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Fabricating Health: The Challenges Faced by Women Power loom Weavers

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Abstract

The power loom sector is a significant contributor to fabric manufacturing in the country, encompassing a diverse range of products. These products span from low-value coarse and gauze cloth to high-value shirting, suiting, and made-ups. Additionally, the sector also produces a limited number of grey fabrics or yarn-dyed products. Female weavers operating within the power loom sector faces a multitude of obstacles that are significantly influencing their economic survival and overall welfare. The textile industry holds significant importance in the economic development of India, whereas the power loom industry being a crucial element within this sector. The purpose of this study is to evaluate the female labour force participation and total working hours, as well as the effect on their health, in the power loom sector of Gaya and Bhagalpur. In addition, the paper will discuss other significant obstacles faced by women weavers, such as wage disparities, lengthy working hours, and safety and security concerns. The focus of the research will be the socioeconomic standing of female power loom weavers. The study is supported by both primary and secondary data. Primary data is derived from data collection on the ground. Weavers are the backbone of the power loom sector, but they are perpetually plagued by issues related to finances, electricity, and health care, among other issues, and they receive no support from the government. As a result, the industry as a whole experiences low productivity and to enhance the conditions of the power loom weavers, there is a dire need for government support.

Keywords: Textile industry; female weavers; socio-economic; health care; government support.

1.Introduction

The Power loom sector of the textile industry is the most significant sectors in terms of employment generation and fabric production. Gaya and Bhagalpur have the greatest power loom unit in Bihar. The sector accounts for roughly 58.4% of total textile production, and over 60% of fabrics are intended for export. The ready-to-wear and home textile industries rely significantly on the power loom industry to meet their fabric needs (Nisa, 2017). The power loom sector offers numerous opportunities for establishing one's own enterprise and also generates numerous employment opportunities. There are approximately 11,000 power loom units in Gaya and 15,000 in Bhagalpur which includes both registered and unregistered unit. There are more than 5,000 households in Gaya district who are engaged in power loom sector. The handloom and power loom sector of the cotton textile industry is an ancient sector in textile(Shazli Abdul Munir Research Scholar, 2014). The power loom industry is a modernised method of textile production. It includes bleaching, colouring, finishing, and embroidery. (Rahman, 2014) The power loom sector is the only manufacturing sector that has a significant number of female workers participating in the production of products. The women participation in the weaving of fabric on power looms is a dynamic and intricate aspect of the workforce since ancient. Their participation is characterised by multiple dimensions, such as employment patterns, socioeconomic factors, and cultural dynamics (Alekina et al., 2019) Power loom sector is labour intensive. It contributes on the larger scale to avoid unemployment. As a consequence of globalisation of trade, weavers are confronted with a variety of difficulties, which increases in market share and multiple competitors. Along with many other difficulties, these challenges also include low wage, lengthy work hours, unfavourable working environment, and socioeconomic problems (Bhoje, 2017; Tippa, n.d.). These factors have impacted the contribution of women in the work force, which has led to an increase in health issues, particularly physical ailments. The decentralised power loom's working conditions include space, the installation of larger, better looms, and the workspace itself. This study is concerned with power looms located in Manpur, city in Gaya, Champa Nagar, and Nath Nagar, both in Bhagalpur. The current study will also highlight the overall employment rate of women, the health problems that these women confront, and their socioeconomic status (*155-Bhagalpur-Silk*, n.d.)

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Table: 1 Product profile of power loom cluster

State	Cluster	Product Mix
Bihar	Gaya Bhagalpur	Cotton Sheeting, Lungi, Gamchha, Fabrics, Bedsheets Viscose/Cotton Bedsheet, Silk Saree, Dress materials, Duppatta, Fabrics, salwar suit, pyjamas, scarves, shawls etc.

The weavers who work in power looms are exposed to a variety of occupational hazards, including threads, hazardous chemical substances, extended working hours, pollution, eye burning/sensation due to strong lighting, etc(Mugilan & Muthukumar, 2021). The primary concern in this sector is to safeguard female power loom weavers from potential health risks(Bano, 2023). The popular of feminine employees are conducting work-related tasks, such as spinning and warping, while adopting an awkward posture. This awkward posture includes crouching and curved positions. These positions are common that creates most health-related issues. Throughout the operation of weaving, a standing work posture is maintained, which necessitates an evaluation of the risk of developing various muscle, nerve, and joint disorders, particularly affecting the upper limb and lower back. These **occupational musculoskeletal disorders** are the most prevalent issues women confront while working in the most difficult and cyclical work environments(Kolgiri & Hiremath, 2019). Various studies recommend that most of workers working in textile industry are tend to suffer from OMSD's like redness in forearms, carpal tunnel syndrome (CTS), bicep redness, lower back pain, shoulder pain, neck pain, joint pains of knees and elbows. Most of the physically challenged activities in these industries are connected with the continuous working in awkward posture.

Cloth has been one of the most essential components of civilised human society, and it originates from the textile industry. Power-loom industry is a single largest weaving sector and most significant segments of decentralized cotton textile industry in India (Kolgiri & Hiremath, 2018). Workers are directly involved in production process of converting raw materials into finished products on a very low wage. More than one lakh female and power loom weavers reside in Bihar, and their presence is a significant asset to the textile industry. Gaya and Bhagalpur districts contain the greatest number of power loom communities. Patwa Toli, Champa Nagar, and Nath Nagar are the most renowned locations for their power loom units, which produce over one lakh fabrics. There are approximately more than 15,000 power loom units in this cluster who are involved in the manufacturing of textile products such as towels, napkins, fabrics, bed-sheets etc. These clusters are spread in different part of cities and employing about more than 50,000 workers.

2.Objectives of the Study

The primary objective of the study is to analyse the female power loom weaver's participation and impact on their health due to different occupational work related to weaving process in power loom. To analyse in depth following objectives have been taken into considerations.

Analyse the total number of female work participation in weaving process

To analyse the working condition of power loom workers To

analyse socio- economic status of female power loom weavers

To propose corrective measures to resolve the issues faced by weavers.

3. Methodology

The present research study is consisted of female labour participation in power loom sector. To fabricate health issues faced by women workers field investigations had been carried out. This research study is based on primary and secondary data. Primary data collection includes simple random sampling technique method. Data was collected with the help of well-designed questionnaire and interview scheduled. A semi-structured interview was conducted with both the proprietors of the units and the female loom employees. It is a qualitative research method that involves a decisionmaking process and a

predetermined set of open queries. For the purpose of determining the female participation rate in the power loom industry, demographic profiles of the employees were compiled. Additionally, secondary data was considered for expansion of this research study. The information was collected from published sources such as annual reports, previous research work, various reputed published journals and government official websites. A general profile of female weavers was compiled, which includes the educational level of female weavers and their socioeconomic status, which includes the number of hours they spend each day and the wages they earn. The health status of female employees was evaluated in light of various factors, including the nature of the work and occupational diseases suffering (IJERT_A_Study_of_Factors_Affecting_Produ, n.d.). A simple percentage method was used to analyse the data. Sample of 150 respondents have been selected randomly to conduct this research study.
(An_Analytical_Study_of_the_Functioning_a,n.d.) (*A_study_of_factors_affecting_productivit*, n.d.) **4.**

Review of Literature

Some important studies have been reviewed related to research below: According to **S**. **Tasneem and M. Abdul's (2014)** research, the primary factors that drove women to labour in handloom sector were due to poor economy, their incapacity to read or write, their unemployment, poverty, low income, and having a large family. Also, study examines the problems and challenges faced by female weavers in the handloom industry, including poverty, limited access to healthcare, and declining employment opportunities. The authors suggested various measures to improve the situation, such as provision of inexpensive raw materials, improving transportation and communication, and creating more employment opportunities for illiterate female weavers. The study highlights the importance of women in the manufacturing industry and the need for government support to improve their economic and social conditions.

Sultana, F.M., & Nisa, M.U. (2016) (Mehar Sultana et al., n.d.) Socio-Economic Condition of Power Loom Weavers: In A Case Study of Mau City, the difficulties encountered by power loom weavers in Mau City, India, are examined. The research emphasises the unfavourable socioeconomic status of weavers as well as the factors contributing to the diminished manufacturing output. Overall, the study provides insights into the challenges faced by power loom weavers in Mau City and suggests possible solutions to improve their socio-economic condition.

S Kolgiri, R Hiremath tries to identify the ergonomic physical risk factors that arise from riimproper posture and investigates their correlation with the incidence of work-related musculoskeletal disorders (WRMSDs) among female employees of the power-loom industry in the Solapur region of India. Additionally, age and occupational experience were found to correlate significantly with the prevalence of musculoskeletal disorder. In general, the research emphasises the significance of tackling ergonomic concerns within the power-loom sector as a means to enhance the physical and mental welfare of female employees(Kolgiri & Hiremath, 2019).

The research study conducted by **Y Bano and Absar Ahmad** examines the morbidity profile and risk factors associated with power-loom weaving in the Mau district of Uttar Pradesh. Among the weavers, a high prevalence of morbidities including anxiety, low back pain, impaired vision, and injury was discovered, according to the study. Additionally, variables including the duration of work and the environment of the workplace were found to be correlated with these illnesses. Potential remedies proposed by the study include enhanced illumination and ventilation, regular medical examinations, sufficient periods of rest, and job rotation, all of which aim to mitigate the health hazards encountered by power-loom weavers within the district. Following an analysis of these research, a few questions regarding the concerns highlighted by weavers in power looms need to be addressed(Kolgiri et al., n.d.).

Question area I: Which health problems are widespread among weavers of power looms?

According to the current study, low vision, low back discomfort, stress, injuries, respiratory problems, musculoskeletal concerns, and hearing loss are the most common health issues that power-loom weavers are experiencing. Also, airborne dust exposure exposes power loom workers to illnesses, allergies can create respiratory disease known as byssinosis.

Question area II: How do the surroundings and working conditions affect how a power loom operates?

Power-loom workers consuming dust with diseases, allergies, and poisonous compounds that cause Byssinosis. Additionally, threads, dangerous chemicals, long duration of labour hours, noise pollution, can cause hand and

leg pain and repetitive injuries including wrist, neck, shoulder, and knee. Weavers face several occupational hazards due to poor working conditions. So, with poor working condition can lead to slow down the production process.

Question area III: What steps can be taken to enhance power-loom weavers' health and wellbeing?

Recommendations for potential ways to lessen the health issues are consist of improved lighting and ventilation, regular health examinations, and job rotation. In order to lower the incidence of musculoskeletal illnesses, the study also suggests implementing ergonomic interventions, such as using the appropriate tools and equipment to improve posture and working condition which will be necessary in order to reduce their exposure to potentially harmful substances. Also, its recommended that initiatives for health awareness and education to be undertaken in order to teach members the value of upholding proper cleanliness and health habits.

5. Tools & Analysis Utilising primary data, methods such as tabulation, graphical representation, and percentage calculation have been applied to derive the result. The response from the respondent have been expressed in percentiles within the entire selected sample size.

6. Data Analysis and Interpretation

Table 1. General profile of Female weavers

Age wise distribution of Female weavers

Age	No. of Respondents	Percentage
0-14	35	23%
15-29	45	30%
30-59	50	33%
60 & above	20	13%
Total	150	100

Table 2. Marital status of Female weavers

Marital Status	No. of Respondents	Percentage
Married	90	60%
Un-married	40	26%
Widow	20	13%
Total	150	100

Table 3. Educational status of Female weavers

Educational Status	No. of Respondents	Percentage
literate	70	46%
Illiterate	80	53%
Total	150	100

Table 4. Socio-Economic condition of Female weavers

Economic factors that compelled weaving

Causes	No. of Respondents	Percentage
Poverty	30	20%
Low- income	40	26%
Unemployment	60	40%
Family burden	20	13%
Total	150	100

Table 5. Health issue faced by Female weavers

Name of disease	Nature of work	No. of Respondents	Percentage
Back pain	Sewing	25	16.6%
Leg pain	Beam threading	15	10%
Joint pain	Loading in spinning	23	15.3%
Chest pain	Guiding in warping	10	6.6%
Shoulder pain	Warping thread	13	8.6%
Respiratory Disease	Thread dusting	10	6.6%
Tuberculosis	Weaving	5	3.3%
Asthma	Ironing	7	4.6%
Headache	Weaving	10	6.6%
Eye sight	Cutting & sewing	15	10%
Skin disease	Chemical Interaction	10	6.6%
Deafness	Noise pollution	7	4.6%
Total		150	100

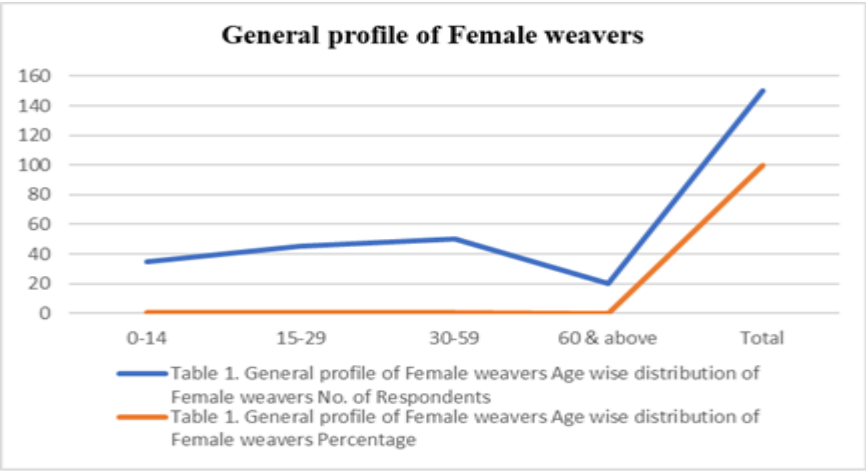

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Table 1 and figure 1 shows the general profile of female weavers connected to operational work in power-loom industry. After analysis its been observed that these female weavers have been categorised into four distinct age categories as per the different age group. These analysis reveals that 23% of respondents falls under 0-14 age group whereas 30% are from 15-29 age group & 33 percent of weavers falls under 30-59 age group while 13 per cent weavers are from above 60 years category. This leads to clarify marrital status of female weavers. 60 per cent of female weavers are married whereas 26% are still un-married and 13 per cent are female who are widow. This shows early marriages are common among them.

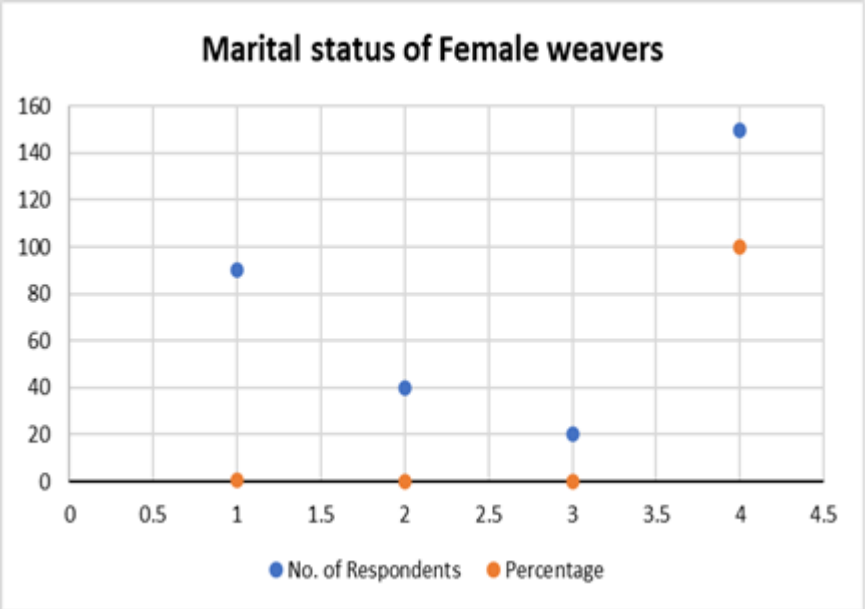

Fig 2. Marital status of female weavers. Another table 2 and figure 2 depicts about the marital status of female weavers. The socioeconomic standing of these weavers is revealed by their early marriages. According to the analysis, these weavers were experiencing difficult financial circumstances; as a result, they entered into matrimony and began working in the power-loom industry.

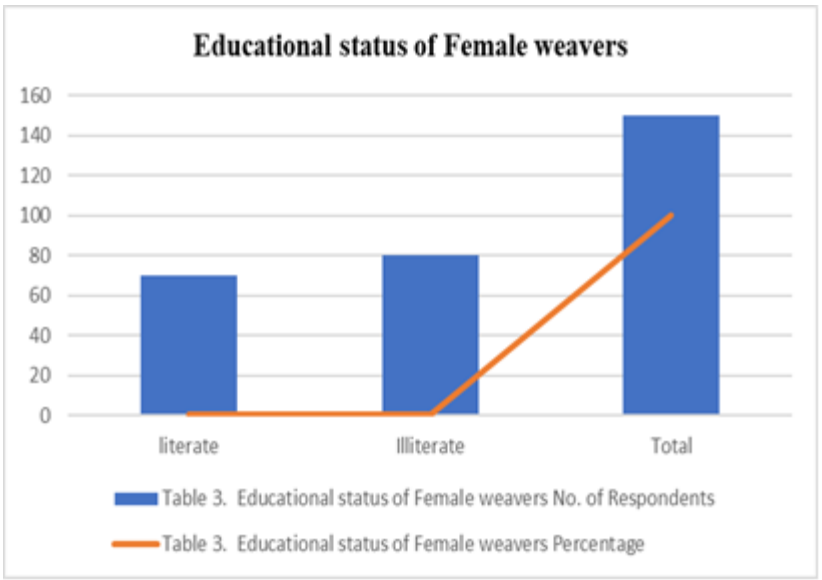

Fig 3. Educational status of female weavers. Table 3 and figure 3 analysis about the educational status of female weavers. One of the primary strategies for escaping the detrimental cycle of poverty is through education. It is observed during survey that 46 per cent of female weavers were literate while 53 per cent of weavers were illiterate. The high illiteracy rate among them is a result of their economically disadvantaged backgrounds; Although these weavers aspire to provide an education for their children so, they enrol their children in schools to further their education.

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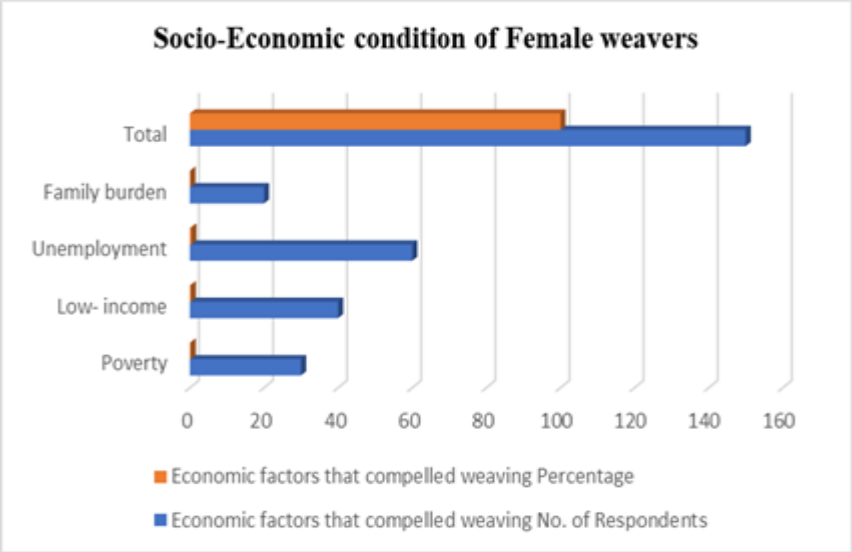
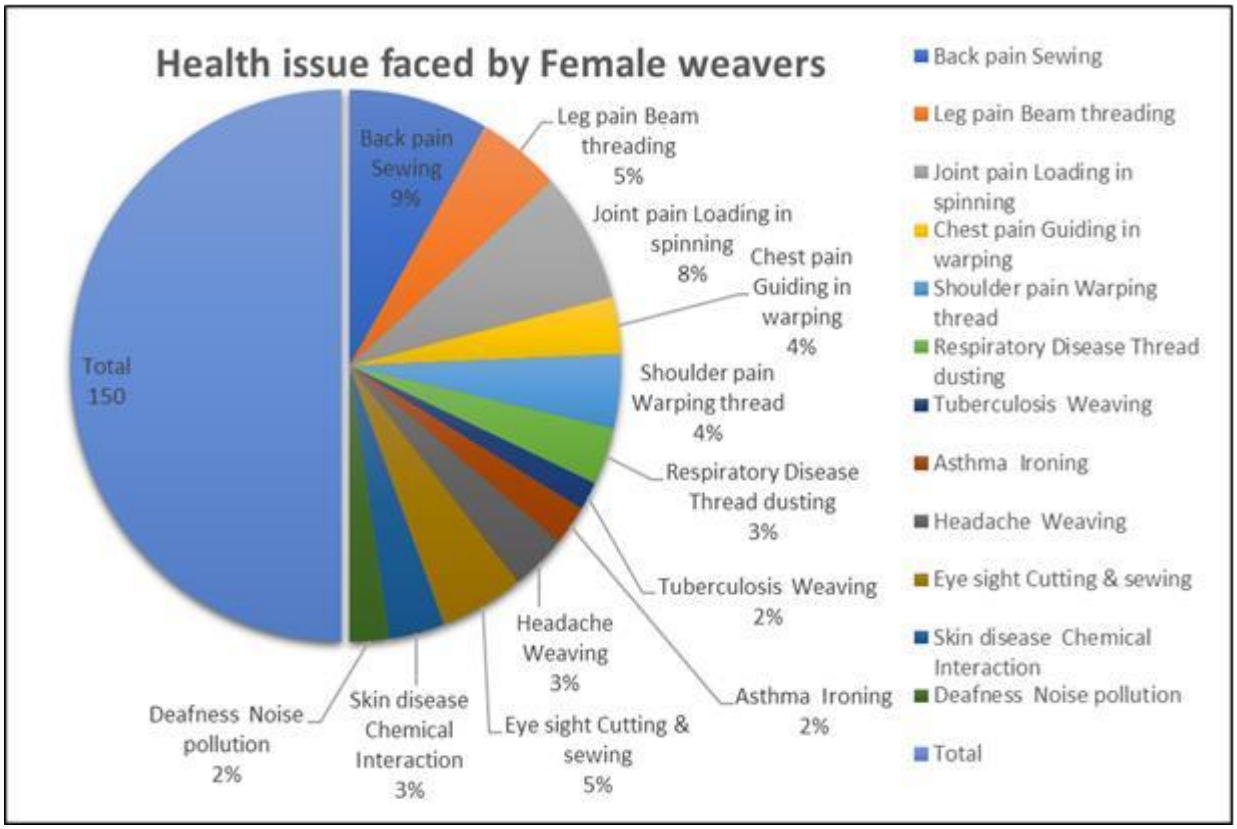


Table 4 and figure 4 shows an overview of female weavers suffering from poor socio-economic condition. The contributing variables that compelled female weavers to labour are poverty 20 per cent, low-income 26 per cent, unemployment 40 % and family burden 13%. A lack of education is one of the contributing factors to the poor economic conditions, which prevented these female weavers from finding alternative employment. A fundamental necessity for human welfare is the possession of a residence, whether it be a privately owned or rented house. An investigation revealed that a considerable number of weavers reside in the kaccha domicile. The reason given is that they were unable to afford a decently rented home due to their low income.



The data in **Table 5 and Figure 5** illustrate the proportion of female weavers who reported experiencing discomfort in various regions of the body while performing this occupation**.** This figure depicts the health issues faced by various female weavers during work in the power-loom industry. During the investigation, most of the weavers agreed, saying 16.60 per

cent are experiencing pain in their back portion of the body, 15.30% of female weavers are suffering from joint pain due to loading in spinning work, leg pain, loss of eye sight, and diseases related to skin. Out of the total selected sample, 10 per cent of female weavers are suffering. Due to warping thread, 8.60% of female weavers are suffering from shoulder pain. 6.60% of female weavers are suffering from respiratory disease due to thread dusting, and 3.30% of weavers are suffering from tuberculosis disease due to the processes involved in weaving. The investigation truly defined that 4.60 percent of female weavers are experiencing work-related diseases such as asthma due to humidity caused by ironing the fabrics. Chest pains are common among female weavers as they are involved in heavy processes such as guiding and warping. 6.60 per cent of females suffer from chest discomfort. As a result of the severe noise pollution generated by the power-loom industry, 4.60 per cent of the selected sample of female weavers are deaf or have a diminished hearing capacity.

7. Conclusion

The findings of this research confirmed that the health of female power-loom operators was significantly compromised due to improper body postures and heavy workloads. The above analysis points out that female weavers from Gaya and Bhagalpur power-loom having poor economic condition. As a result of their low socioeconomic status, these weavers endure a variety of occupational health problems, and it has been also observed that the female labour force participation rate has been declining since past few years. The persistent decrease in female participation can be primarily attributed to the growth of health concerns and the government's lack of concern for these ergonomic conditions. Immediate action is necessary on the part of the government to address the rising level of occupational health diseases and the decreasing quality of working conditions.

8. Declaration of competing Interest

The author certifies that there is no competing interests with regards to this study.

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