



# Understanding digital sweatshops: A qualitative investigation of workers' perspectives

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## Abstract

Digital sweatshops represent exploitative digital workplaces where individuals are compelled to work long hours under high demands for minimal compensation. This study employs in-depth, semi-structured interviews with digital workers to explore digital sweatshop operations' challenges and adverse aspects, mainly focusing on ethical considerations. The collected data were transcribed and analyzed using grounded theory methodology. The findings highlight three key themes: conditions mitigating factors, organisational factors, and work environment factors, all of which contribute to the persistence of digital sweatshops. The study advocates for comprehensive labour laws, education and advocacy for digital employees, mental health support, transparency and accountability, skill development, career advancement, and ethical business practices. These recommendations are intended to help governments and organizations create a fair and ethical digital workplace, prioritizing workers' rights and well-being.

**Keywords** Sweatshop · Labour · Digital sweatshops · Ethics · Employees

## Introduction

Contemporary manifestations of sweatshops, conversationally referred to as “digital sweatshops,” typically engage young individuals in internet-based employment. These establishments are also known as “electronic sweatshops” or “technological

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sweatshops,” where the execution of tasks is mediated by digital platforms (Boersma & Nolan 2022, Organizational Factors; D’Cruz & Noronha, 2007; Giousmpasoglou et al., 2023; Hendershott & Wright, 1993; Hickok & Maslej, 2023; Melé, 2014; Robinson & Morley, 2007; Zwolinski, 2007). In recent years, the term “digital sweatshop” has emerged as a subset of digital labour in the context of poor working conditions, low pay, and minimal worker protections (Casilli, 2017; Cherry, 2015). “Digital sweatshops” are a high-tech version of the crowded, low-paying factories that were infamous in the past (Ticona, 2022). The term “digital sweatshop” thus refers to the oppressive working conditions that online workers can experience, regardless of the actual space in which they work, with long hours, low pay, no job security, and few rights (Du et al., 2024; Fowler et al., 2023; Freeman et al., 2020; Wallis et al., 2013). These conditions can exist even when people work from home.

Digital sweatshops are frequently populated by workers in low- and middle-income countries (LMICs) with insufficient labour regulations and limited enforcement mechanisms, similar to conventional sweatshops (Elbanna & Idowu, 2022). The individuals in this situation consistently allocate substantial amounts of time amidst challenging conditions to engage in digital activities and endeavors (Alam et al., 2022; Powell & Zwolinski, 2012; Richard, 2023; Wu, 2023; Zwolinski, 2007). The circumstances include diminished job stability, inadequate remuneration, and insufficient protections for workers. Only small percentages of digital workers in developing countries have access to health insurance (43%), retirement benefits (23%), unemployment protection (9%), disability insurance (7%), or employment injury protection (18%) (ILO, 2021, p.176).

Previous literature has shown that some multinational corporations exploit workers in developing nations by using sweatshops. Apologists have sought to justify these practices as necessary for boosting economic growth (Berkey, 2021; D’Cruz & Noronha, 2007; Ettlinger, 2017; Snyder et al., 2008; Zwolinski, 2007). They have argued that traditional sweatshops have been an unavoidable component of economic progress (Arnold & Bowie, 2003; Kates, 2019; Powell & Zwolinski, 2012; Preiss, 2014). This is not our stance. Focusing on digital sweatshops, we argue that it is necessary to substitute the “sweatshop” elements with arrangements that meet ethical criteria while also being economically viable in the long term (Montiel et al., 2021; Weiler et al., 2020).

Many studies have investigated how digitalization affects work (e.g., Graham et al., 2017; Rani & Furrer, 2021), but qualitative studies of the real-life experiences of people who work in digital sweatshops are rare. Gray and Suri (2019) examined the human impacts of the use of artificial intelligence, machine learning, and other digital technologies to automate and manage work. They analyzed how these “computer methods” and algorithms have created a new class of workers who perform digital piecework, often under precarious conditions. Van Doorn (2017) analyzed how the interconnected roles of digital platforms, labour, and capital entail exploitation and inequality within the gig and on-demand economies.

Our study analyzes interview data to understand how workers make sense of and deal with working in digital sweatshops. We build on new research that puts labour rights and worker experiences and perspectives at the centre of the study of platform economies (Ticona, 2022). Our qualitative study adds human insights to the existing

literature on digital labour by analyzing and situating the perceived vulnerabilities of young sweatshop workers in the context of larger structures and trends. We believe that it is essential for developers or framers of policies supporting fair work arrangements to obtain, record and understand workers' stories.

The global economy, consumer demand for low-cost products, and weak regulatory and enforcement frameworks have kept digital sweatshops alive (Jasrotia et al., 2023). By improving understanding of digital sweatshops, researchers could provide motivation for lawmakers to raise public awareness and transform digital sweatshops into more benign and sustainable arrangements. Through qualitative research, the current study seeks to promote global employee ethics and ultimately help to eliminate sweatshop labour practices.

## Background literature

Sweatshops originated during the era of industrialization, which was marked by the extensive use of factory-based manufacturing techniques. The term “sweatshop” originally referred to workshops with difficult working conditions, such as high temperatures and poor ventilation (Abländer, 2021; Giousmpasoglou et al., 2023; Gregson & Quinlan, 2020; Wu & Sheehan, 2011). However, the scope of conceptualization of this phenomenon grew over time to include all types of industrial establishments where workers faced poor earnings, long working hours, and bad working conditions (Papadopoulos & Ioannou, 2023). Large-scale migration to industrialized countries during the mid-to-late nineteenth century led to the widespread use of sweatshops for cheap labour. Over 4.5 million Europeans immigrated to the USA between 1850 and 1880, primarily to industrial areas without substantial wage and labour protection laws (Portes & Rumbaut, 2014; Smith, 2006). Factory owners exploited vulnerable immigrant communities facing language problems and unemployment as immigration grew urban hub populations (Friedlander, 1987; Gouda, 1995). Due to their poverty and poor bargaining power, immigrant laborers were often employed in cramped, dangerous workshops and paid low wages (Daniel, 1990; Takaki, 2009). Sweatshops were an expedient way to maximize output from cheap immigrant labour with few constraints by 1900 when over 13 million European immigrants lived in the USA (Bender et al., 2004). Thus, the large late nineteenth-century migration created both a supply of immigrant workers seeking work and a demand for cheap labour that sweatshops quickly met, with little regulation (Gregson & Quinlan, 2020; Siddiqi, 2020; Vallois, 2022).

This traditional sweatshop model has persisted into contemporary times. Apologists for sweatshops have argued that these enterprises contribute to economic growth in less developed countries, generate employment opportunities that would otherwise be lacking (Kates, 2019; Snyder et al., 2008; Zwolinski, 2007), and help people learn valuable skills (Thompson & Vincent, 2010). Critics argue that sweatshops exploit workers by disrespecting their right to a safe working environment and equitable remuneration (Lloyd et al., 2020; Marsden et al., 2021; Min et al., 2019). Research has shown that sweatshops can harm various aspects of social and economic life, such as health, safety, wages, job security, and skill development

(Landsbergis et al., 2014). Workers in sweatshop conditions regularly encounter unjust treatment, such as meager earnings, absence of employment stability, and limited chances for career progression (Kadfak et al., 2023). Individuals employed in sweatshops are frequently compensated below the minimum wage (Selwyn et al., 2020). Sweatshops continue to exploit vulnerable workers, providing inadequate pay and no job security (Palpacuer, 2008). They prey on marginalized and vulnerable populations, such as migrant workers, students, and individuals from low-income backgrounds (Chew, 2022). These individuals frequently face limited opportunities to explore other job options, leaving them vulnerable to exploitation.

The National Child Labour Committee and labour movements have been instrumental in campaigning for reforms and regulations to improve sweatshop workers' working conditions and compensation in places such as Bangladesh and the Democratic Republic of the Congo (DRC) (Bair et al., 2020; Sovacool, 2021). Legislative efforts have been undertaken by governments and regulatory bodies in Austria, Finland, France, Germany, Greece, Italy, India and Lithuania to set minimum wage standards, limit working hours, and prevent the hiring of minors (Aloisi & De Stefano, 2022; Bruttel, 2019; OECD, 2022).

Collaborations between the Fair Labour Association (FLA) and firms in their supply chains aim to improve working conditions. Such arrangements involve the FLA operating as a monitoring organization (Berkey, 2021; Gilbert & Huber, 2023; Outhwaite & Martin-Ortega, 2019). It is commonly observed that industrialized nations tend to possess more stringent labour regulations and robust enforcement mechanisms, thereby rendering the operation of sweatshops more challenging within their jurisdictions (Fine & Bartley, 2019). We consider that it is imperative for international organizations and certifying bodies to adopt proactive measures to enhance working conditions and safeguard workers' rights and thereby detoxify what are currently sweatshop establishments (Outhwaite & Martin-Ortega, 2019).

Digital transformation has resulted in the creation of new contexts for exploitation within the area of internet-based labour, in physical circumstances that differ from the classic definition of sweatshops, associated with traditional factory settings (Caruana et al., 2021; Davis & DeWitt, 2021; Kassem, 2023). Corporations that hire young people for internet-based occupations may nonetheless expose them to similar challenges, such as low pay, long working hours, and terrible working circumstances that are reminiscent of their forefathers' trials (Dumbe & Mutaru, 2022; Handfield et al., 2020; Wickramasingha & Coe, 2022).

Some digital platforms and organizations that employ remote workers provide transparent information about their labour practices, compensation systems, and working circumstances (Giousmpasoglou et al., 2023). However, others entail adverse and exploitative labour conditions and inadequate compensation. The COVID-19 pandemic worsened the problem by restricting employment due to lack of demand and lockdowns, delaying compensation, and exacerbating already poor working conditions (Anner, 2022). Concerns about digital, electronic, or technical sweatshops, where companies take advantage of young people by hiring them for work on the Internet, need to be investigated through qualitative research methods.

Not all digital labour platforms could reasonably be categorized as digital sweatshops, but many could be. The number of digital labour platforms increased from

142 in 2010 to over 777 in 2020, with significant concentrations in the USA, India, and the UK (ILO, 2021, p.19). Each digital labour platform employs between 50 and 800 people directly (internal employment) and together they have around 2.4 million registered skilled workers globally (external employment) as of January 2021 (ILO, 2021, p.90). Despite efforts to promote flexibility and different job opportunities, microtask platforms may indirectly induce inequality and labour exploitation, manifesting elements of digital sweatshops (Bucher, 2024; Deng & Joshi, 2016; Ettlinger, 2017; Ibourk & Elouaourti, 2023).

One type of digital labour involves content moderation. Over 130,000 people work as content moderators around the world. Their jobs include things like reviewing harmful AI training data, which can be bad for their mental health and well-being because they see upsetting content (Shepherd et al., 2021).

We consider that freelance workers are excluded from the notion of a digital sweatshop as they engage their free will, and no strict employee-employer relationship exists (Fish & Srinivasan, 2012; Wood & Lehdonvirta, 2021). Freelancers independently generate digital goods and services (Soriano, 2021), and they often work outside the hierarchical and frequently oppressive arrangements in traditional sweatshops (Felstiner, 2011). Furthermore, freelancers have the flexibility to terminate their contracts at any time (Dex et al., 2000; Gold & Mustafa, 2013; Norbäck & Styhre, 2019).

Digital sweatshops are frequently enabled by online platforms, through which workers produce digital goods and services under conditions of exploitation and absence of labour protections (Casilli, 2017; Gandini, 2021; Hajiheydari & Delgosh, 2024; Malik et al., 2021; Martin et al., 2016; Xie et al., 2023). Digital workplaces, linking virtual control centres with online platforms exercise a high level of digital and algorithmic control over the labour process, dictating duties, assessing performance, and determining compensation (Duggan et al., 2020; Möhlmann et al., 2021; Waldkirch et al., 2021).

Concerns about sweatshops and their adverse impact on workers have been intensified by the emergence of online labour among younger individuals (ILO, 2021, p.22). Companies hire young people for internet-based work, generating concerns similar to those raised by traditional sweatshops (Cohen, 2015; Graham et al., 2020; Mezzadri, 2022). Young people may be forced to take on risky digital work because they need to make money quickly to support themselves (Cockayne, 2016). This group needs more skilled support systems like decent work opportunities, skills development and encouragement for Youth Entrepreneurship or self-employment (ILO, 2012). Analyzing the experience of this theoretically important and at-risk group will help us understand where social, legal, economic and physical securities are lacking (Cockayne, 2016; Palfrey & Gasser, 2008). We hope that our analysis can trigger more regulation over this growing field of industrial organization (Blustein, 2011; ILO, 2021).

Previous studies have emphasized the need for productive employment to improve individual well-being, with a focus on task-related characteristics as key motivational elements for workers in micro-tasking situations (Alam & Sun, 2023; Bunjak et al., 2021; Gundert & Leschke, 2023; Umair et al., 2023). However other studies have identified digital work as a mere tool to serve present-day techno-capitalism,

distinguished by the dominance of corporations and the utilization of technological innovation for exploitative purposes (Maharawal, 2022). Studies have also critiqued techno capitalism as a source of labour exploitation (De Vaujany et al., 2021; Fehrenbacher & Patel, 2020; Heberle et al., 2020; Nazzal et al., 2024; Wyatt et al., 2022).

The concept of “digital sweatshop” frames digital workers’ working conditions experiences as an ethical issue that needs to be dealt with (Casilli, 2017; Du et al., 2024; Gol et al., 2019; Soriano & Cabañes, 2019). Those working in digital sweatshops are challenged by complex software systems and unstable internet connections, while receiving inadequate technical assistance (D’Cruz et al., 2022). These factors can hinder employee productivity and increase workload (Shipman et al., 2023). Data entry, graphic design, and online customer service are just a few examples of the digital occupations where employees can face challenging working conditions (Casilli, 2017; Martin et al., 2016; Wallis, 2013). These potentially adverse conditions can not only affect workers’ physical and mental health, but also diminish job satisfaction and work-life balance (Brogan, 2022; Petkovski & Rexhepi, 2023; Wilson, 2021). The rise of digital sweatshops, which exploit people through technology, poses significant challenges to young and vulnerable workers (Bernhardt et al., 2023; Deng et al., 2016; Du et al., 2024; Ransbotham et al., 2016).

The current study investigates three Research Questions:

- RQ.1: How do people who work in digital sweatshops perceive and feel about their jobs, and how do they learn to deal with them?  
 RQ.2: What organizational and management factors perpetuate exploitative work practices in digital sweatshops?  
 RQ.3: How can labour rights and standards be protected globally for people working on digital platforms?

## Research methods

### Methods, sample, and data collection

The present study employed semi-structured interviews to examine the ethical concerns and considerations relating to the involvement of young individuals in online labour within the domain of digital sweatshops. The researchers employed grounded theory methodology (Glaser & Strauss, 1999), to develop ideas based on evidence (Locke, 2002).

Positive, snowball sampling was used to identify a sample of digital workers. We only interviewed those who granted informed consent to participate in a full interview about their personal experiences. The study’s goals, interview length, questions, and participants’ right to privacy were explained to them. It took four months, from December 2022 to March 2023, to gather and analyze the data. As part of the preparations, semi-structured and open-ended interview protocols were constructed, potential participants were chosen.

Understanding interviewees' thoughts and feelings became easier as we talked to more of them (Guest et al., 2020; Hennink & Kaiser, 2022). We sought to ask open-ended questions, allowing participants to freely discuss any topic they wished. We began with basic questions like, "Could you please explain your experiences as a digital worker? What are your primary responsibilities and tasks in your position or work?" This approach aligns with Malterud and Bjorkman (2016) concept of 'information power,' as a source of rich understanding of complex subjects. Interviews continued until data saturation, where no new themes were emerging (Guest et al., 2006). The respondents started giving repeated answers after 14 interviews and we stopped after 17 interviews, deeming the sample size to be sufficient. The data were carefully reviewed over the next 60 days, and a section on the study findings was then written.

### **Triangulation for reliability and validity**

A triangulation method was used to make the data more reliable and valid. One aspect involved getting experts in the field to confirm the findings (Jasrotia et al., 2019; Kamila & Jasrotia, 2023). Two experts in ethics and online work reviewed the written data. Also, three additional internet-based workers, who had not been included in the interviewee sample assessed and put the transcripts in context from their perspective, thereby helping to remove bias in reporting the findings.

### **Study participants**

This study targeted people aged 18 to 30 because online outsourcing sites prefer to hire "digital natives" who have been good with technology since childhood (Palfrey & Gasser, 2008; Spencer, 2017). The respondents in Table 1 were working in various fields, such as data entry, graphic design, customer service, back-office support, and research, and were operating in diverse industries. Some were working remotely from home and others in shared physical environments. Some were freelancers, who as noted above were not regarded as sweatshop workers. They were all digital workers from India with at least six months of experience working online and were all working on an online platform, connecting to Western customers and clients. However, specific employers cannot be named to protect privacy. These included small contractors as well as big sites used by people all over the world.

The respondent profile is indicated in Table 1. They were assured that their personal and professional information would be kept private.

### **Data analysis**

The audio recordings were transcribed verbatim, and the transcripts were then analyzed for themes. The interview data revealed several themes, providing insights into the participants' perceptions of and experiences with sweatshops in the digital work environment.

**Table 1** Respondent profiles

Respondent no.	Organization type	Job title	Gender	Age
1	Conventional Company	Data Entry Work	Male	19
2	Conventional Company	Data Entry Work	Female	18
3	Conventional Company	Graphics Design	Female	20
4	Digital Platform	Online Customer Service Representative	Female	23
5	Digital Platform	Online Customer Service Representative	Male	20
6	Digital Platform	Animation Support	Female	19
7	Conventional Company	Back Office Support	Male	23
8	Conventional Company	Back Office Support	Female	26
9	Conventional Company	Back Office Support	Male	30
10	Digital Platform	Content Marketing Support	Male	24
11	Digital Platform	Content Marketing Support	Female	22
12	Digital Platform	Financial Analyst Support	Female	22
13	Digital Platform	Business Analyst Support	Male	25
14	Digital Platform	Customer Support in the Financial Sector	Male	27
15	Digital Platform	Trade Advisor Associate, Financial Sector	Male	25
16	Digital Platform	Typing Associate, Legal Sector	Male	23
17	Digital Platform	Academic and Teaching Associate, Ed-tech Sector	Female	22

## Coding

Corbin and Strauss (1990) presented three methodological steps for thorough data analysis. The first step, “open coding,” entails carefully looking at all the transcribed material. Each line is looked at carefully and coded on its own. Two researchers coded each interview and compared their results to establish reliability. We thoroughly studied every line of the transcribed interviews during the early stages of our study to find the underlying meanings and to assign labels to specific portions of text based on their semantic content, reflecting the interviewees’ ideas and emotions.

The following step, axial coding, entailed developing linkages between the various categories. The constant comparison method detected similarities and differences within the dataset. Data representing an equivalent notion were given the same conceptual name. When phrases like “impact on my health” and “social isolation is mentally demanding” were first written out in plain English, key ideas began to emerge naturally. A set of 18 categories was developed by organizing the open coding procedure into axial codes. Finally, these axial codes were combined into big themes like “Conditions Mitigation Factors” (Fig. 1).



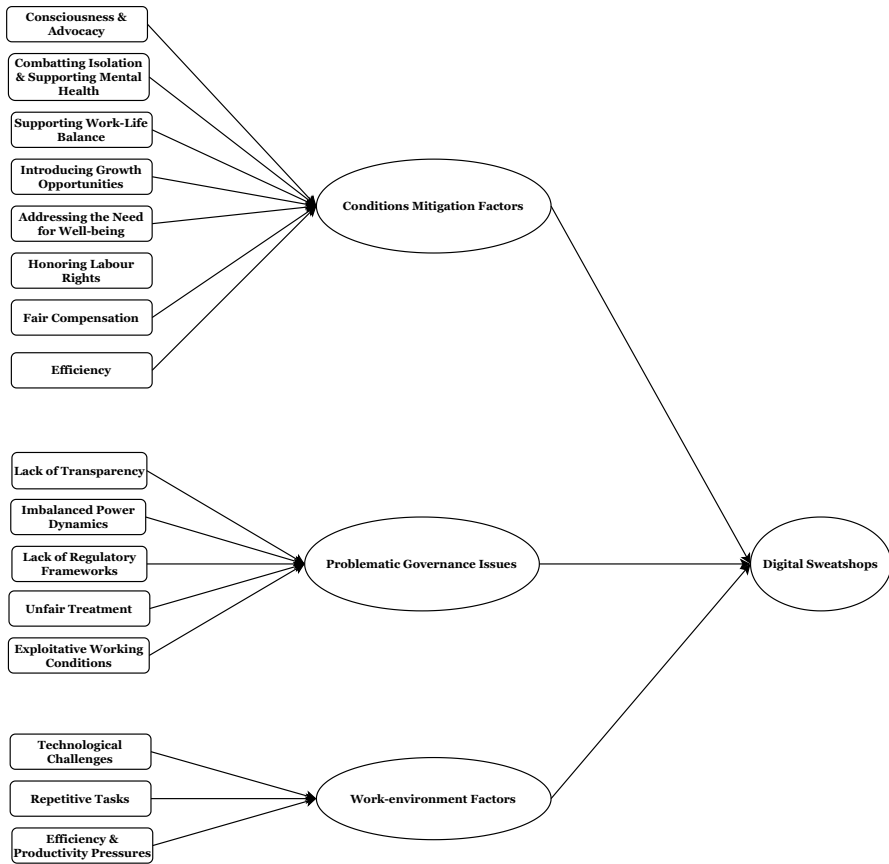


Fig. 1 Conceptual model formulated from in-depth qualitative interviews

## Findings and discussion

### Conditions mitigation factors

In our study, the condition mitigation factors constitute radical measures that would address worker experiences and frustrations in digital work. **“Conditions Mitigation Factors”** would be about addressing and improving broader issues affecting employees’ well-being and rights. These would comprise consciousness and advocacy for better rights, managing isolation and mental health impacts, achieving work-life balance, providing growth opportunities, ensuring fair wages and labour rights, and offering job security. These aspirational factors are essential for creating supportive and sustainable work environments that prioritize employee well-being and satisfaction.

## Consciousness and advocacy

One major issue is the lack of awareness of and advocacy against sweatshop conditions. Without awareness and efforts to address the problem, the cycle of poor working conditions continues and perpetuates itself. Many workers are unaware of their rights and/or of the external support available to them. Advocacy for change could help them fight for fair wages, better treatment, and improved working conditions.

**Participant 2:** *“I deal with these conditions by trying to negotiate for better pay and seeking support from digital workers or worker **advocacy** organizations.”*

**Participant 4:** *“Many workers don’t even know they’re being mistreated. We need more awareness and advocacy to fight for our rights and better working conditions.”*

## Combatting isolation and supporting mental health

Many workers in digital environments experience social isolation. The lack of interaction with colleagues can lead to feelings of loneliness and depression. Interviewees noted that isolation negatively impacts mental health, making it harder for workers to stay motivated and productive. Addressing isolation through support networks and mental health resources is essential.

**Participant 3:** *“Working alone all the time can be really isolating. Without interaction with colleagues, it feels lonely and depressing. This isolation seriously affects my mental health and motivation.”*

**Participant 11:** *“My overall **mental health** and well-being have been impacted by the continual pressure to perform and achieve deadlines.”*

## Supporting work-life balance

Maintaining a healthy work-life balance is challenging in digital jobs. Workers often feel pressured to stay connected and available at all times. This constant connectivity can lead to burnout and stress. Interviewees stressed the need for clear boundaries between work and personal time to prevent burnout and improve overall well-being.

**Participant 1:** *“It’s tough to maintain a balance between work and personal life. I’m always connected and feel like I need to be available 24/7. This constant connectivity leads to burnout and stress.”*

**Participant 10:** *“There have been times when I have felt **overburdened** with work, had to stay up late to meet deadlines, and lacked a sense of **work-life balance**.”*

**Participant 13:** *“My general well-being suffered due to the continual **pressure** to succeed and the lack of a **work-life balance**.”*

## Introducing growth opportunities

Digital sweatshops often offer limited opportunities for career advancement. Workers are stuck in repetitive roles with no clear path for professional development.

Interviewees expressed frustration over the lack of growth opportunities, which affects their motivation and job satisfaction. Providing training and development programs could help workers advance in their careers.

**Participant 3:** *“In my digital work, there are hardly any chances to move up or learn new skills. I’m stuck doing the same tasks with no room for professional growth. This lack of opportunities is really frustrating.”*

**Participant 4:** *“We are getting paid less than the minimum wage, being overly watched or monitored, and having **little possibilities for career advancement.**”*

**Participant 8:** *“Unlike traditional work, it frequently offers less opportunity for career advancement, job security, and benefits.”*

### Addressing the need for well-being

The overall well-being of workers is significantly affected by poor working conditions. Long hours, low pay, and high stress take a toll on physical and mental health. Interviewees pointed out that improving working conditions can lead to better health outcomes and a higher quality of life for workers. Efforts to enhance well-being should focus on reducing stress and ensuring fair treatment.

**Participant 6:** *“The poor working conditions have a huge impact on my overall well-being. Long hours, low pay, and high stress levels take a toll on my physical and mental health. Improving these conditions would make a big difference in my quality of life.”*

**Participant 10:** *“My well-being has been negatively impacted by this, leading to sleep deprivation and a disturbed work-life balance. My general **health and well-being** have been badly impacted by the blurred lines between work and home life and the pressure always to provide.”*

**Participant 13:** *“My online employment has **challenging working conditions**, including **short deadlines**, a focus on data analysis, and problem-solving. **Stress from the workplace** has caused **insomnia**, which has **harmed personal relationships.**”*

### Honoring labour rights

Many workers in digital environments lack basic labour rights. They often work without contracts, benefits, or job security. Interviewees emphasized the need for stronger labour rights and protections to ensure fair treatment. Advocacy for labour rights is crucial in providing workers with the security and benefits they deserve.

**Participant 1:** *“People with less experience are frequently exposed to exploitation to obtain cheap labor. Certain technologies, platforms, and industries, such as online gig platforms, demonstrate a higher susceptibility to the prevalence of digital sweatshop conditions. These businesses depend on a substantial workforce **susceptible to exploitation** because of **inadequate regulation** and a large quantity of existing labor.”*

**Participant 9:** *“Many of us work without contracts, benefits, or job security. We need stronger labor rights and protections to ensure fair treatment. It’s crucial for us to have the security and benefits we deserve.”*

### Fair compensation

The issue of low wages exacerbates the problem of digital sweatshops, leading to significant economic repercussions. It is unfortunate that individuals employed in sweatshops are frequently compensated below the minimum wage, despite their crucial role in the digital economy (Selwyn et al., 2020). Low wages and economic conditions are interconnected and have prominent role in enhancing digital sweatshops. Companies prioritize cost-cutting measures to enhance their profitability, which negatively impacts the well-being of the employees.

**Participant 2:** *“I have received low wages and unfair treatment. With the limited wages it is very difficult to survive for me with my family. I deal with these situations by trying to negotiate better pay from other organisations working in the same domain”.*

**Participant 14:** *“Companies often prioritize cost-cutting measures to enhance their profitability. While this might be good for their bottom line, it negatively impacts the well-being of their employees. By cutting costs, they usually reduce wages or avoid paying fair wages altogether.”*

### Efficiency

Inefficient organizational practices appear to be common in digital sweatshops. Interviewees mentioned that poor management and disorganized workflows were leading to wasted time and resources. This inefficiency was frustrating workers and was perceived as reducing overall productivity. Improving organizational efficiency is crucial for better work conditions.

**Participant 6:** *“The way things are managed here is chaotic. It wastes a lot of our time and makes our jobs harder.”*

**Participant 8:** *“The poor management in in our organization waste valuable time and resources, leaving us feeling frustrated and less productive. Streamlining these practices is essential for improving our work conditions.”*

### Problematic governance issues

Interviewees highlighted significant problematic governance issues within digital sweatshops, comprising lack of transparency, imbalanced power dynamics, absence of regulatory frameworks, unfair treatment and exploitative working conditions. These problematic factors contribute to worker concerns about exploitation and unfair treatment, emphasizing the need for institutional reforms to ensure transparency, fair treatment, and regulatory oversight in digital work environments.

### Lack of transparency

Sweatshop organizations typically were described as lacking transparency in their operations. This means that workers were not fully aware of policies, decisions, or practices that were affecting their jobs. Interviewees pointed out that this lack of transparency led to mistrust, confusion, and uncertainty about their roles and future in the company.

**Participant 3:** *“We are not told why certain decisions are made. This secrecy makes it hard to trust the management.”*

**Participant 10:** *“We’re kept in the dark about decision-making and policies, which breeds mistrust and uncertainty about our roles and future with the company.”*

### Imbalanced power dynamics

Power dynamics in organizations can be heavily skewed. Workers often have little say in decisions that impact their work. Interviewees expressed that this imbalance leads to exploitation and unfair treatment. This imbalance may create discriminatory practices and favoritism in decision-making processes. Addressing imbalanced power dynamics would foster a workplace culture that upholds fairness, respect, and equality.

**Participant 8:** *“We have no say in what happens. This power imbalance lets them exploit us easily.”*

**Participant 11:** *“We have no input in decisions that affect our work, and this power imbalance allows for exploitation and unfair treatment.”*

### Lack of regulatory frameworks

Many digital workplaces operate without clear regulatory frameworks. This absence of regulations allows exploitative practices to thrive. Interviewees highlighted that without proper rules and enforcement, workers’ rights are often ignored. Few countries have implemented wide-ranging labour laws and regulations to address the complexities and challenges of remote work and digital platforms (Rani & Furrer, 2021). Interviewees mentioned this absence of sound regulation. For example:

**Participant 1:** *“The expansion of digital sweatshops is prompted by several key factors like the lack of regulatory frameworks, imbalanced power dynamics, and the global pursuit of cheap labor.”*

**Participant 5:** *“There are no clear rules protecting us. Without regulations, we are often mistreated and our rights are ignored.”*

### Unfair treatment

Many workers face unfair treatment from their employers. This includes discrimination and being paid below the minimum wage.

**Participant 11:** *“I receive compensation below the minimum wage and encounter unfair treatment from people in ranks of authority.”*

**Participant 13:** *“I’m paid below minimum wage and face favoritism and discrimination from those in authority, which creates a hostile work environment and lowers morale.”*

### Exploitative working conditions

Interviewees referred to exploitative conditions, such as long hours, low pay, inadequate safety measures, and high pressure to meet tight deadlines. They indicated that these conditions were harming their physical and mental well-being.

**Participant 9:** *“We’re pressured to accept lower pay and poor conditions while meeting unrealistic targets, which takes a toll on both our physical and mental well-being.”*

**Participant 16:** *“They encourage us to accept lower pay and unfavorable conditions to compete. The pressure to meet high targets is relentless.”*

### Work-environment factors

Work-environment factors in our study comprise technological challenges, repetitive tasks, and efficiency and productivity pressures. These factors focus on the challenges and conditions impacting daily work life and productivity of employees.

### Technological challenges

Technological changes in digital sweatshops create significant stress. Workers must constantly learn to use new tools and software. This increases their workload and can lead to job dissatisfaction.

**Participant 9:** *“We always have to learn new software, which makes the job stressful and less satisfying.”*

**Participant 14:** *“Internet-based work can provide opportunities for individuals to work from anywhere and access a global job market, but the **constant connectivity and demands of customer support roles** can impact job satisfaction and personal well-being.”*

### Repetitive tasks

Digital jobs often involve repetitive tasks like data entry, content moderation, and transcription. These tasks can be boring and reduce job engagement. Over time, this monotony leads to decreased job satisfaction.

**Participant 2:** *“I typically deal with data sets on screen and perform repetitive assignments, which often makes me feel like I’m on autopilot, wearing me out considerably.”*

**Participant 15:** *“I regularly work with huge amounts of data and complete repetitive activities. It gets really boring.”*

## Efficiency and productivity pressures

Interviewees indicated that there is a strong emphasis on efficiency and productivity in digital sweatshops. They perceived that managers prioritize output over workers' welfare, tending to result in extended work periods, high stress, and decreased job contentment.

**Participant 3:** *“High levels of demand and oppression characterize the working conditions. We are pushed to work long hours without adequate rest to meet targets.”*

**Participant 7:** *“The intense focus on productivity means we’re pushed to work long hours with little rest, leading to high stress and decreased job satisfaction.”*

## Implications and conclusion

The study's findings offer an understanding of the various factors impacting the difficulties experienced by workers attached to digital sweatshops. These are places where workers are mistreated and do not get paid enough. Many factors are identified that may allow digital sweatshops to persist, such as lack of public awareness, and absent legal protections for workers.

We believe that people must recognize and speak out against digital sweatshops (Haines et al., 2023). Digital sweatshops are perpetuated by a lack of transparency, power imbalances, and absent legal frameworks (Howson et al., 2022). Inadequate implementation of operational protocols, substandard managerial methodologies, and insufficient coordination result in unfavorable labour conditions and diminished productivity. The inefficiencies adversely impact the quality of work and result in heavy workloads and impractical time limits for employees. Insufficient operational procedures and management frameworks impede employees' access to necessary resources and support, rendering them susceptible to abuse (Mieruch & McFarlane, 2022).

We believe that efforts to address digital sweatshop concerns must comprise implementing comprehensive labour laws, adopting employee-friendly corporate governance arrangements, and embracing supportive programs to improve workers' rights and safeguards. We hope that by raising awareness and taking collective action, concerned stakeholders (Table 2) can inspire movement towards a fairer and more ethical means of managing the digital workforce, such that workers' efforts and contributions are duly appreciated, and their rights are protected. Table 2 summarizes the study's implications.

It is important that policy makers should establish legal safeguards to ensure that the rights and well-being of digital workers are protected. Advocating for programmes that encourage ethical business practices and expand job opportunities globally can help create a fairer digital labour market. The study's results highlight several topics that need more investigation. It would be interesting to explore how different measures and methods can help eliminate digital sweatshops, identify which sectors and platforms allow and induce poor working conditions, and

**Table 2** Implications of the study

Implication	Description	Key stakeholder(s)
Policy and regulation	Protect workers' rights in the digital economy by enacting robust labour regulations	Government agencies, Labour unions, Policy makers
Education and advocacy	Ensure fair compensation, job security, and access to collective bargaining mechanisms Educate and raise the profile of digital workers so that they may effectively advocate for themselves Campaign for change and back organizations working to improve sweatshop conditions	Non-profit organizations, Educational institutions
Mental health support	Care for remote workers' emotional health and encourage them to maintain a work-life balance as a top priority Avoid further damage to employees' mental health caused by isolation and stress by fostering a positive work environment	Employers, HR departments, Mental health professionals
Transparency and accountability	Increase openness around pay, benefits, and working conditions in the workplace	Corporate management, Regulatory bodies
Skill development and career advancement	Stop the proliferation of digital sweatshops by making companies answerable for their treatment of employees Provide workers with an opportunity to gain experience and advance in their field	Employers, Training providers, Educational institutions
Addressing economic disparities	Facilitate digital workers' training and ongoing education Reduce the exploitation of vulnerable workers by addressing global economic inequality	Organizations, Governments, NGOs
Ethical business practices	Facilitate equitable business and broaden access to good jobs across the globe Employ moral business practices that put the needs of digital employees ahead of the company's bottom line Promote a culture that values employees by providing competitive pay, secure employment, and other benefits	Corporate leaders, Ethics boards, Shareholders



ascertain how legislation can best protect labour standards in the digital industry (LeBaron, 2021).

## Limitations and future research directions

This was a qualitative study on digital sweatshops that used grounded theory approaches. It provided valuable insights into the complex dynamics that drive the collaborative internationalization process and the prevalence of exploitative labour conditions. It is essential to recognize and deal with the limitations of the study. The small sample size of 17 people might have limited the variety of viewpoints, affecting how broadly the findings can be applied. Future research can be done on a larger sample size to better generalize the findings of the study, and researchers can also use the conceptual model derived from the study and use quantitative tools to establish causal relationships between various variables. Interpreting qualitative data subjectively can impact how the theoretical framework is developed. Grounded theory investigations were limited by time and financial constraints, which may have impacted the scope and depth of the research. Studying various forms of digital sweatshops and conducting cross-cultural research could help us understand the variations in working conditions among digital sweatshop workers. Table 3 provides detailed constraints and suggestions for future research.

Future studies should increase the number of people interviewed from a broader range of industries, tasks, locations, and platform types to learn more about the

**Table 3** Limitations and future research directions

Limitations	Future research directions
Sample size	To improve generalizability, a larger-scale study with a more diversified participant pool can be done
Lack of diversity in participants	More digital workers from various industries, ethnicities, and socio-economic backgrounds can be included
Self-reported data	A mixed-methods strategy that combines self-reporting with objective data validation measures can be used
Cross-sectional design	A longitudinal study can be implemented to investigate changes and trends in digital sweatshop conditions over time
Subjective nature of responses	Quantitative research can be conducted to understand digital sweatshop workers' experiences and perceptions
Limited geographical scope	Expand the study to cover a broader range of areas and countries to investigate regional differences in digital sweatshops
Data collection bias	Diverse data collection methods and sources can be used to reduce potential biases and boost data reliability
Reliance on internet communities	Collaboration with worker advocacy groups and unions can be done to grasp worker experiences better
No control group	To assess circumstances and uncover distinctive elements of digital sweatshops, include a control group of traditional laborers
Predominantly qualitative approach	Include quantitative tools to supplement qualitative data and provide a more comprehensive knowledge of the phenomenon

different kinds of digital sweatshop practices. For example, such research could include coders, freelancers, content moderators, micro workers, and people who work as online customer service agents in countries beyond India, such as the Philippines, Malaysia, and Kenya could help people learn more about the wide range of associated roles and experiences (Graham et al., 2017; Heeks et al., 2021; Tubaro & Casilli, 2019). It might be helpful to look at how algorithmic control, pay policies, and gig arrangements affect the risks and facts of sweatshops by comparing centralized platforms like Amazon Mechanical Turk to decentralized markets like Upwork (Kellogg et al., 2020; Ticona, 2022; Vallas et al., 2022; Wood et al., 2019). The current study gives some preliminary results. However, we need a more prominent and representative sample to thoroughly analyze digital sweatshop conditions across roles, sectors, geographies, and platform models to get more general and nuanced insights.

Additionally, an investigation of worker agency, resistance techniques, and the ethical implications of digital sweatshops would provide a more complete picture of workers' experiences. Investigating the effects of legislation and the role of gig economy platforms in guaranteeing workers' equitable treatment might aid in developing successful policies. We believe that through information power, future research can help to dismantle exploitative digital sweatshops and promote a fair and honest digital labour landscape by highlighting ethical factors.

**Author contribution** All authors whose names appear on the submission.

- 1) made substantial contributions to the conception or design of the work;
- 2) drafted the work or revised it critically for important intellectual content;
- 3) approved the version to be published; and
- 4) agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

**Data availability** Data will be made available on request from authors.

## Declarations

**Ethical approval** This article does not contain any studies with human participants performed by any of the authors.

**Conflict of interest** The authors declare no competing interests.

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