19.

4.3 Hypothesis Testing

The study finds that women construction workers have poor living and working conditions, and lack rights, entitlements, and voice. From the parametric analysis ANOVA, it is found that there is a highly significant relationship between the daily wage of women construction workers and the magnitude of problems like personal social, family, economic, overall gender biases, and other problems faced during COVID-19. Research hypothesis accepted. Highly significant $P<0.01$, Itself is the proof that these were the critical problems, and these have had a huge impact on the lives of women construction workers. There is also a highly significant relationship between the interstate reverse migration status of migrant women construction workers and various problems like economic, overall gender biases, COVID-19 related problems, and problems due to illiteracy and ignorance faced during COVID-19. Research hypothesis accepted. There is a highly significant relationship between the marital status of women construction workers and various categories of problems like economic, and family problems faced during COVID-19. Research hypothesis accepted. It was also found that there is a significant relationship between the various problem categories and factors like marital status, reverse migration, and the daily wage of women construction workers. There is a definite correlation between the age of the women construction workers and the overall gender biases they faced during COVID-19. It was found that women face more gender biases at the entry-level in the construction sector. While women at much older age face less gender biases while working at a construction site.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

5.1 General

This chapter talks about all the conclusions made based on analyses of all the factors and their results. From the results, recommendations are suggested for the treatment of top severe factors. Working on these recommendations will improve the lives of women construction workers and ultimately their productivity will increase which will lead them to a positive working environment in the construction industry which ultimately will increase the company's profit by finishing off the project on/before time.

5.2 Conclusions

The presented work highlights the impact of COVID-19 on gender biases in the construction sector and quantitatively proves that women construction workers are underpaid, overworked, and vulnerable.

Table 5.1: Critical problems significance

S. No.	(ANOVA) Independent and dependent variables	Significance
1.	Average daily wage & Personal Social Problems	Highly Significant
2.	Average daily wage & Occupational Problems	Highly Significant
3.	Average daily wage & Economic Problems	Highly Significant
4.	Average daily wage & Overall Gender Biases	Highly Significant
5.	Reverse Migration & Economic problems	Highly Significant
6.	Reverse Migration & Family Problems	Highly Significant
7.	Reverse Migration & Overall Gender Biases	Highly Significant
8.	Reverse Migration & Problems due to illiteracy and ignorance	Highly Significant
9.	Reverse Migration & Overall gender biases	Highly Significant
10.	Marital Status & Economic Problems	Highly Significant
11.	Marital Status & Family Problems	Highly Significant

The research work shows that daily wage-earning women construction workers were already at the bottom on an economic level in the construction industry and the pandemic has deepened these already existing problems. With an average daily wage of Rs 350 and getting work for not more than 15 days a month, 42% of women respondents are bearing the burden of more than three dependents. This paper highlights that the interstate reverse migration, wage gap, and marital status are major determinants that impacted the lives of women construction workers during COVID-19. These three factors have a very significant relationship with the various categories of problems women construction workers face. Approximately 45% of migrant women respondents faced the repercussions of interstate reverse migration. It was found that gender biases correlate with the age of women construction workers. Women at the entry-level face more gender biases. Specifically, during COVID-19, approximately 61% of respondents stated a high magnitude of overall gender biases. Unless structural and systemic discrimination is specifically addressed, there is a significant risk that future work trends will deepen existing inequalities for women. Awareness and compliance with government policies for construction workers are the need of the hour to improve the living and working conditions of these workers.

5.3 Recommendations

Suggestions for migrant women construction workers' welfare:

1. Governments should provide an appropriate platform for registration and screening of construction migrant workers, including police stations in host countries. Support and participation from contractors, panchayat, and municipalities can produce better results.
2. Steps should be taken to make informal women construction workers aware of the eSHRAM portal which is creating the National Database of Unorganized Workers (NDUW), which will be seeded with AADHAR.
3. A strong and responsive mechanism is important for the integration of interstate migrant women.
4. Nation requires an interstate coordination system and the Interstate Migration Council which can work for the safety, security, and welfare of migrant women construction workers.
5. Their movement should be monitored by both the moving state and the hosting state.

Suggestions for the welfare of children of women construction workers:

1. Appropriate and adequate strategies must be developed to ensure that the children of women construction workers are guaranteed education, health, nutrition, and social protection.

2. Children education of these migrant and resident women construction workers should be made a priority by the govt. of the state they are working for, it will result in combating child labor.

Suggestions for improvement in healthcare, food, and workplace safety:

1. Health centers and hospitals can also help organize registration and health camps for migrant construction workers and issue health cards, it can be a positive step in providing health care services to construction workers.

2. Public health organizations need to start and strengthen more "migrant-friendly" services.

3. Workplace safety training and access to appropriate safety equipment will help improve the safety of construction workers.

4. Sexual harassment and mental harassment are the main concerns. Contractors must ensure that women feel safe while working at a construction site and their complaints are well heard and resolved.

5. To address food issues, the government must introduce roaming public distribution systems and other food rights.

6. Subsidized food should be made available to migrant construction workers in their host states. Migrant women construction workers are denied rations from PDS in the host states as their home state ration cards do not work in other states of India.

7. The social welfare department needs to spread the awareness of the government. Plans and how to get the most out of it. Interstate migration requires a legal framework to address all related issues of workers who make a significant contribution to the development of the state in which they migrate. Compliance should be improved.

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