Delhi’s unregulated e-waste markets and the marginalised women workers who bear its cost

Connecting the Unconnected is a monthly column by the Digital Empowerment Foundation (DEF) that explores how technology can drive inclusion and governance in India. The column focuses on how the digital divide impacts communities differently and advocates for equitable, citizen-informed solutions that ensure technology empowers rather than excludes.

Wearing a dust-laden blue outfit, Shabnam* squats on the cold concrete floor of a dimly lit room in Delhi’s Seelampur, a heap of tangled wires and broken circuit boards in front of her. Using bare, blackened hands, she strips copper wires from discarded cables, her fingers moving quickly but mechanically through the toxic debris of e-waste. Around her, other women sit cross-legged on stained mats, sorting, burning, and breaking apart tons of wires, feeding a sprawling, informal recycling economy that is hidden in plain sight.

Standing nearby, Danish*, the workshop owner, keeps a watchful eye on the women, swiftly hijacking the conversation when any of them attempt to speak. When asked about the nature of their work, he cuts in dismissively, “This isn’t work that requires brains, that’s why the uneducated ones do it.”

His remark isn’t just a dismissal of the labour’s value but an exercise in control, positioning himself as the voice of the workshop while silencing the women. The social control here is both verbal and material, policing conversations, deciding wages, and determining who gets what kind of task – reinforcing a cycle of invisibilised, exploited labour.

Seelampur is where discarded electronics from around the globe arrive, to be dismantled, fuelling a shadowy industry of toxic waste processing. It is a dense cluster of working-class, Muslim-majority neighbourhoods within the larger Jamna-*paar* (Trans-Yamuna) region of East Delhi. We were there as part of a field inquiry by the Digital Empowerment Foundation (DEF), mapping Delhi’s e-waste economy through the lens of gender, caste, and labour as part of a broader Circular Economy project.

The research reiterated one thing: the urban sustainability drive has an invisible, toxic underbelly, and it is undoubtedly the workers from the informal sector who bear its cost. While precarious, hazardous labour defines life for both men and women in Delhi’s sprawling e-waste economy, it is the gendered intersections of patriarchy, care work, bodily risk, and structural neglect that necessitate urgent examination of the lives of women workers in places like Seelampur’s unregulated workshops.

No protections against toxic exposure

Understanding these ground realities helps us explore how the same digital infrastructures that promise empowerment and opportunity for some, invisibilise and endanger others. It asks: who is left out, and harmed, by India’s digital growth story? And how might truly inclusive governance account for the people who extract value from discarded technologies while receiving none of its protections?

A pair of blackened, calloused hands over a bundle of stripped electrical wiresDEF

Most of the labourers in Seelampur belong to lower-caste Muslim communities, predominantly Ansaris, Maliks, and others, who have historically occupied such working-class neighbourhoods in East Delhi. Alongside them are waves of migrant Muslim labourers from West Bengal and towns like Meerut, drawn to Seelampur’s recycling economy by the promise of daily wages, however meagre and hazardous.

Men, women, and children extract copper, silver, and aluminium from broken phones, televisions, and computers with their bare hands. Shops are mostly makeshift, dimly lit, and packed wall-to-wall with discarded electronics. The methods used here – such as open burning, acid leaching, and manual separation – are outdated and perilous, with no provisions for occupational safety, no protections against toxic exposure, and no mechanisms for social security. There are no gloves, no masks, no ventilation.

Interestingly, the materiality of such manual labour becomes a medium through which these pertinent risks are unevenly distributed, making it crucial to foreground how aspects of gender, religion, caste and labour intersect to shape hierarchies of risk, precarity, and invisibility. As Fatima* puts it, "God gave me these hands to work. I don't need protection. I trust God to take care of me." Workers are often unaware of the slow devastation caused by long-term exposure to toxic air, chemicals, fumes, and waste.

A pile of dismantled and broken feature phones is spread on the ground, likely collected for electronic waste recycling or parts recovery

Women are essential yet invisible

The workshops blur the boundaries between work and domesticity, compelling women to juggle different worlds of care, sociality, reproduction, household chores, and child-rearing while stripping wires in rooms thick with metallic dust.

Sabina*, her face and hands smudged with soot, a toddler perched on her lap, sat near a furnace, sorting wires. "When they were infants, we brought them here. Now they stay at home, looking after each other," says Yasmeen* wearily.

A worker's hand, covered in dust, sorting through a pile of shredded electronic waste containing small metal and plastic componentsDEF

The absence of any creche facility leaves these women with no choice but to either leave their children at home unsupervised or bring them along into unsafe work environments. Many are paid less than their male counterparts, Rs 250 to Rs 300 per day, compared to fixed salaries of Rs 13,000 to Rs 15,000 for men, despite working similar, if not longer, hours. Their work is repetitive and exhausting, with breaks only during major festivals, such as Eid and Ramadan.

Some shop owners justify this disparity by claiming that men lift heavier loads, or are primary breadwinners. But this ignores the deeper, structural disparity: unpaid care work and low-paid productive labour remain invisible in official accounts, propping up urban economies without state accountability.

This structural neglect seeps into welfare provisions as well. The Unorganised Workers' Social Security Act (2008) aims to extend welfare benefits, including health, disability, maternity, and old age protection, to workers in the informal sector. However, e-waste workers remain outside the purview of this scheme due to a form of legal invisibility, exposing them to exploitation and reinforcing the precarious and insecure conditions of their work.

Despite the Rashtriya Swasthya Bima Yojana (RSBY), a health insurance scheme offering Rs 30,000 in coverage per year for Below Poverty Line (BPL) families, many still pay out-of-pocket for basic healthcare. The scheme fails to address outpatient costs and the daily toll of chronic exposure to industrial waste.

"It's hard for them to get treatment because there's always a long line at the hospital. And even if they get treated, the medicines are too expensive for them to buy," says a man guarding the workshop site.

For women constantly exposed to burning plastics (PVC or vinyl), metallic dust, and chemical residues, medical help is a luxury they can rarely afford. Even as the Delhi government revised minimum wages, effective from October 2024, raising the monthly pay for unskilled, semi-skilled, and skilled workers, the improvements remain out of reach for most in the e-waste sector. Men may receive a fixed monthly income, but women remain stuck in casual, daily wage, unprotected roles.

The irony is painful. The informal e-waste sector plays a crucial role in India's recycling ecosystem; yet, workers, particularly women, are essential yet often invisible. These labour conditions are not isolated anomalies but integral to the functioning of the global value chain of digital consumption and disposal, which systematically externalises environmental risks and labour exploitation to informal, decentralised, peripheral and last-mile processing hubs like Seelampur.

And yet, for all its dangers, Seelampur's e-waste economy quietly keeps thousands of livelihoods afloat and plays a vital role in recycling the city's discarded electronics. It is these workers who sort through the waste and recover valuable materials, doing a job that the formal sector rarely undertakes. To recognise their work isn't an act of charity, but a necessary reminder that the sustainability of our cities rests on the labour of people we refuse to see.

** Names changed to protect privacy*

Raina Ghosh, a Doctorate from Jawaharlal Nehru University, works for the Research & Advocacy Division at the Digital Empowerment Foundation.

Alfiya Azeem Khan, a Digital Swaraj Fellow, works for the Research & Advocacy Division at the Digital Empowerment Foundation.

Views expressed are the authors' own.