

Occupational safety and health and the informal economy

Evidence review

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Executive summary

The informal economy accounts for over 60 per cent of the world's employed population – equivalent to nearly two billion workers – making it a defining feature of global labour markets. Despite its economic importance, informal employment remains largely unprotected, unregulated and excluded from formal occupational safety and health (OSH) frameworks. This evidence review, conducted by RAND Europe for the Institution of Occupational Safety and Health (IOSH), synthesises global evidence from academic and grey literature to explore the relationship between informality and OSH, identify policy gaps and inform future research and practice.

Approach

This study is based on a scoping literature review, which used a structured search to identify academic and grey literature from key databases. We included a total of 30 published sources in the evidence review.

Key findings:

- **The scale and nature of informality:** Informal work spans all sectors and regions, and is particularly prevalent in agriculture, construction, services and waste management. Women, migrants, younger workers and older workers are disproportionately represented. The informal economy's heterogeneity – ranging from selfemployed artisans to wage labourers without contracts – creates diverse risk exposures and protection gaps.
- **OSH risks and outcomes:** Evidence on OSH in the informal economy is limited and fragmented, relying primarily on smallscale case studies. Nonetheless, consistent patterns emerge, including hazardous working conditions, inadequate safety equipment, low risk awareness and exclusion from healthcare and social protection. Informal workers experience higher rates of injury, illness and occupational disease than formal workers.
- **Vulnerable groups:**
 - *Women* face compounded risks due to dual roles in paid and unpaid labour, lack of childcare and exclusion from leadership or higherpaying roles.
 - *Young workers* are more exposed to accidents and illness due to inexperience and limited training.
 - *Migrant workers* often endure unsafe environments and refrain from reporting hazards due to precarious legal status.
- **Policy and practice gaps:** Many national OSH systems overlook informal workers, and existing frameworks are poorly enforced. Informality often persists even within formal enterprises, blurring regulatory boundaries.

- **Promising approaches:**
 - *Formalisation* - bringing informal workers into regulated employment – can enhance OSH protection, but is not a universal solution due to administrative and financial barriers.
 - *Extending healthcare, social security and OSH services* to informal workers improves health outcomes and reduces risks.
 - *Worker collectives and grassroots organisations* have proved effective in raising awareness and negotiating local improvements, though sustainability is often challenging without state support.

Conclusions and recommendations

The review underscores the need to integrate informal workers into national OSH systems through inclusive legislation, accessible health and safety services, and contextsensitive interventions. Sustainable progress will require:

1. **Strengthening data and evidence** – particularly largescale, representative studies to quantify OSH risks and evaluate interventions.
2. **Developing gender- and youthresponsive policies** that address intersecting vulnerabilities.
3. **Supporting multilevel collaboration** between governments, worker organisations and employers to share responsibility for OSH improvements.
4. **Embedding formalisation within broader social protection strategies** to ensure equitable and lasting outcomes.

Overall, improving OSH in the informal economy is not merely a technical challenge but a matter of social justice and economic sustainability. A coordinated, inclusive approach rooted in evidence and worker engagement is essential to ensuring safe and dignified work for the majority of the world's labour force.

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Abbreviations

CEREST	Workers Health Reference Centre (from Portuguese: <i>Centro de Referência em Saúde do Trabalhador</i>)
EUOSHA	European Agency for Safety and Health at Work
GDP	Gross Domestic Product
HIC	High-income countries
HSE	Health and Safety Executive (UK)
ILO	International Labour Organization
ILOSTAT	International Labour Organization Statistics database
IOSH	Institution of Occupational Safety and Health
LFS	Labour Force Survey
LMIC	Low- and middle-income countries
NIOSH	National Institute for Occupational Safety and Health (US)
OECD	Organisation for Economic Cooperation and Development
OSH	Occupational Safety and Health
OSHA	Occupational Safety and Health Agency (US)
PPE	Personal Protective Equipment
REA	Rapid Evidence Assessment
SDG	Sustainable Development Goal
SEWA	Self-employed Women's Association (India)
SEWU	Self-employed Women's Union (South Africa)
UK	United Kingdom
UN	United Nations
US	United States (of America)
WHO	World Health Organization
WIEGO	Women in Informal Employment: Globalizing and Organizing

1. Introduction and methodological approach

The informal economy has long been a defining feature of labour markets worldwide. While it is particularly prominent in low- and middleincome countries (LMICs), informality is also significant in highincome countries (HICs). Estimates from the International Labour Organization (ILO) indicate that over 60 per cent of the world's employed population works in the informal economy, with this figure exceeding 90 per cent in some regions of Africa and South Asia (Kawakami 2024; Cui et al. 2022). In absolute terms, this equates to approximately two billion workers worldwide, of whom 93 per cent are located in LMICs.

Informality is particularly prevalent in agricultural work, and is also common in construction, manufacturing, services and waste management. Certain groups – such as women, young people, migrants, and other socioeconomically disadvantaged populations – are overrepresented in the informal economy (Levitsky 2019; Ogando et al. 2017; Adei et al. 2022a; 2022b). The informal economy acts both as a livelihood strategy in contexts of poverty and exclusion from formal opportunities, and as a 'safety net' during economic crises when formal jobs are lost.

Beyond its role in job provision, the informal economy plays a substantial economic role, contributing approximately 55 per cent of Gross Domestic Product (GDP) in SubSaharan Africa and up to 60 per cent in developing countries overall (Adeti et al. 2022b; Levitsky 2019). Nevertheless, informal employment is typically lacking in formal protection and is unregulated. For workers, this means exclusion from labour legislation, income taxation and employmentbased social protection; the absence of entitlements such as paid sick leave or a dismissal notice; and operating in environments without mandated occupational safety measures. These characteristics create the conditions for employment marked by unstable income, little or no job security and elevated occupational safety and health (OSH) risks.

In light of these challenges, this report examines the relationship between the informal economy and OSH, synthesising evidence to inform future research, policy and practice.

1.1. Aims and objectives of the study

Against this backdrop, this evidence review aims to gather evidence and data from grey and academic literature to answer the following main research question: **What is the relationship between the informal economy and occupational safety and health?** The review is global in scope, with crossnational differences described where possible (i.e. where comparative data are available).

The review provides a focused analysis of key themes, laying the groundwork by mapping the background, statistics, policy context and core issues related to OSH and the informal economy. By identifying and synthesising relevant evidence, the study aims to highlight critical insights and propose initial recommendations.

Table 1 below outlines the key topics to be explored, along with associated research subquestions that guide the analysis and the report section(s) that address them.

Table 1. Key topics and sub-questions

Topic	Research questions	Report section(s)
Background and taxonomy	What definitions and classifications are commonly used to describe the informal economy (particularly in relation to OSH)?	Section 2.1
Key statistics	- What are the current statistics on the scale of the informal economy globally, and how do these statistics differ by country/region, sector, and key demographic factors (e.g. age, gender, socio-economic status)? - What specific data is available regarding OSH risks, incidents and health outcomes among informal workers, and what are the main gaps in the data? How do these factors vary according to key demographic factors (e.g. age, gender, socio-economic status)?	Sections 2.2 and 3.1
Key issues and recommendations	- What innovative approaches have been implemented globally to improve OSH in the informal economy? - What recommendations can be made to effectively address OSH challenges in the informal economy (e.g. examples of successful strategies; effective transitions from informality to formality)?	Section 4
Risks, challenges, and opportunities for OSH	- What are the primary OSH risks and challenges faced by workers in the informal economy? - How do these challenges differ across economic sectors or based on the nature of their work (e.g. manual labour vs. service-oriented tasks; platform economies)?	Section 3
Policy context and practices	- What are the main existing policies and frameworks that govern OSH for informal workers in different countries? - Where are the gaps in legislation and conventions that fail to protect specific sectors, countries or vulnerable groups? Which workers are currently unprotected under existing laws? - Which policies and practices have been shown to be effective in promoting good OSH for workers in the informal economy?	Section 4

Topic	Research questions	Report section(s)
Impact on women and vulnerable groups	• What types of occupational risks and challenges are most prevalent for women and vulnerable groups in the informal economy? • What specific barriers do these groups face in accessing OSH protections?	Section 3.2

1.2. Research approach and methods

We adopted a **scoping literature review** as the central methodology for this project. A scoping review is an exploratory approach that seeks to identify key concepts, theories, sources and gaps in the academic and grey literature within a shortened timeframe, while still maintaining principles of transparency and replicability. Unlike systematic reviews or Rapid Evidence Assessments (REAs), which involve a more comprehensive evaluation of available evidence, scoping reviews are designed to map the breadth of literature, synthesise emerging themes and provide timely insights that can guide policy and practice.

In this study, we used a scoping review to identify, map and synthesise existing academic and grey literature on the relationship between OSH and the informal economy across all sectors, population groups and geographical regions. The remainder of this subsection outlines the steps undertaken to conduct the review, including the design of the search strategy, literature identification, screening, extraction and synthesis.

1.2.1. Search strategy

We began the review by developing a targeted search strategy that clearly outlined the research questions, identified relevant sources, constructed precise search strings and established inclusion and exclusion criteria. In July 2025, we applied the finalised search terms (see **Table A1** in **Annex 1**) to systematic searches within both the Scopus and Google Scholar databases. We screened the top 30 results from each database to ensure we selected the most pertinent literature, and employed Boolean operators to combine keywords related to the informal economy, OSH, impacts, interventions and policy frameworks. The search was intentionally broad, with no restrictions on publication date or geographic location, though we considered only sources published in English.

To capture practiceoriented and grey literature, we also conducted targeted searches on the websites of relevant international and national organisations, including the ILO, World Health Organization (WHO), the European Agency for Safety and Health at Work (EU-OSHA), Organisation for Economic Cooperation and Development (OECD), United States National Institute for Occupational Safety and Health (US NIOSH), the US agency for Occupational Safety and Health Agency (US OSHA), and the UK Health and Safety Executive's Science and Research Centre.

1.2.2. Screening process

After collating all retrieved references and removing duplicates, we screened sources in two stages:

1. **Title and abstract screening:** One reviewer assessed each record against the predefined inclusion and exclusion criteria (**Table A2** in **Annex A**). To ensure consistency, a second reviewer independently screened a sample of references, and the reviewers discussed any discrepancies until they reached a consensus.

2. **Fulltext review:** Sources passing title/abstract screening were read in full to confirm relevance. Fulltext screening applied the same criteria, excluding studies that lacked a substantive OSH and informal economy focus or did not present empirical evidence (e.g. opinion pieces and commentaries).

Following screening, we retained **30 sources** for data extraction.

1.2.3. Data extraction and snowballing

We used a structured extraction template (**Annex A, Table A3**) to collect consistent, comparable data across the included sources. The extracted data covered key details, such as:

- Bibliographic details and geographic/sectoral focus
 - Definitions of informality and categorisations
 - Statistics on the scale and composition of the informal economy
 - OSH-related risks, challenges, and opportunities
 - Policy and legal frameworks governing OSH
 - Evidence on gender and vulnerability dimensions
 - Strategies and recommendations for OSH improvement.

In addition, we screened the bibliographies of included studies, where relevant, to identify additional sources and expand the breadth of the literature reviewed. We subjected any further related studies identified through this snowballing technique to the identical screening and data extraction procedures.

1.2.4. Synthesis and analysis

We summarised and thematically categorised the extracted data according to the review's key topics and research questions, mapping the evidence base, identified recurrent themes and highlighted knowledge gaps – paying particular attention to variations across sectors, geographies, and population groups. We used these findings and illustrative examples to inform this report's background, statistics, policy context and recommendations.

1.2.5. Strengths and limitations

We designed and implemented the scoping review to balance methodological rigour with pragmatism and timeliness. A transparent process was followed, with clearly defined research questions, inclusion/exclusion criteria and data extraction protocols. Our use of structured search strategies across two major academic databases, complemented by targeted searches of authoritative organisational sources, ensured a robust and traceable approach to evidence identification.

Nonetheless, we acknowledge several important limitations. As this was a scoping literature review rather than a systematic review or REA, we prioritised breadth over exhaustive coverage. Restricting database searches to Scopus, Google Scholar and selected organisational websites may have excluded relevant studies indexed elsewhere or published in languages other than English. A single reviewer screened and extracted each source, with quality-assurance sampling to mitigate bias. The prioritisation of English language and readily accessible material may also have led to the underrepresentation of regionally published or harder-to-access evidence.

2. The informal economy: key definitions, facts and figures

This chapter provides a background on the informal economy, including how it is defined and measured in the literature and the statistics available on its size and composition across countries.

2.1. Taxonomy and conceptual debates

2.1.1. The informal economy is defined by a lack of legal and social protections, yet its boundaries with formal work remain blurred

The ILO defines the informal economy as ‘all economic activities by workers and economic units that are – in law or in practice – not covered or insufficiently covered by formal arrangements’ (ILO 2002). This definition encompasses:

- The informal sector: production that takes place in unincorporated small or unregistered economic units, also known as informal enterprises (Sverdlik et al. 2024; Nankongnab et al. 2015);
- Informal enterprises: typically small, unregistered and familyowned businesses, operating outside formal regulatory frameworks (Oladosu et al. 2023; Barten et al. 2008); and
- Informal employment: jobs or work lacking a contract, legal protection or social security, regardless of whether they occur in formal or informal enterprises (Nankongnab et al. 2015; Julià et al. 2019; Ervin et al. 2025).

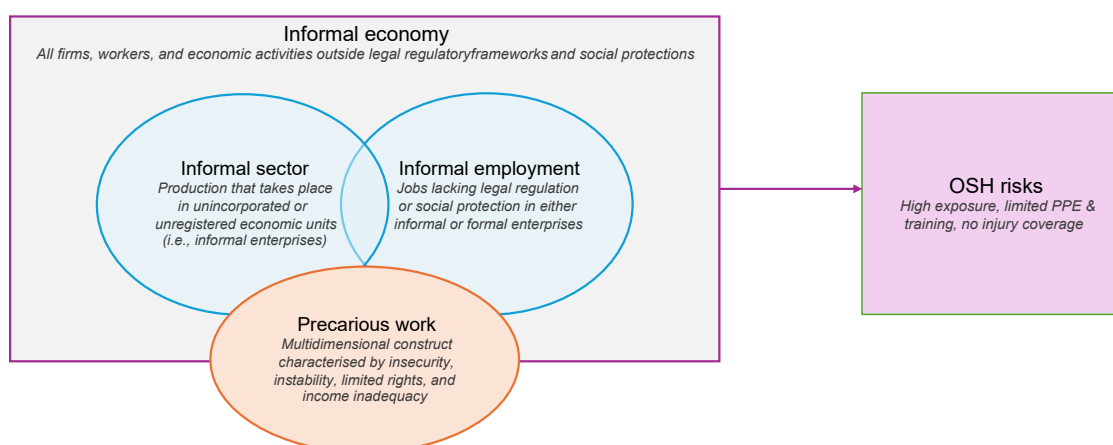
The conceptual origins of the term trace back to Keith Hart’s (1973) distinction between the formal and informal sectors, which initially differentiated between waged employment and selfemployed entrepreneurial activities (Hart 1973; 1985; Chakraborty et al. 2025). Over time, definitions expanded to a wide array of arrangements, including selfemployment, contributing family work, casual wage labour without formal contracts and unregulated employment relationships (Cui et al. 2022; Santana & Loomis 2004). Importantly, informal work occurs not only in ‘informal enterprises’ but also within formal structures when workers are engaged without protection (Barten et al. 2008; Nankongnab et al. 2015; Cui et al. 2022).

There is a broad consensus across the specialised literature that the absence of formal labour protections, social security and regulatory oversight is a defining feature of informality (Levitsky 2019; Julià et al. 2019; Lee & Di Ruggiero 2022). Aronsson and Huijts (2025) identify two core characteristics of informal employment: it is unregulated and unprotected. *Unregulated* refers to a lack of formal employment arrangements or contracts, with the terms and conditions of work set outside the scope of labour legislation and statutory enforcement. *Unprotected* denotes the absence of employment-based benefits and safeguards, such as paid sick leave, pension entitlements or social security coverage, leaving workers without access to mechanisms that support income security, wellbeing and risk mitigation (Aronsson & Huijts 2025). Wellbeing in a workplace context encompasses the worker’s satisfaction with work and life, as well as their state

of health (Schulte & Vaino 2010). **Figure 1** provides a schematic overview of the key components and relationships that define the informal economy.

The implications of these working conditions are significant. Informal employment is frequently associated with low job security, poor and hazardous working conditions, limited access to healthcare and minimal opportunities for training or collective bargaining (Porras et al. 2017; Adei et al. 2022a; Mashimbyi et al. 2025). At the same time, the informal economy is also widely recognised as heterogeneous, encompassing both relatively secure professionals and a much larger group of low-income workers in precarious and hazardous occupations (Lund et al. 2016).

Figure 1. Conceptual map illustrating the main components of the informal economy



Source: Developed by RAND Europe based on the reviewed literature.

Within this overarching agreement, however, several key debates and areas of contention remain. First, there is an ongoing discussion about the boundaries between informal and formal employment. Several studies highlight the difficulty of drawing clear distinctions between the two, particularly in ‘mixed’ situations where workers may straddle both spheres or where formal enterprises employ workers informally (Naicker et al. 2021; Cui et al. 2022). In some cases, formal firms deliberately keep part of their workforce unregistered, thereby circumventing taxation requirements, labour law compliance and occupational safety regulations (Barten et al. 2008).

A second debate centres on the relationship between informal and precarious work. Precarious work, predominantly discussed in high-income contexts, is a multidimensional construct defined by insecure, unstable work, low pay and limited workplace rights, thus often transferring financial and OSH risks from employers to workers. While precariousness is a common feature of informal employment, it is not exclusive to it. A growing body of evidence points to the existence of precarious work within formal employment, such as temporary agency contracts or gigeconomy arrangements¹ in HICs. Conversely, some

¹ The term ‘gig economy’ refers to an economic organisation characterised by short-term, flexible or freelance ‘gigs’ undertaken without a guarantee of ongoing work. It generally encompasses two main forms of activity: (a) online platform-based work, and (b) location-based on-demand work mediated through apps. The gig economy is an expanding segment of the non-standard and often informal labour force. While such work can provide flexibility and income opportunities, it also raises concerns about worker protections, social security, and exposure to OSH risks (Ervin et al. 2025).

forms of informal work, particularly among selfemployed professionals or skilled artisans, can offer relative autonomy, income stability or other forms of security (Lee & Di Ruggiero 2022).

A further challenge is developing definitions of informality that are valid across contexts. The ILO's statistical definitions are widely used and have been instrumental in shaping global measurement. However, they have been critiqued for deriving primarily from LMIC contexts, potentially overlooking the prevalence and nature of informal employment in HICs. Julià et al. (2019) note that, in many HICs, official statistics have historically rendered informal employment invisible, treating it as either negligible or synonymous with illegal activity. Therefore, it is largely absent from labour force accounts. This invisibility has implications for recognising and addressing vulnerabilities among workers whose roles fall outside the standard employment relationship.

Finally, there is a conceptual shift towards viewing the informal economy not as a marginal, temporary or residual segment destined to disappear with economic progress, but as a persistent and structural component of contemporary economies. This perspective marks a departure from earlier views that saw informality merely as a transitional stage to be superseded by formalisation and economic growth. Instead, informality is increasingly recognised as continually shaped and sustained by processes of globalisation, rapid urbanisation, technological change and labour market restructuring (Barten et al. 2008; Chen 2012; Sverdlik et al. 2024). Informal work offers essential livelihoods for billions while contributing significantly to national GDP (Sverdlik et al. 2024). This evolving understanding has prompted researchers to focus more closely on how informality intersects with precariousness and other forms of vulnerability, such as gender, age and migration status, which can amplify disadvantage and exacerbate workers' exposure to occupational safety and health risks (Lee & Di Ruggiero 2022; Sverdlik et al. 2024).

2.1.2. Informal workers represent a highly diverse workforce spanning many sectors and job types

The informal economy encompasses a wide range of worker groups, reflecting substantial heterogeneity in employment status, sector and risk exposure. For analytical purposes, informal employment is commonly divided into two main categories: informal self-employment and informal wage employment.

Informal self-employment

This category includes individuals who operate their own economic activities outside formal regulatory frameworks, managing their own risk without the protections afforded by formal labour arrangements. Subcategories include:

- **Own-account workers:** representing the largest segment of informal employment worldwide, ownaccount workers are individuals who independently run their own businesses or trades, typically without employing others. These workers frequently experience low and unstable earnings and lack access to social protection or employmentbased benefits (Barten et al. 2008; Cui et al. 2022).
- **Contributing family workers:** family members engaged in a family business or farm, usually without formal contracts or remuneration. This group is predominantly composed of women, reflecting persistent gender norms that influence mobility, participation in paid work and decision-making within households (Chen 2012; Nankongnab et al. 2015).
- **Other forms of self-employment:** include employers who run informal enterprises and members of informal producers' cooperatives (Chen 2012).

Informal waged employment

This group refers to employees whose jobs lack secure contracts, social protection and legal regulation, regardless of whether they work for formal or informal employers. Common forms include:

- **Employees in informal jobs:** wage earners who hold jobs that are not subject to labour legislation, income taxation, social protection or entitlement to certain employment benefits, whether employed in formal or informal enterprises (Santana & Loomis 2004; Julià et al. 2019).
- **Casual day labourers:** workers hired on a daily or temporary basis, often for manual or lowskilled work, particularly in construction, agriculture and transport (Chen 2012; Levitsky 2019).
- **Industrial outworkers (or homeworkers):** generally among the least visible informal workers, this group primarily comprises women engaged in subcontracted piece-rate production, often from their homes (Chen 2012; Nankongnab et al. 2015).
- **Paid domestic workers** employed by private households, often women and/or migrants, who are commonly excluded from formal labour protections (Cui et al. 2022).

Specific occupational groups

Certain occupational groups are especially prevalent in informal employment and face heightened OSH risks due to hazardous work environments, exposure to multiple hazards and a lack of protective measures (Levitsky 2019; Zolnikov et al. 2021; Lund et al. 2016). Examples include:

- **Street vendors/market traders** who operate in public spaces without formal licences.
- **Waste pickers/recyclers** who collect and sort waste in public spaces or landfills.
- **Home-based artisans/producers** engaged in welding, carpentry, brick-making, food preparation, garment production, electronics assembly or handicrafts in unregulated workshops or from home.
- **Construction labourers**, frequently hired on a casual basis for manual tasks.
- **Domestic workers** undertaking cleaning, cooking and care roles.
- **Transport workers**, including rickshaw pullers, informal drivers and motorcycle taxi operators.
- **Agricultural/forest workers**, who are often employed casually in farming, forestry, wood processing and related activities.

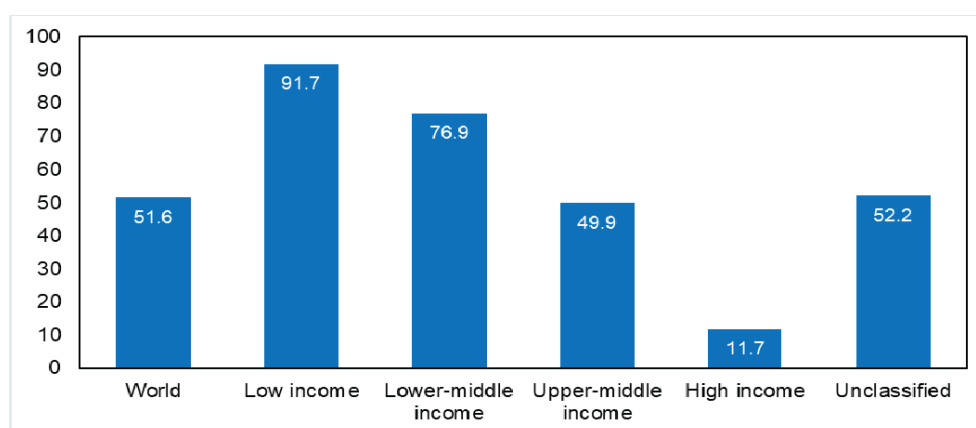
2.2. Size and composition of the informal economy

A substantial body of data exists on the scale and structure of the informal economy, including detailed information on its contribution to GDP and its distribution across sectors, occupations and worker groups. In contrast, much less is known about OSH within informal work. Few datasets capture OSH risks, exposures or health outcomes among informal workers, and even fewer enable comparison with conditions in the formal economy. This subsection summarises the best available evidence on the size and distribution of the informal economy, while emphasising the importance of interpreting these labour-market statistics in light of the persistent evidence gap on OSH issues.

² Industrial outworkers (or homeworkers) differ from own account workers in that they produce goods or services to the specifications of an employer, for remuneration, and typically lack the autonomy or control over their work needed to be classified as independent workers (Nankongnab et al. 2015).

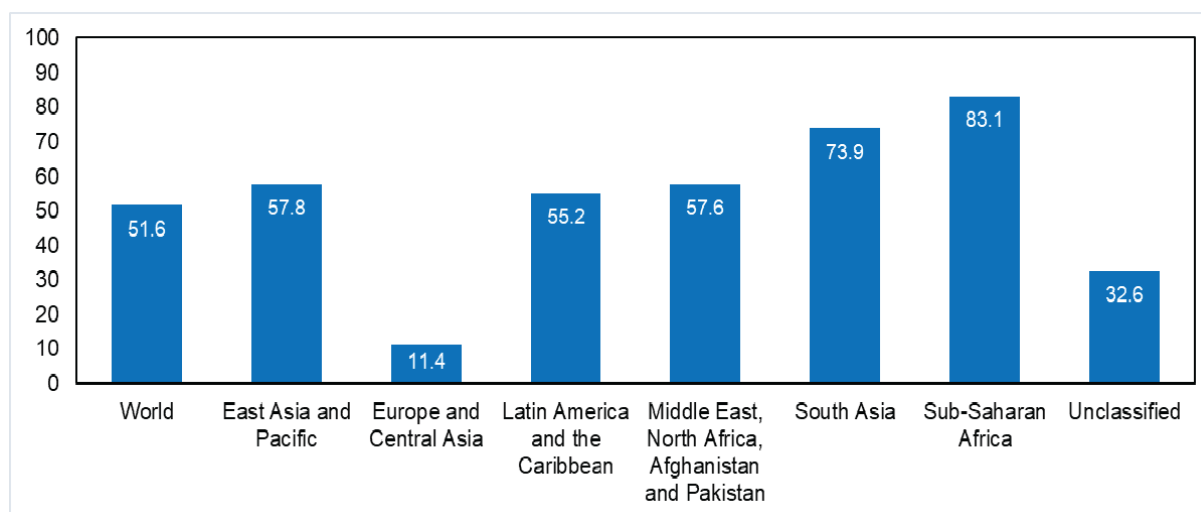
According to the ILO, two billion people worldwide work in the informal economy, representing about 60 per cent of total global employment.³ Rates of informal employment vary widely across countries (see Annex B for country-level data). On average, LMICs have significantly higher informality rates than HICs (Figure 2), and Sub-Saharan Africa and South Asia have much higher informality rates than other regions (Figure 3). In 2020, the informal economy accounted for 28% of global GDP,⁴ with an average contribution of 35 per cent in LMICs, compared to just 15 per cent in advanced economies.⁵

Figure 2. Percentage of informal employment in total employment by national income group



Source: Authors' analysis of ILOSTAT – SDG indicator 8.3.1 – proportion of informal employment in total employment by sex and sector (%) (Aug 2025), including data for 143 countries. Country classification by income and region follows the World Bank Country and Lending Groups (2025). Data points marked as 'Unreliable' in the original dataset are excluded from the analysis. The latest available data for each country is used. Reported values represent either regional averages or averages across countries grouped by income level.

Figure 3. Percentage of informal employment in total employment by region



Source: Authors' analysis of ILOSTAT – SDG indicator 8.3.1 – proportion of informal employment in total employment by sex and sector (%) (Aug 2025), including data for 143 countries. Country classification by income and region follows the World Bank Country and Lending Groups (2025). Data points marked as 'Unreliable' in the original dataset are excluded from the analysis. The latest available

³ International Labour Organisation (2025)

⁴ World Bank (2024)

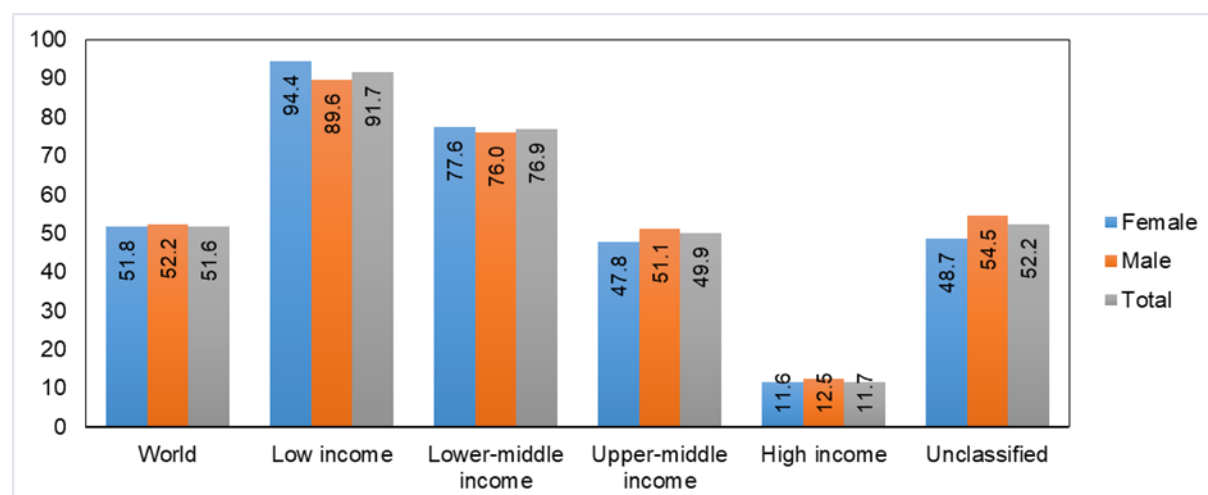
⁵ International Monetary Fund (2021)

data for each country is used. Reported values represent either regional averages or averages across countries grouped by income level.

2.2.1. Gender differences in informality differ across country groups, with women facing higher informality in lower income regions

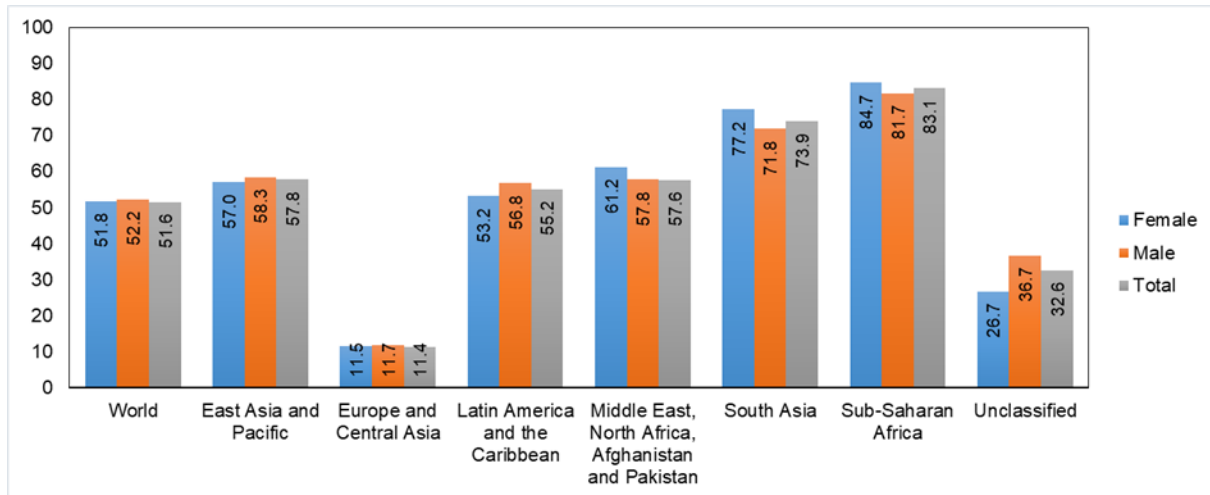
Figures 4 and 5 present informal employment rates by sex and country income groups or region. Our analysis of data from 143 countries suggests that, worldwide, the proportion of men engaged in the informal economy slightly exceeds that of women (52.2 per cent vs. 51.8 per cent). However, the pattern differs across country groups: in low- and lower middle income countries, women's informal employment rates outnumber men's. Regionally, men are more engaged in informal work in East Asia and the Pacific, Europe and Central Asia, and Latin America and the Caribbean, while women have higher rates of informal employment in the Middle East and North Africa, Afghanistan and Pakistan, South Asia and Sub-Saharan Africa.

Figure 4. Percentage of informal employment in total employment by sex and country income group



Source: Authors' analysis of ILOSTAT – SDG indicator 8.3.1 – proportion of informal employment in total employment by sex and sector (%) (Aug 2025), including data for 143 countries. Country classification by income and region follows the World Bank Country and Lending Groups (2025). Data points marked as 'Unreliable' in the original dataset are excluded from the analysis. The latest available data for each country is used. Reported values represent either regional averages or averages across countries grouped by income level.

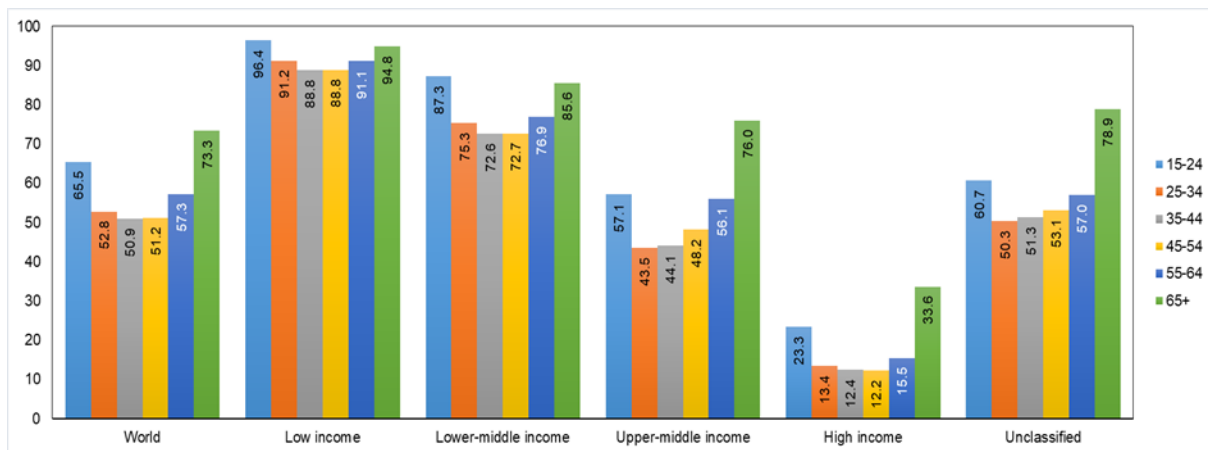
⁶ This differs from the findings in *Women and Men in the Informal Economy: A Statistical Update* (ILO, 2023), which estimates that, globally, the share of men in informal employment exceeds that of women (60% vs. 55%). These discrepancies stem from differences in country coverage (the dataset we used for analysis does not include China, for example) and variations in estimation methodologies.

Figure 5. Percentage of informal employment in total employment by sex and region

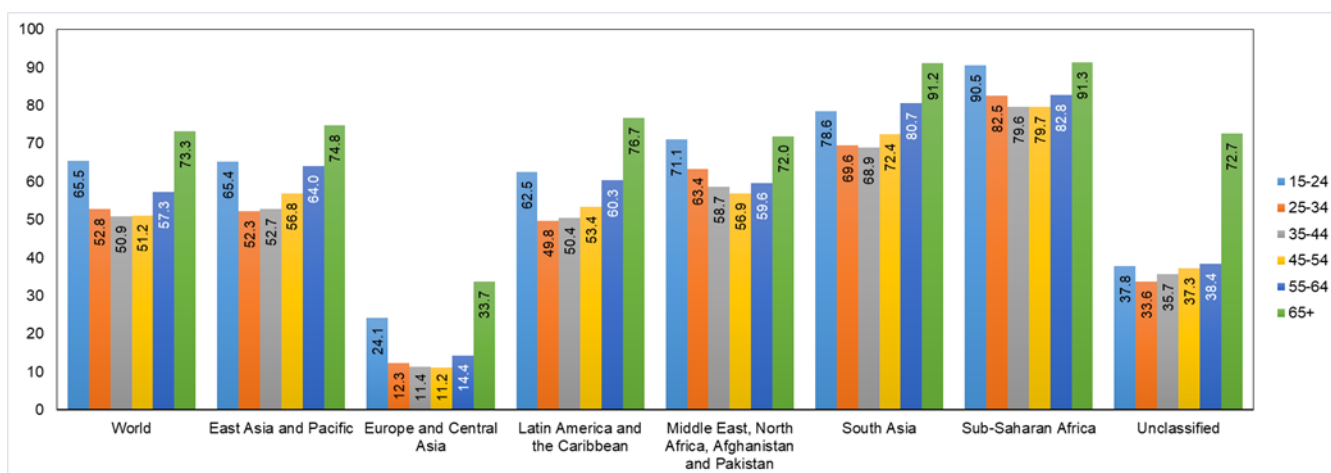
Source: Authors' analysis of ILOSTAT – SDG indicator 8.3.1 – Proportion of informal employment in total employment by sex and sector (%) (Aug 2025), including data for 143 countries. Country classification by income and region follows the World Bank Country and Lending Groups (2025). Data points marked as 'Unreliable' in the original dataset are excluded from the analysis. The latest available data for each country is used. Reported values represent either regional averages or averages across countries grouped by income level.

2.2.2. Youth and older adults are most likely to work informally

Informal employment follows a 'Ushaped' pattern, being more common among young people (aged 15–24) and older adults (65+) and less common for age groups in between (**Figures 6 and 7**). This trend is consistent across country income groups and regions, but the increased prevalence of informality among older workers (65+) is more pronounced in uppermiddle- and highincome countries.

Figure 6. Percentage of informal employment in total employment by age and country income group

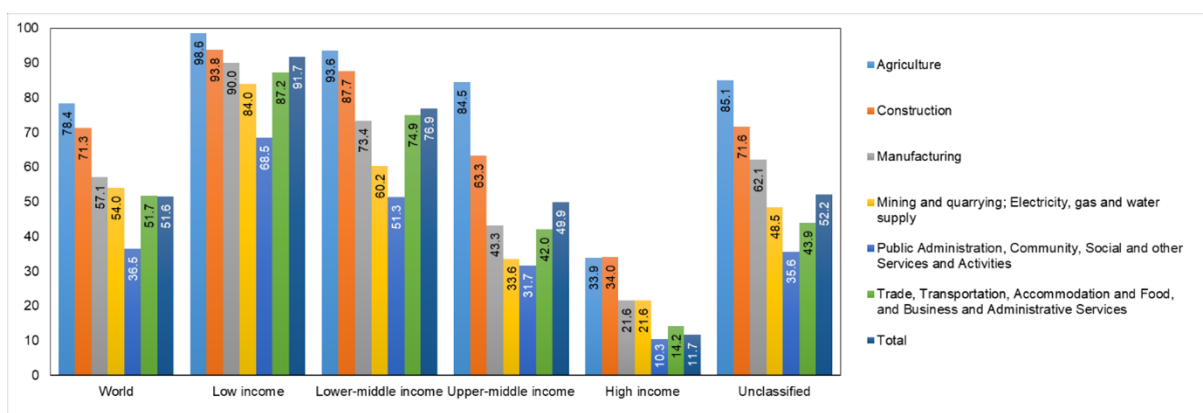
Source: Authors' analysis of ILOSTAT – Labour Force Statistics – informal employment rate by sex and age (%) (Aug 2025), including data for 143 countries. Country classification by income and region follows the World Bank Country and Lending Groups (2025). Data points marked as 'Unreliable' in the original dataset are excluded from the analysis. The latest available data for each country is used. Reported values represent either regional averages or averages across countries grouped by income level.

Figure 7. Percentage of informal employment in total employment by age and region

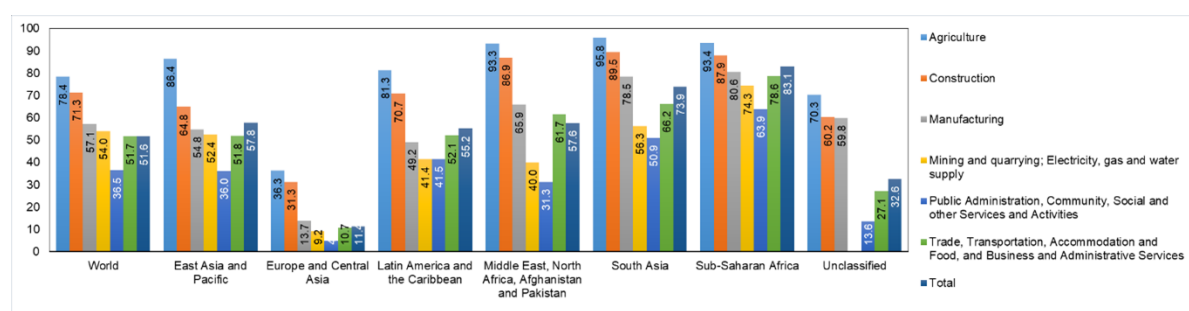
Source: Authors' analysis of ILOSTAT - Labour Force Statistics - informal employment rate by sex and age (%) (Aug 2025), including data for 143 countries. Country classification by income and region follows the World Bank Country and Lending Groups (2025). Data points marked as 'Unreliable' in the original dataset are excluded from the analysis. The latest available data for each country is used. Reported values represent either regional averages or averages across countries grouped by income level.

2.2.3. Agriculture and construction dominate informal employment worldwide

Globally, informal employment is most prevalent in agriculture, followed by construction, manufacturing, mining, quarrying and electricity, gas and water supply, trade, transportation, accommodation, food and business and administration services, and public administration, community, social and other services (Figures 8 and 9). In low and lower-middle-income countries, nearly all agricultural workers are informal (99 per cent and 94 per cent, respectively), compared with around 40 per cent in high-income countries. Regionally, across the Middle East, North Africa, Afghanistan, Pakistan, South Asia and Sub-Saharan Africa, over 93 per cent of agricultural jobs are informal, and nearly 90 per cent of construction jobs are informal.

Figure 8. Percentage of informal employment in total employment by sector and national income group

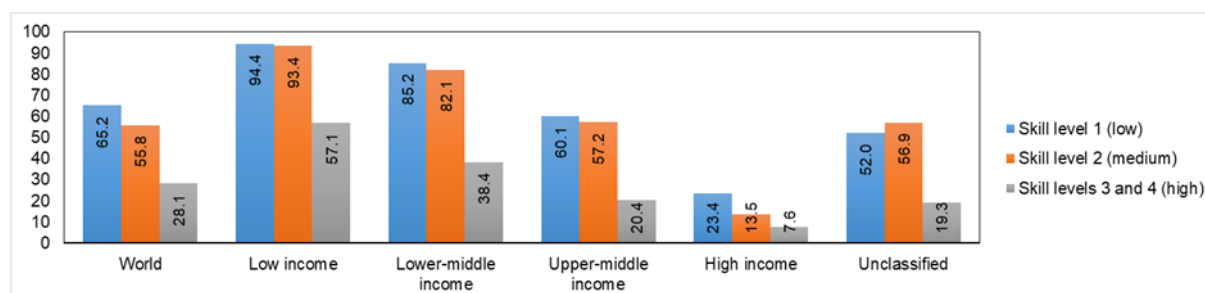
Source: Authors' analysis of ILOSTAT – SDG indicator 8.3.1 – proportion of informal employment in total employment by sex and sector (%) (Aug 2025), including data for 143 countries. Country classification by income and region follows the World Bank Country and Lending Groups (2025). Data points marked as 'Unreliable' in the original dataset are excluded from the analysis. The latest available data for each country is used. Reported values represent either regional averages or averages across countries grouped by income level.

Figure 9. Percentage of informal employment in total employment by sector and region

Source: Authors' analysis of ILOSTAT – SDG indicator 8.3.1 – proportion of informal employment in total employment by sex and sector (%) (Aug 2025), including data for 143 countries. Country classification by income and region follows the World Bank Country and Lending Groups (2025). Data points marked as 'Unreliable' in the original dataset are excluded from the analysis. The latest available data for each country is used. Reported values represent either regional averages or averages across countries grouped by income level.

2.2.4. Low-skilled and manual jobs are most often informal, yet informality persists in highlyskilled roles in lowerincome countries

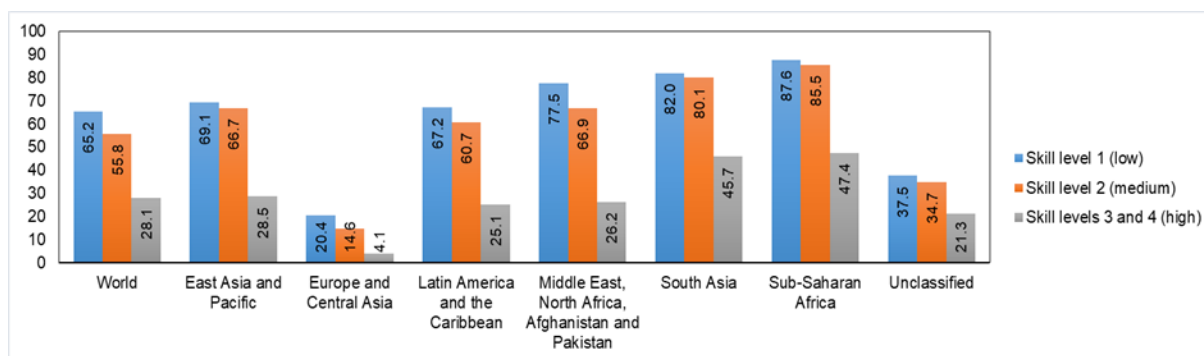
By skill level, informal employment is most prevalent among low-skilled workers and least common among high-skilled workers⁷ (Figures 10 and 11). However, in lower-income countries, informality remains substantial across all qualification levels, reaching around 57 per cent even among highly skilled workers.

Figure 10. Percentage of informal employment in total employment by skill level and national income group

Source: Authors' analysis of ILOSTAT – Labour Force Statistics – informal employment rate by sex and occupation (%) (Aug 2025), including data for 138 countries. Country classification by income and region follows the World Bank Country and Lending Groups (2025). Data points marked as 'Unreliable' in the original dataset are excluded from the analysis. The latest available data for each country is used. Reported values represent either regional averages or averages across countries grouped by income level.

⁷ Skill levels are classified according to the International Standard Classification of Occupations (ISCO 08) skill level, which is a function of the complexity and range of tasks and duties to be performed in an occupation, as well as the level of formal education required (broadly speaking, low skilled corresponds to primary education, medium skilled up to post secondary, non tertiary education and high skilled tertiary education).

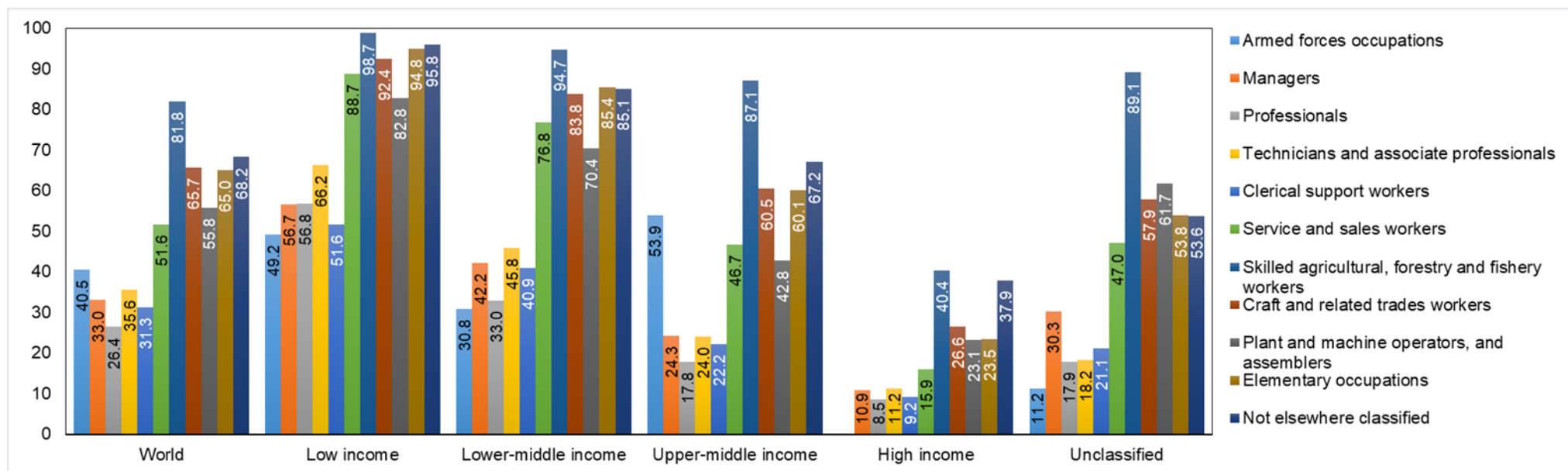
Figure 11. Percentage of informal employment in total employment by skill level and region



Source: Authors' analysis of ILOSTAT – Labour Force Statistics – informal employment rate by sex and occupation (%) (Aug 2025), including data for 138 countries. Country classification by income and region follows the World Bank Country and Lending Groups (2025). Data points marked as 'Unreliable' in the original dataset are excluded from the analysis. The latest available data for each country is used. Reported values represent either regional averages or averages across countries grouped by income level.

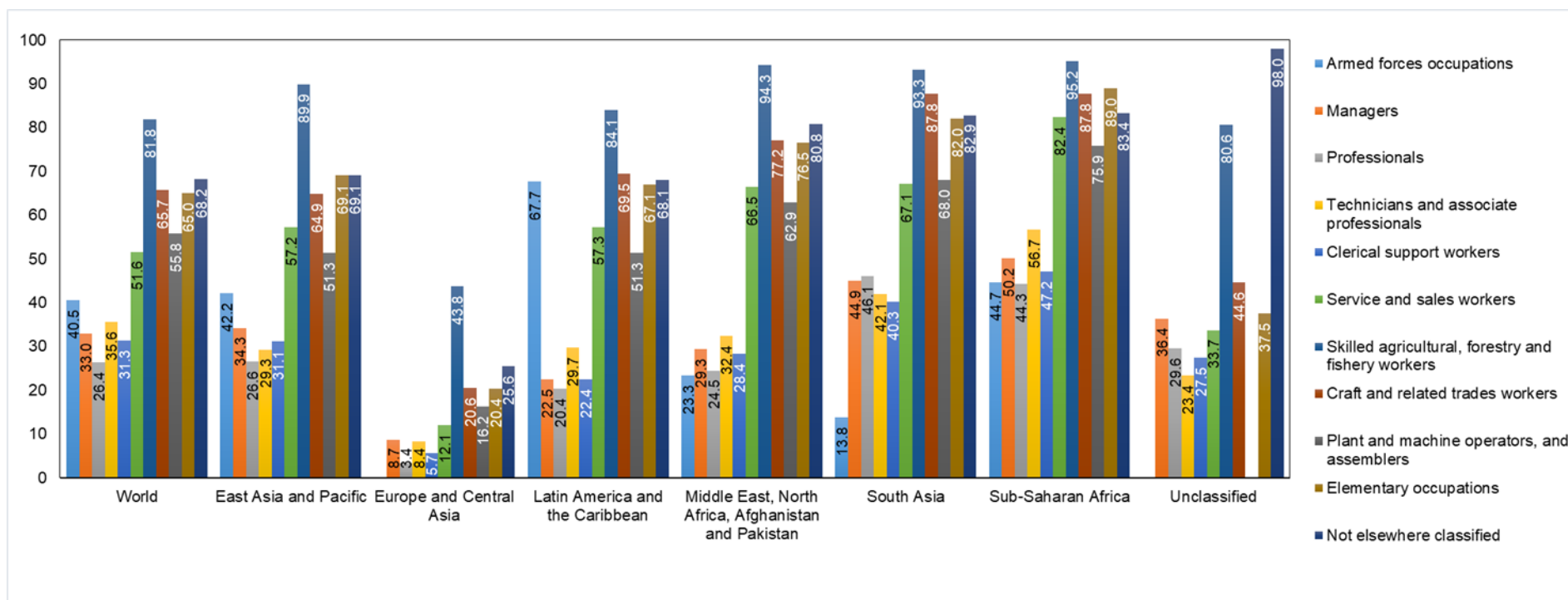
By occupation, informal employment is most prevalent among skilled agricultural, forestry and fishery workers, followed by craft and related trades workers and elementary occupations; it is least popular among professionals, clerical support workers and managers (**Figures 12 and 13**).

Figure 12. Percentage of informal employment in total employment by occupation and national income group



Source: Authors' analysis of ILOSTAT – Labour Force Statistics – informal employment rate by sex and occupation (%) (Aug 2025), including data for 138 countries. Country classification by income and region follows the World Bank Country and Lending Groups (2025). Data points marked as 'Unreliable' in the original dataset are excluded from the analysis. The latest available data for each country is used. Reported values represent either regional averages or averages across countries grouped by income level.

Figure 13. Percentage of informal employment in total employment by occupation and region

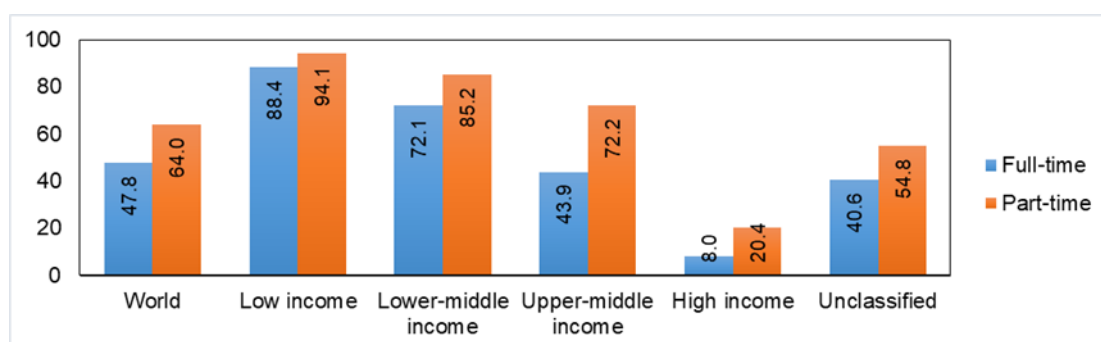


Source: Authors' analysis of ILOSTAT – Labour Force Statistics – Informal employment rate by sex and occupation (%) (Aug 2025), including data for 138 countries. Country classification by income and region follows the World Bank Country and Lending Groups (2025). Data points marked as 'Unreliable' in the original dataset are excluded from the analysis. The latest available data for each country is used. Reported values represent either regional averages or averages across countries grouped by income level.

2.2.5. Informal employment is far more common among part-time worker than full-time workers, with the gap most pronounced in higher-income countries

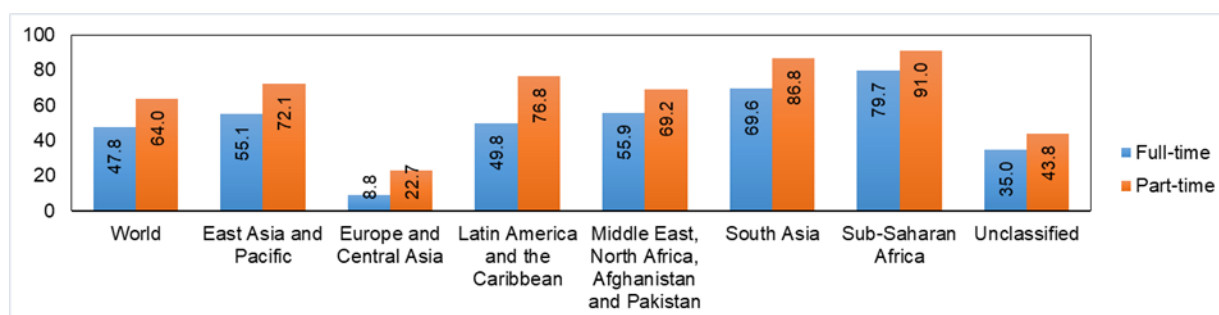
The proportion of informal employment among parttime workers is much higher than among full-time workers (64 per cent vs. 48 per cent) (**Figures 14 and 15**). In low-income countries, informal employment accounts for 88 per cent of full-time and 94 per cent of part-time jobs. By contrast, the rates are 8 per cent and 20 per cent, respectively, in high-income countries. In Sub-Saharan Africa, 78 per cent of full-time and 91 per cent of part-time workers are informally employed.

Figure 14. Percentage of informal employment in total employment by work time and national income group



Source: Authors' analysis of ILOSTAT – Labour Force Statistics – Informal employment rate by sex, age and working time arrangement (%) (Aug 2025), including data for 138 countries. Country classification by income and region follows the World Bank Country and Lending Groups (2025). Data points marked as 'Unreliable' in the original dataset are excluded from the analysis. The latest available data for each country is used. Reported values represent either regional averages or averages across countries grouped by income level.

Figure 15. Percentage of informal employment in total employment by work time and region



Source: Authors' analysis of ILOSTAT – Labour Force Statistics – Informal employment rate by sex, age and working time arrangement (%) (Aug 2025), including data for 138 countries. Country classification by income and region follows the World Bank Country and Lending Groups (2025). Data points marked as 'Unreliable' in the original dataset are excluded from the analysis. The latest available data for each country is used. Reported values represent either regional averages or averages across countries grouped by income level.

3. OSH risks and challenges in the informal economy

The evidence base on OSH in the informal economy, as captured in this scoping review, is highly uneven and fragmented across global, regional, national and local studies. Among the 30 sources reviewed, most (n=8) were local case studies examining particular cities or communities in Africa, Asia and Latin America. Their sample sizes ranged from 40 to 300 workers, often in selected sectors or occupations such as welders or fishmongers (e.g. Mashimbyi et al. 2025; Adei et al. 2022a; Adei et al. 2022b). This combination of small, context-specific samples and the general shortage of robust data on OSH-related risks, exposures or health outcomes among informal workers limits the ability to draw generalisable findings. However, the inclusion of two global, cross-sectoral studies (Levitsky et al. 2019; Barten et al. 2008) and several systematic reviews on specific occupations, such as domestic workers (Malhotra et al. 2013) and respiratory hazards in India (Chakraborty et al. 2025), provides broader comparative insights.

Certain countries – notably Thailand and Ghana – are comparatively well represented in the literature, reflecting the presence of strong grassroots workers' associations or large research projects. One prominent example is the five-year multidisciplinary project at the Agbogbloshie e-waste site in Accra, Ghana, which generated extensive evidence on OSH risks and environmental health (Fobil et al. 2021). Beyond these contexts, however, detailed research on informal work remains scarce or fails to explicitly distinguish informal workers. Studies examining the relationship between informal work and broader health outcomes are more common, as are those that include informal workers within broader labour force samples. However, the latter approach makes it challenging to isolate or quantify the specific OSH impacts of informal employment (e.g. Rast et al. 2025).

In addition to the challenges outlined in this section, the informal economy is often absent from official statistics and policy frameworks. Data on OSH outcomes among informal workers is sparse, fragmented or nonexistent, contributing to the invisibility of this workforce cohort in both national and international policymaking (Julià et al. 2019; Naicker et al. 2021; Oladosu et al. 2025). This invisibility has direct consequences for OSH: without adequate data, legislative frameworks or monitoring mechanisms, informal workers remain unprotected by law, excluded from social insurance and face barriers to accessing healthcare.

3.1. Evidence on OSH risks and challenges in the informal economy

3.1.1. Some studies find that informal workers are more vulnerable to occupational injury and illness, whereas others find comparable rates to those in formal employment

Comparative analyses of OSH outcomes between informal and formal workers remain limited and highly context-specific. The available evidence generally suggests that informal workers face higher rates of occupational injury and illness, although these differences vary by country, occupation and study design:

- **Global evidence:** A systematic review and meta-analysis of health services use among informal economy workers worldwide found that informal workers were more likely to have **depression** than formal economy workers (Naicker et al. 2021.)
- **Cambodia:** Data from the Labour Force Survey shows that the prevalence of occupational injury or illness was higher among informal workers (9.14 per cent) than among formal workers (6.07 per cent). Injuries and illnesses were nearly twice as common among men as among women across the total sample, which included both formal and informal workers; 10.54 per cent of men compared to 5.90 per cent of women experienced injuries or illnesses. In informal employment, the gender gap was wider; injuries or illnesses were reported by 11.01 per cent of informally employed men and 6.07 per cent of informally employed women, compared to 7.17 per cent of men and 5.50 per cent of women in formal employment (Dike 2019). Analysis suggests that informal employment significantly increased the probability of occupational injury or illness by 3.38 percentage points. However, as this analysis did not control for other factors, such as personal, job and firm characteristics, the association between informal employment and occupational health outcome in this study is not robust (Dike 2019.)⁸
- **Thailand:** Using the 2006–2019 Thai Informal Employment Survey (IES) data, Korwatanasakul (2021) also found that informal employment is associated with a higher probability of experiencing occupational injury and greater injury severity. Working environment problems (nonbehavioural risk factors) and safety issues at work (behavioural risk factors) were two further factors associated with a high probability of occupational injury and illness.
- **Central America:** Drawing on data from the first Central American Survey of Working Conditions, Porras et al. (2017) found that informal workers reported a higher prevalence of musculoskeletal pain than formal workers (Porras et al. 2017). However, the research also found that the **association between exposure to psychosocial risk factors and workers' musculoskeletal pain** was similarly strong for both formal and informal workers (Ruiz de Porras et al. 2017). The authors explain this by proposing that even formal work can pose high stress in an uncertain labour market, and that the scale of informal work's harmful health effects may overshadow any additional effects of psychosocial risk factors (Porras et al. 2017).
- **Serbia:** A one-year prospective study in a rural community found that informal workers were twice as likely to be injured due to falls at work compared to formal workers. On the other hand, formal workers experienced more traffic-related injuries while driving to and from work (Duric 2018).

⁸ Data from Cambodia LFS data, 2012 (Dike 2019).

3.1.2. Occupation-specific risks and hazards vary widely across the informal economy

Variation in hazards across different types of informal jobs and workplaces makes firm conclusions difficult, as cross-sectoral and cross-country comparisons are rare in the literature due to the considerable variation in risks across geographies, occupations and roles. Similarly, the extent to which formalisation can reduce risks also depends on the sector. For example, formalisation could reduce risks in traditionally dangerous occupations, such as mining, whereas in sectors such as agriculture, smallscale, informal subsistence farming could be less risky in some cases than mechanised formal farming (Naicker et al. 2021). The table below provides an overview of the most frequently reported occupational risks across geographies and categories. The categories and examples provided below are by no means exhaustive and give concrete risks and hazards without reference to solutions, since that is the focus of Chapter 4 - Policies and practices to improve OSH for informal workers.

Table 2. Overview of the most reported OSH risks for informal workers across geographies and categories

Type of OSH risk	Example occupations in the informal economy where risks have been documented
Musculoskeletal risks	Informal workers can suffer from musculoskeletal problems due to repetitive movements, high job demands, psychosocial risk factors and poor work posture (Porras et al. 2017; Nankongnab 2015). For example, a study of informal e-waste workers in Ghana found musculoskeletal disorder symptoms among 90 per cent of workers, including the lower back, knees, shoulders, upper arms, lower legs and neck (Fobil et al. 2021). In a study of 979 informal homebased handicraft workers in Thailand, the majority, 72 per cent, reported at least one physical injury or musculoskeletal disorder symptom in the past year (Tangkittipaporn et al. 2006, in Nankongnab 2015).
Psychosocial risks	Psychosocial risks among informal workers can be associated with prolonged or irregular working hours. Working long or irregular hours can negatively affect wellbeing and access to healthcare. Working over 40 hours a week is also frequently cited as a risk factor for musculoskeletal injury and depression (Hargreaves et al. 2019). As informal workers' hours vary by occupation, season and other factors, there is no conclusive evidence of how they compare with those of formal workers globally. Informal workers in the EU tended to work less than 20 hours or more than 48 hours more frequently than formal workers, and also 'had higher involuntary part-time hours and higher long-working hours' (2010 data from Julia et al. 2018). Psychosocial risks among informal workers can be associated with less autonomy. Overall, lower levels of autonomy among informal workers (Julia et al. 2018) can be because they adjust more to external factors and influences (e.g. clients, agencies and even the weather), adjusting

Type of OSH risk	Example occupations in the informal economy where risks have been documented
	their work hours and foregoing income in cases such as heat stress, for example (Sverdlik et al. 2024). In a systematic review of female domestic workers across varying degrees of (in)formality, Malhotra et al. found major infringements on workers' autonomy, including that female domestic workers were not allowed to leave their employer's house alone. For example, in one of the reviewed studies (Wong 2010), restriction on movement was cited as the top 'work-related stressor' (77.6 per cent of respondents), followed by 'denial of a rest day' (70.7 per cent of respondents) (Malhotra 2013). Psychosocial risks among informal workers can disproportionately impact women. Captured in a review by Lund et al. (2016), Santana et al. (1997) argued that informal work can increase the likelihood of developing psychiatric symptoms among women. Informally employed young female domestic workers and waste pickers were further identified as especially vulnerable to minor mental disorders (Lund 2016). In their systematic review of female foreign domestic workers, Malhotra et al. (2013) found nine articles (out of 32) addressing topics of abuse and adverse work conditions. They noted that female domestic workers 'often occupy an alien status within the legal framework of many of the host countries', with degrees of formality varying depending on sending and host countries (Malhotra et al. 2013). Their precarious legal position can make female domestic workers more vulnerable to various forms of abuse. Of the 32 reviewed articles, 16 named some form of abuse (physical, verbal or sexual) among their key findings (Malhotra et al. 2013). While health and safety risks are not always strictly occupational, Sverdlik et al. (2024) call for a more holistic and gender-sensitive view of risks at home and at work. The absence of infrastructure, such as safe toilets at work or public lighting, can also increase both psychological and physical risks to women working in informal sectors (Sverdlik et al. 2024; Kawakami 2024).
Biological hazards	Informal workers are at risk of exposure to biological hazards in occupations such as domestic work or waste picking. A systematic review on informal waste picking found that biological hazards were the third-most-reported occupational hazard category, including contact with bacteria, viruses, insects, plants, animals and human substances, as well as being pricked by syringes (Zolnikov 2021). Another occupation vulnerable to biological hazards is domestic work, often carried out informally. A systematic review on the health issues of female foreign domestic workers – many of whom are informal workers – found that infectious diseases, such as parasitic infections, were described as a health risk in three large-scale studies (AbuMadi et al. 2008, Abahussain 2005, and Hamdi & Ibrahim 1997 – all in Malhotra et al. [2013])

Type of OSH risk	Example occupations in the informal economy where risks have been documented
Disasters, natural and technological	Informality can intersect with other factors, such as poor working and housing conditions and extreme weather events, to produce health risks (Sverdlik et al. 2024). For example, informal merchandise sellers in Zimbabwe can suffer respiratory illnesses because they are unequipped for rain, as bringing umbrellas or high visibility gear is associated with possible government detection (Sverdlik et al. 2024). Using research on informal workers in Zimbabwe and India, Sverdlik et al. (2024) showed that natural disasters, such as droughts, floods and heat waves, have serious public and occupational health consequences for informal workers. According to surveys in Harare and Masvingo (Zimbabwe), for example, 76 per cent of informal urban agriculture workers were affected by the unavailability of water (Sverdlik et al. 2024).
Electricity and fire	Risks from handling electricity and fire in informal economies often result from a combination of occupation-specific hazards and inadequate infrastructure/regulation. In assessing occupational safety risks among informal welders in Pretoria, South Africa, Mashimbyi et al. (2025) identified electric shocks as a top concern in informal welding work. Some 87 per cent of welders (n=40) reported fears of occupational hazards, including 'burns, electric shock, cuts, fire, eye problems and gas tank explosion.' Burns and lacerations were also common among fishmongers who prepared smoked fish over an open fire (Adei et al. 2022b). Lund et al. (2016) explain the broader 'regulatory and infrastructural context' of repeated market fires threatening traders in Accra. While the primary causes of fire were leaving fires overnight and using makeshift electrical connections, the lack of accessible water sources and fire hydrants in the marketplace combined with the highly flammable wooden stalls worsened the risks, meaning insurance companies would not insure them and the local authority did not provide electrical connections, increasing the traders' vulnerability (Lund et al. 2016).
Indoor air quality	Indoor air quality can affect a range of informal economy occupations exposed to industrial dust, including informal workers in cotton textiles, mining, stone cutting, agriculture, chemicals, handloom weaving, welding, jute, sawmills, quarries and marble cutting (Chakraborty et al. 2025). The underlying issues behind these risks include working in confined spaces with limited air circulation, limited access to Personal Protective Equipment (PPE) and exposure to outdoor air pollution (Chakraborty et al. 2025).
Noise	Exposure to loud noise and the ensuing noise-induced hearing loss are persistent hazards in many informal workplaces, according to multiple studies (Lund et al. 2016; Barten et al. 2008; Moyce et al. 2018; Naicker et al. 2021; Siriruttanapruk et al. 2009).

Type of OSH risk	Example occupations in the informal economy where risks have been documented
Industrial accidents	High accident rates are common in informal employment because limited supervision and organisation can increase workers' exposure to occupational hazards, as noted by Cui et al. (2022) in their review of informal employment in the forestry sector. Among 300 informal workers surveyed in Bangkok, Thailand, occupational accidents were reported by 50 per cent of taxi drivers, 70 per cent of motorbike taxi drivers, 32 per cent of hairdressers and 71 per cent of tailors (Arphorn et al. 2014). Among informal welders in South Africa, safety concerns included malfunctioning equipment, hazardous tasks such as overhead welding, and inconsistent PPE use, among others (Mashimbyi 2025).
Exposure to chemicals	Chemical exposure is a recurrent issue across multiple informal occupations. Domestic workers are often exposed to household cleaning chemicals (Malhotra et al. 2013), while informal forestry workers and waste pickers are exposed to chemical toxins, whose effects are frequently aggravated by the lack of PPE use (Cui et al. 2022; Zolnikov et al. 2021). In their systematic review of respiratory diseases in India's informal sectors, Chakraborty et al. (2025) list chemical hazards in the cotton textile, chemical, welding and jewellery industries, as well as among agricultural workers exposed to pesticides. Similarly, Kawakami (2024) describes small-scale interventions, such as labelling chemical containers and installing new equipment to absorb mercury vapour for handicraft workers in Nepal, or creating designated pesticide storage facilities outside workers' homes for cotton farmers in India (Kawakami 2024).

3.1.3. Systemic challenges exacerbate OSH risks for informal workers

Apart from sector-specific risks, certain characteristics of informal economies can exacerbate OSH risks across sectors and regions. In describing these overarching systemic challenges below, we do not seek to attribute any causal links. However, the literature highlights these factors as possible explanations – and aggravations – of the sector-specific risks that exist in informal economies.

Informal workers can be unaware of the gravity of the risks to which they are exposed and how to mitigate their effects. The literature reports that informal workers are unaware of their rights (Lund et al. 2016) and lack OSH education (Naicker 2021). Building on past studies, Adei et al. (2022b) cite as the reasons for overlooking occupational hazards: 'illiteracy, poverty, ignorance, and fear of losing [...] jobs'. Moreover, informality is often not a matter of choice; therefore, even when conscious of OSH risks, workers may not have the means to mitigate them or to strive for a safe working environment. Despite some positive practices detailed in Chapter 4, many informal workers lack mechanisms to express their needs and preferences and participate in decision-making (Lund et al. 2016).

Workers in informal employment can experience barriers to accessing adequate healthcare, including both preventative and acute care. Such barriers relate to challenges around affordability and accessibility of healthcare in some countries, particularly 'high costs of transportation, long waiting times, loss of daily wages or jobs' (Oladosu et al. 2023). Since informal workers are usually paid for time worked, health visits entail a high opportunity cost in terms of lost income, further aggravat-

ed when hospitals are far away and typical working hours are long. In a systematic review of factors affecting access to healthcare, Oladosu et al. found that enrolment in a governmental health scheme was important in removing the financial barriers to healthcare (Oladosu et al. 2023). Despite positive examples of developing countries offering national or communitybased health insurance schemes to informal workers (such as Ghana, Bangladesh, Indonesia and Kenya, all cited in the review), the authors also note that subsidised insurance for informal workers remains an exception (Oladosu et al. 2023).

A subgroup of informal workers is home-based, which can present specific OSH risks and challenges. Homeworking can blur the boundaries between work and home, and home-based informal work is intertwined with other work required by social and family commitments (Barten et al. 2008). Sverdlik et al. point out that ‘few studies carefully consider the interplay between informal workers’ health risks at the home and workplace’ (Sverdlik et al. 2024). As documented in the literature, occupational risks in workers’ homes that are also workplaces include poor sanitation and access to clean water (Zolnikov et al. 2021), as well as heatrelated challenges, including heat stress from cooking and air pollution from burning fuel (Sverdlik et al. 2024). Focusing solely on home-based workers in the informal economy in Thailand, Nankongnab et al. rank eyesight loss due to poor lighting in workers’ homes as the top concern, ‘followed by dust exposure and stresses on the body, including musculoskeletal disorders (MSD)’ (Nankongnab 2015).

New risks associated with climate change can further exacerbate existing risks for informal workers. For example, informal factory workers in Indore reportedly experienced a ‘trade-off’ between wearing PPE, such as protective masks, to prevent respiratory issues in dusty environments and increased exhaustion and feelings of suffocation during heatwaves (Sverdlik et al. 2024). While this is more closely connected to working conditions than to informality itself, Sverdlik (2024) identifies many such trade-offs among informal workers. Moreover, many of these risks disproportionately impact women, as explained later in this section. For example, based on case studies in India and Zimbabwe, Sverdlik demonstrated that women tend to assume responsibilities for water provision and cooking, which become more dangerous during heatwaves (Sverdlik et al. 2024).

Ineffective governance is further exacerbated when there is no institutionalised platform for dialogue about risk perceptions and solutions among invested parties, including informal workers and local government. This effect is well demonstrated in a case study from Accra’s public markets in Lund et al. 2016, where the lack of communication between the Accra Metropolitan Assembly and market traders increased the health risks. The Assembly did not install electrical connections in the marketplaces because of fire hazards posed by wooden stalls, but doing so without consulting traders’ needs only prompted traders to bring their own, less safe electrical connections, increasing the risk of fires and creating antagonism.

3.2. Vulnerable groups in the informal economy face distinct OSH challenges

3.2.1. Women’s disproportionate involvement in unpaid care and domestic work can exacerbate OSH risks for informal workers

Although the global proportion of women in the informal economy is slightly lower than that of men, women have higher rates of informal employment in some regions, namely the Middle East and North Africa, Afghanistan, Pakistan, South Asia and Sub-Saharan Africa (Figures 3 and 4, Section 2.2). In addition to their work in the informal economy, women in many cultures also take on significant unpaid responsibilities, such as childcare, securing drinking water and preparing meals, which can exacerbate workrelated fatigue and occupational risks. Women waste pickers in Sub-Saharan Africa had significantly

higher-dependency ratios⁹ than their male counterparts, meaning they would have to support more dependents with their incomes (Ogando et al. 2016).

Women street vendors in Mexico City reported having to bring their children to work because of insufficient childcare facilities (Hernandez et al. 1996, in Barten et al. 2008). The ‘double-burden of income earning and family care’ means that women in some countries experience even greater health benefits of transitioning into formalised employment than men (Lee and Di Ruggiero 2022). However, formalisation can only deliver these benefits if formal employment guarantees women better social protection (Lee & Di Ruggiero 2022).

When impacts on women were recorded in the literature, they indicated that women experience greater adverse health risks from informal work than men overall. Writing about Zimbabwe, Sverdlik et al. (2024) noted that many women in the informal economy remain in physically exhausting yet low-paid roles with limited advancement, while men can assume supervisory roles in informal factories and operate machinery. This result aligns with the findings of Ogando et al. (2016), who examined behaviours of informal waste pickers in four cities in Sub-Saharan Africa and Latin America and found that female waste pickers may be denied access to the most valuable recyclables, are often paid less than men for collecting the same materials and do not have the same opportunities to hold a position of responsibility in their work groups. When they do, they receive less respect than their male counterparts (Ogando et al. 2016).

Studying informally employed fishmongers and welders in Ghana, Adei et al. (2022b) found that women were almost 1.5 times more likely than men to be exposed to occupational injuries and suffer from occupational diseases. However, the study also notes that all fishmongers were women and all welders were men, meaning that this is likely an occupation-related difference. Nonetheless, these findings suggest that women in the community worked in occupations with higher rates of occupational injury and disease than men, consistent with other studies’ findings of a greater impact of occupational health risks on women across contexts (CamposSerna et al. 2013; Mofawi et al. 2019).

Finally, evidence suggests that female farmers in the informal sector suffer dehydration and headaches significantly more often than men during heatwaves. For example, 80 per cent of women reported dehydration and headaches in a study in Indore, India, compared to 50 per cent of men (Sverdlik 2024). The authors linked this finding to the fact that female workers often felt more unsafe in the absence of safe toilets, causing them to ‘deliberately reduce their water intake’ (Sverdlik 2024).

To summarise, occupational risks for women and men tend to differ, as they often concentrate in different occupations or at different levels. However, women are more affected by the domestic responsibilities of providing drinking water, cooking and childcare, and also more likely to feel physically unsafe, which can affect their choices when at work.

3.2.2. Age and experience shape exposure to OSH risks among informal workers

Several papers indicated that younger workers could be more exposed to occupational health risks than older workers, not only because they are ‘one of the largest population groups in the informal sector’ (Oladosu et al. 2023) but also because of increased vulnerability to OSH risks. A study of informal fish processors and welders that compared young apprentices with more experienced, older workers who owned workshops concluded that older workers were more likely to seek out health services when needed. This

⁹ In this context, the household dependency ratio is understood as the ratio of household members not in the labour force (e.g. children) to those in the labour force. This ratio is used to demonstrate how many dependents a productive member of the household needs to support.

was for two main reasons: greater awareness of health risks from experience and the ability to afford national health insurance (Adei et al. 2022a). In addition, young people in this study rarely had union membership that would help them pay for healthcare, and they had less autonomy at work to take time off for a health visit. Adei et al. (2022b) also found that respondents in Kumasi, Ghana, with more than ten years' work experience were less likely to develop occupational diseases than those with four or fewer years' experience (Adei et al. 2022b). However, the likelihood of developing occupational diseases again increased among participants aged 50 or older (Adei et al. 2022b). This finding is consistent with that of Davis (2012), who found that experienced workers perceived greater workrelated risks, although the 'risk rating' subsequently declined after a peak.

3.2.3. Precarious legal status and limited access to protections heighten OSH risks for migrant workers

Migrant workers in Europe were 'more likely than native workers to be exposed to high temperatures, loud noises, strong vibrations and fast work speeds and to stand for long periods of time' and 'often worked without contracts' (Ronda Pérez et al. 2012). Furthermore, migrant workers in the US had higher rates of occupational fatalities than nonmigrants (Ahonen et al. 2007).

Tracing the occupational safety and health, as well as healthseeking habits, of international migrant workers can be more difficult than for other populations. Migration scholars have been engaging in a debate on the health of working migrants since the 1990s, drawing on US immigration statistics to hypothesise that migrants are healthier because of the so-called 'salmon bias'. The hypothesis is that retired and ill migrants are encouraged to return to their countries of origin, lowering mortality statistics (Abraido-Lanza et al. 1999). There is also a commonly held assumption that economic migration and longdistance travel entail a degree of self-selection, meaning migrant populations may be healthier than their non-migrant counterparts (e.g. Lu & Qin, 2014). There is no conclusive evidence for either hypothesis, but they are helpful examples of the specificities of migrant populations and the possible implications for health data.

In a study on undocumented day labourers in San Francisco, Walter et al. (2002) found that immigrant informal workers were aware of being 'more expendable' because of their status. However, some of them made conscious sacrifices, working in riskier conditions to get higher earnings (Walter et al. 2025). However, immigrant workers may not be aware of the risks they are undertaking in other cases. Moyce and Schenker (2018) point out that **safety training is often unavailable in workers' native language, which is significant given that a lack of language knowledge often correlates with riskier manual occupations** such as construction work (Moyce & Schenker 2018). Migrant workers on the move can also easily miss safety training. Even when trained, there can be other barriers, such as the cost of purchasing PPE or its perceived impracticality (Ahonen et al. 2007).

The combination of high-risk occupations and lack of OSH education contributes to migrant workers having a significantly **higher injury rate compared to the non-migrant population**. Most of the studies reviewed by Ahonen et al. (2007) were based on administrative data and thus focused on formal employment. Even without the barrier of illegality, however, there is a pattern of more injuries, longer recoveries and more work-related fatalities in some cases among migrant populations. This pattern would likely apply to migrant workers in the informal economy, too, who may lack work permits, reducing their motivation to report incidents and illnesses or to classify them as work-related (Ahonen et al. 2007).

The systematic review also found multiple studies showing that **newer arrivals from countries with a different native language were at higher risk** (Ahonen 2007). Strong and Zimmerman (2005) and Pransky et al. (2002) also found that immigrant workers had longer periods of work absence when injured,

and faced additional barriers, such as lack of knowledge about the healthcare system, lack of insurance and ‘fear of reprisal for demanding better work conditions or reporting an injury or illness’ (Ahonen et al. 2007).

Finally, **migrant workers in the informal economy are at higher risk of abuse in their workplaces because of their precarious legal and employment status**. Depending on a single employer for housing or legal permission to stay in the country can increase a migrant worker's vulnerability when working conditions are unsafe (Moyce & Schenker 2018). The watchdog organisation Human Rights Watch has criticised the *kefala* sponsorship system in the Middle Eastern Gulf countries for granting too much power to employers, comparing some of their practices, such as beating domestic workers, retaining their passports and not allowing them to leave the house, to modern slavery (Human Rights Watch 2008).

4. Policies and practices to improve OSH for informal workers

This chapter considers several approaches to improving OSH for informal workers, focusing on the effectiveness of each method and potential barriers or negative consequences associated with its use. We discuss both top-down (government-led) and bottom-up (worker-led) approaches, while recognising that some practices, such as negotiations between informal workers and authorities, do not neatly fit into either category.

Reliable evidence on this question is not easy to find. The evidence base for OSH interventions is thin and fragmented, and rigorous evaluations of OSH programmes or interventions are rare (see Lloyd's Register Foundation [2025] for a discussion of the evidence base's sparsity). In this context, it is unsurprising that the sources identified in the present study included scant robust evidence on policies and practices to improve OSH. Accordingly, this chapter draws primarily on case studies or informal descriptions of attempts to improve OSH for informal workers, which typically lack detail and consideration of the longer-term effects of the interventions, policies or practices they discuss. This chapter does not aim, therefore, to reach firm conclusions about the most effective methods of improving OSH for informal workers, but to highlight potentially promising approaches and provide practical examples of their use.

4.1. Although formalisation can enhance protection, it is not a guaranteed path to better OSH

Health and safety at work is a human right. The Universal Declaration of Human Rights enshrines the right to 'just and favourable conditions of work' for all workers, and the ILO has declared that safe and healthy working environments are a fundamental principle and right at work. In practice, however, national and international OSH legislation generally applies only to formally employed workers. For instance, at least in a narrow reading, the 1981 ILO Occupational Safety and Health Convention covers only employees who work in a workplace owned and controlled by an employer (ILO 1981; BamuChipunza 2018). National OSH legislation, too, generally only covers workers in an employer-employee relationship, as Jawahar (2025) highlights in India and Bamu-Chipunza (2018) in South Africa.

One solution to this issue is to formalise informal working arrangements, establishing contractual employer-employee relationships that bring informal workers within the remit of existing OSH legislation. Both the UN and the ILO support this approach: target 8.3 under the UN's Sustainable Development Goal #8 is to 'promote development-oriented policies that [...] encourage the formalization and growth of micro-, small-, and medium-sized enterprises', while ILO Recommendation #204, adopted in 2015, concerns 'the transition from the informal to the formal economy' (Levitsky 2019). Formalisation was often mentioned as a potential means of improving OSH by the sources included in our evidence review (e.g. Zolnikov et al. [2021], who note that many of the articles included in their systematic review advocate formalisation).

However, we found very few concrete examples of unequivocally successful formalisation. Box 1 describes an apparently successful attempt to improve OSH for Brazilian ceramics workers that included formalisation as one element of a multifaceted, multi-party intervention. Another notable attempt to improve informal workers' OSH via formalisation was the Thai Homeworkers Protection Act in 2010, which gave homeworkers in Thailand a suite of rights, including the right to a contract from their hirer (Nankongnab et al. 2015).

Box 1. A multifaceted intervention to improve OSH for informal workers

In 2008, the Workers' Health Reference Centre (CEREST) in Piracicaba, Brazil, was contacted by a ceramics worker who reported workrelated upperlimb pain. CEREST found that she was informally employed and had deplorable working conditions: her workplace lacked toilets, had poor lighting, had unprotected machinery, and had very unsanitary living conditions in the housing provided for workers. In response to this finding, CEREST established a multi-institutional team comprising members of the Public Ministry, the Ministry of Labour and Employment, the Ministry of Social Development, and community councils. This team then reached out to all 40 ceramics firms in the region, both formal and informal, to discuss their employment conditions and OSH. An agreement was reached between the ceramics workers and their firms' owners that reduced the fines the owners owed in exchange for the owners investing in OSH and formally employing their workers. As a result, the ceramics workers' working and living conditions improved, their job satisfaction increased, and they gained access to new benefits, such as workers' compensation. The firms also saw profits increase.

Sources: Lund et al. 2016; Gomes 2012; OECD/ILO 2019.

However, there are many barriers to the formalisation of informal work, especially when formalisation is a responsibility individuals must shoulder rather than a government policy. Many small businesses or workers may not be willing or able to formalise, as the authors of ILO 2021 discuss in the case of South Africa. For example, there may be fees associated with the formalisation process that informal workers cannot afford, formalisation may require internet access and digital literacy to enable online form-filling, or workers may be unaware (or unconvinced) of the benefits of formalisation (ILO 2021a).

Moreover, even when formalisation is both possible and desirable for workers, there is no guarantee that it will improve OSH. As Lund et al. (2016) noted, many developing countries lack the capacity to regulate even formal companies. Jawahar (2025) makes a similar point in the context of India, arguing that the country faces OSH challenges even in the formal economy due to poor enforcement and a lack of accountability.

One example of an attempt at formalisation that has run into enforcement challenges is the Thai Homeworkers Protection Act. Compliance with the Act has been patchy: HomeNet Thailand has reported that many hirers have failed to provide homeworkers with contracts or to comply with the other requirements of the Act, such as making workers aware of hazards (Nankongnab et al. 2015).

Formalisation may also have unintended negative consequences for workers. For instance, Zolnikov et al. (2021) note that the formalisation of waste-picking work might appear to be an obvious way to improve OSH for wastepickers, but that it does not always produce the intended effects: waste-pickers who work in waste management centres may still face numerous OSH risks, and even when formalisation does reduce threats to workers' health, it might also reduce their income. This finding is worrying in the light of Alfers & Rogan's (2014) research, which found that, while formal employment was significantly associated with health in South Africa, its protective effect on health appeared to stem from the higher incomes associated with formal employment.

4.2. Extending access to healthcare, social security and OSH services can mitigate risks and improve outcomes

Several sources included in our review suggested that providing informal workers with access to affordable healthcare, social security schemes and OSH services may improve both workers' general health and their OSH. While this is an indirect solution to poor OSH that does not directly address the OSH risks informal workers face, the evidence suggests it is likely to improve their situation. For instance, Adei et al. (2022a) found that informal workers in Ghana not enrolled in Ghana's National Health Insurance Scheme were 85.4 per cent less likely than their enrolled counterparts to adopt 'good healthseeking behaviour' that would be likely to improve health.

Ghana's insurancebased healthcare system is typical of many countries' healthcare and social security systems, which are generally contribution-based (Drouin et al. 2007). This system can be a barrier for some informal workers, who may find that insurance premiums or contributions are beyond their means. One solution to this is low-cost public healthcare or social security schemes, as advocated by Olivier (2007). For example, India has several state-run welfare schemes that provide social security for 'unorganised workers', some more active and comprehensive in coverage than others (Olivier 2007; India Development Review 2025). The Indian Code on Social Security 2020 also mandated the creation of two national-level boards, a National Social Security Board and a State Unorganised Workers' Welfare Board. However, critics note that these boards are not yet operating at capacity or creating meaningful change (India Development Review 2025).

In countries where most informal workers already have access to healthcare and social security, the next step to improve their OSH is arguably to extend their access to OSHspecific services. Several sources argued for incorporating these services into existing public health systems rather than leaving them to labour ministries, at least in developing countries (Barten et al. 2008; Levitsky 2019). For instance, Barten et al. (2008) criticised the application of the 'Northern model', in which OSH is made the responsibility of the labour ministry rather than the health ministry in contexts where most workers work informally, where the division between 'work' and 'home' is unclear, and where industrial processes might affect not just the workers' health but that of local populations.

Incorporating OSH services into public healthcare has been tried in practice, with some success. For example, Siriruttanapruk et al. (2009) reported on an ILO-funded pilot project that provided OSH services to informal workers through primary care units in Thailand. Staff from primary care units would visit targeted workplaces twice a month to conduct risk assessments, provide health surveillance for chronic and work-related diseases, supply safety equipment, and deliver basic OSH training. Siriruttanapruk et al. (2009) identified several challenges the project faced, such as barriers to accessing specific workplaces and limited time and resources for implementation, alongside several good practices implemented by the primary care units involved. The project also appears to have successfully avoided a common pitfall in integrating OSH services into existing healthcare provision: prioritising medical issues over other OSH concerns, such as hazard prevention and ergonomics (Lund et al. 2016).

Health authorities may also play a role in the surveillance of and support for workplaces with poor working conditions. For instance, the Brazilian public health authorities initiated the successful intervention described in Box 1. In their article on welders in South Africa, Mashimbyi et al. (2025) similarly suggest that health authorities should take the lead in identifying and reaching out to workers in particularly hazardous environments.

4.3. Although worker collectives strengthen OSH advocacy, they cannot replace state responsibility

Notable advances in securing OSH protection for informal workers have been achieved through self-organising collectives. This section discusses two particularly well-known and successful examples of such collectives: the Self-Employed Women's Association (SEWA) in India, and HomeNet Thailand.

SEWA was founded in 1972 and brings together three million informal workers (SEWA 2025). As a trade union that aims to ensure all its members are self-reliant, SEWA takes a holistic, comprehensive approach to improving the working conditions of Indian women. Firstly, it offers a wide range of affordable services to its members, including low-cost healthcare, pensions, childcare, insurance and credit (Olivier 2007; Tsoutouras & Lund, 2016; SEWA 2025). Sewa also a) provides targeted OSH support, such as OSH training for kitemakers and for women who mix recycled cardboard to construct roofs (Tsoutouras & Lund 2016), b) works with universities, equipment design institutes and the private sector to design practical interventions that improve informal workers' health and incomes (Lund et al. 2016), c) supports women to self-organise to, for example, keep roads open to ensure customers can reach them (Lund et al. 2016), and d) is involved in research and policy work concerning informal workers (Lund et al. 2016).

HomeNet Thailand is a similarly successful and long-lived organisation that engages in an equally wide range of activities to improve the livelihoods of home-based informal workers in Thailand. Many of Thailand's laws and policies supporting informal workers, from the provision of universal healthcare in 2002 to the Homeworkers Protection Act of 2010, were enacted at least partly through HomeNet Thailand's campaigns (WIEGO 2025). HomeNet Thailand was also instrumental in creating the Federation of Informal Workers of Thailand in 2016 (WIEGO 2025). However, the organisation has also provided support for more tangible initiatives, such as collectives that provide OSH training for specific groups of informal workers (Lund et al. 2016) or cooperatives that rent spaces where their members can live and work together, enabling them to earn money without needing to find and pay for childcare (Tsoutouras & Lund 2016).

Organisations such as HomeNet Thailand and SEWA have offered vital support and services to millions of informal workers and have provided a model for several similar organisations (such as the Self-Employed Women's Union of South Africa, which is based on SEWA). However, shifting responsibility for OSH to workers themselves (or to self-organising worker cooperatives) may have drawbacks. For one thing, it shifts a burden away from other actors who should arguably assume some of the responsibility, such as governments and local authorities. In addition, the costs of self-regulation and self-organisation for workers can be high relative to their incomes (Lund et al. 2016), making it financially disadvantageous for workers to ensure their own OSH. In short, while trade unions and cooperatives can be instrumental in improving OSH for informal workers, these bottom-up approaches should not replace considered top-down policies and interventions.

4.4. Collaborations between workers and authorities yield localised OSH improvements, but face sustainability challenges

This section discusses cases in which informal workers have engaged with either local or national government to improve their OSH. As Lund et al. (2016) note, informal workers have rarely been actively involved in the development of national policy, though isolated examples of such engagement exist. For instance, as mentioned above, HomeNet Thailand was one of several organisations that successfully

campaigns for universal public healthcare in Thailand; the Self-Employed Women's Association (SEWA) in India has been involved in numerous national policy commissions concerning informal workers; and the Self-Employed Women's Union (SEWU) in South Africa was represented in the National Economic and Labor Council during South Africa's transition to democracy in 1994.

While the involvement of informal workers in national-level policy development is exceptional, numerous examples in the literature show practical collaborations between workers and authorities that result in smallscale yet significant improvements in informal workers' working conditions. These collaborations are generally initiated by worker collectives and sometimes facilitated by not-for-profit organisations such as WIEGO (Women in Informal Employment: Globalizing and Organizing, a global research and policy network). For instance, WIEGO and the Institute for Local Government Studies in Accra, Ghana, facilitated a dialogue between 100 head porters and representatives of the Ministry of Health and Ghana's National Health Insurance Scheme in 2012 that enabled more than 1,000 head porters to register for health insurance at reduced rates (Tsoutouras & Lund 2016). In Durban, South Africa, local traders attended a collaborative fire hazard mapping session with officials from the emergency services, which raised awareness among both traders and officials (who subsequently designed and delivered a fire safety course for the traders) (Alfers et al. 2016). In Masvingo, Zimbabwe, workers began monitoring risks at their homes and workplaces and feeding this information back to local officials to inform local planning in an initiative supported by the Zimbabwe Chamber of Informal Economy Associations and the Zimbabwe Congress of Trade Unions (Kadungure et al. 2023).

While collaborations of this kind can be productive, generating tangible improvements in informal workers' working conditions, they will likely constitute only a small part of the solution to improving OSH for informal workers. Firstly, by their nature, these smallscale and often local collaborations are unlikely to lead to broader nationwide change. Secondly, at least in the literature we examined, they generally appear to require NGOs or other policy organisations to play a coordinating and relationship-building role – although this may reflect the fact that only interventions supported by NGOs with the capacity to publish in English in academic journals find their way into the literature in the first place.

Finally, collaborations may be difficult to sustain. For example, Lund et al. (2016) report on a collaboration between the StreetNet Ghana Alliance (a network for trader organisations in Ghana), WIEGO, the Accra Metropolitan Assembly and Accra's Institute for Local Government Studies to improve the working conditions of market traders in Accra. This collaboration saw initial success: the Metropolitan Assembly unclogged a drain in one of Accra's markets, and relationships between traders and the local government improved. However, despite the Metropolitan Assembly agreeing to provide fire extinguishers in the markets, the extinguishers never materialised. The Metropolitan Assembly also asked the traders to form waste management committees to help monitor waste in the markets. However, the traders, already under considerable pressure to earn a living, struggled to form and maintain the committees. The collaboration mentioned above between market traders and the emergency services in Durban ended similarly. While relations between the two groups temporarily improved and they made some tangible progress, these initial gains were hard to sustain when officials' attention turned elsewhere (Alfers et al. 2016).

5. Conclusions

This scoping review has mapped key evidence and data on the relationship between OSH and the informal economy, drawing on academic and grey literature across a wide range of contexts. The findings reveal a clear consensus that informal workers represent a large and heterogeneous share of the global workforce – over 60 per cent of all employed people – yet remain largely outside the reach of formal regulation and protection systems.

The review highlights that informality is not a marginal or temporary phenomenon, but a structural feature of contemporary economies shaped by social, economic and technological change. Informal workers are disproportionately represented in sectors with inherently higher OSH risks, including agriculture, construction and waste management, and among groups that experience intersecting vulnerabilities such as women, migrants and young people. Despite the diversity of work arrangements, studies consistently found that informal workers often face greater exposure to occupational hazards and limited access to preventive and remedial OSH mechanisms.

Whilst there is considerable data about the size and composition of the informal economy, evidence on specific OSH risks and outcomes for informal workers remains fragmented and uneven across countries and sectors. Most available data come from small-scale or context-specific studies, limiting the generalisability of the findings. Nevertheless, the literature consistently identifies recurrent themes: hazardous work environments, limited access to healthcare, poor awareness of occupational risks and systemic exclusion from social protection. These challenges are often compounded by factors such as poverty, gender inequality and weak institutional governance. A larger body of evidence shows that informal workers generally report poorer health and more restricted access to healthcare than formal workers, with poor OSH likely contributing to these disparities.

Specific populations face particular OSH risks within the informal economy. In many regions, women encounter heightened exposure due to the combined pressures of paid and unpaid work responsibilities, which can lead to longer working hours, fatigue and increased vulnerability to OSH hazards. Young workers often enter the labour market through informal jobs with limited training or supervision and are more prone to experience workrelated accidents and illness. Migrant workers also face distinctive risks linked to precarious legal status and restricted access to health and social protections, which may in turn deter them from reporting unsafe conditions or seeking medical care. These overlapping vulnerabilities underscore the need for gender-, age- and migrant-inclusive OSH strategies that address the specific circumstances of different worker groups and recognise the heterogeneity of informal work arrangements.

While a range of initiatives have sought to improve OSH for informal workers, the evidence does not allow firm conclusions about ‘what works’, as we identified no rigorous impact evaluations. The most promising approach in any given country or sector will likely depend heavily on local context and economic conditions. For instance, focusing efforts on broader poverty reduction measures and extending access to healthcare might be a more effective way to improve informal workers’ health in some developing countries than more targeted OSH interventions. However, it seems likely that the most successful approaches to improving

OSH for informal workers will be multifaceted, perhaps combining topdown and bottomup elements. As this chapter has discussed, neither purely top-down nor purely bottom-up interventions are likely to be sufficient to create significant and lasting change. These approaches are also likely to involve sustained collaboration between authorities, NGOs and workers themselves.

Further research is needed to strengthen the evidence base on OSH in the informal economy. Large-scale, representative data collection efforts, such as national labour force or working conditions surveys, are essential to better understand differential exposure to OSH risks across workers in informal and formal economies. This effort will require innovative data-collection strategies that can effectively reach informal workers, who are often underrepresented in conventional survey frameworks. In parallel, more rigorous research – particularly impact evaluations – is needed to assess the effectiveness of interventions and policies, including the promising practices identified in this review. It could also be helpful to conduct case studies of countries that have adopted particularly active or innovative approaches to improving working conditions for informal workers. Countries such as Thailand and India, where both topdown and bottomup approaches have been attempted to improve informal workers' OSH, would make particularly interesting case studies; both have strong workerled collectives that advocate for better OSH, but have also passed legislation and formed national- and locallevel bodies to extend protections to informal workers. It would be valuable to understand how these bottomup and top-down approaches complement each other, which gaps remain in these countries' OSH provisions for informal workers, and the extent to which these models could be transferred to other countries. Building such an evidence base would enable policymakers and practitioners to design more targeted, equitable and sustainable approaches to improving OSH for informal workers worldwide. It could also be helpful to conduct case studies of countries that have adopted particularly active or innovative approaches to improving working conditions for informal workers.

References

- Abdelrahim, Rasha A., Victor O. Otitolaiye, Faris Omer & Zeena Abdelbasit. 2023. 'Scoping Review of the Occupational Health and Safety Governance in Sudan: The Story So Far.' *Safety and Health at Work* 14 (2): 174–84. As of 12 December 2025: <https://doi.org/10.1016/j.shaw.2023.03.007>
- AbraidoLanza, A. F., B. P. Dohrenwend, D. S. NgMak & J. B. Turner. 1999. 'The Latino Mortality Paradox: A Test of the "Salmon Bias" and Healthy Migrant Hypotheses.' *American Journal of Public Health* 89 (10): 1543–1548. As of 12 December 2025: <https://doi.org/10.2105/AJPH.89.10.1543>
- Adei, Dina., Anthony Acquah Mensah, Williams AgyemangDuah & Lewis AboagyeGyasi. 2022a. 'Factors Associated with HealthSeeking Behaviour among Informal Sector Workers in the Kumasi Metropolis of Ghana.' *Cogent Public Health* 9 (1): 2103932. As of 12 December 2025: <https://doi.org/10.1080/27707571.2022.2103932>
- . 2022b. 'Demographic and SocioEconomic Factors Associated with Exposure to Occupational Injuries and Diseases among Informal Sector Workers in Kumasi Metropolis, Ghana.' *Journal of Public Health* 30 (9): 2191–99. As of 28 October 2025: <https://doi.org/10.1007/s10389021014923>
- Ahonen, Emily Q., Fernando G. Benavides & Joan Benach. 2007. 'Immigrant Populations, Work and Health--a Systematic Literature Review.' *Scandinavian Journal of Work, Environment & Health* 33 (2): 96–104. As of 12 December 2025: <https://doi.org/10.5271/sjweh.1112>
- Alfers, Laura & Michael Rogan. 2015. 'Health Risks and Informal Employment in South Africa: Does Formality Protect Health?' *International Journal of Occupational and Environmental Health* 21 (3): 207–15. As of 12 December 2025: <https://doi.org/10.1179/2049396714Y.0000000066>
- Alfers, Laura., Phumzile Xulu & Richard Dobson. 2016. 'Promoting Workplace Health and Safety in Urban Public Space: Reflections from Durban, South Africa.' *Environment & Urbanization* 28 (2): 391–404. As of 12 December 2025: <https://doi.org/10.1177/0956247816647845>
- Andersson, Gunnar & Sven Drefahl. 2017. 'LongDistance Migration and Mortality in Sweden: Testing the Salmon Bias and Healthy Migrant Hypotheses.' *Population Space and Place* 23 (4): e2032. As of 12 December 2025: <https://doi.org/10.1002/psp.2032>
- Aronsson, Amanda E. & Tim Huijts. 2025. 'Informal employment as a social determinant of health: A conceptual framework and research agenda accounting for context'. *Social science & medicine* (1982), 368, 117809. As of 12 December 2025: <https://doi.org/10.1016/j.socscimed.2025.117809>
- Arphorn, Sara., Tomohiro Ishimaru, Kodchapan Noochana, Sirisak Buachum & Toro Yoshikawa. 2014. 'Working Conditions and Occupational Accidents of Informal Workers in Bangkok, Thailand: A Case Study of Taxi Drivers, Motorbike Taxi Drivers, Hairdressers and Tailors.' *The Journal of Sci-*

- ence of Labour* 90 (5): 183–189. As of 12 December 2025: <https://doi.org/10.11355/isljsl.90.183>
- BamuChipunza, Pamhidzai. 2018. ‘Extending Occupational Health and Safety Law to Informal Workers: The Case of Street Vendors in South Africa.’ *University of Oxford Human Rights Hub Journal* 2018: 61–85.
- Barten, Francoise., Vilma Sousa Santana, Larama Rongo, Walter Varillas & Trevino A. Pakasi. 2008. ‘Contextualising Workers’ Health and Safety in Urban Settings: The Need for a Global Perspective and an Integrated Approach.’ *Habitat International*, 32 (2): 223–36. As of 12 December 2025: <https://doi.org/10.1016/j.habitatint.2007.08.017>
- CamposSerna, Javier., Elena RondaPérez, Lucia Artazcoz, Bente E. Moen & Fernando G. Benavides. 2013. ‘Gender Inequalities in Occupational Health Related to the Unequal Distribution of Working and Employment Conditions: A Systematic Review.’ *International Journal for Equity in Health* 12 (1): 57. As of 12 December 2025: <https://doi.org/10.1186/147592761257>
- Carangan, M., KumYing Tham & Eillyne Seow. 2004. ‘WorkRelated Injury Sustained by Foreign Workers in Singapore.’ *Annals of the Academy of Medicine, Singapore* 33 (2): 209–213. As of 12 December 2025: <https://doi.org/10.47102/annalsacadmedsg.v33n2p209>
- Chakraborty, Debanjan & Subhashis Sahu. 2025. ‘Prevalence of Respiratory Issues and Intervention Strategies among Different Informal Sectors in India: A Systematic Review.’ *Discover Public Health* 22 (1): 359. As of 12 December 2025: <https://doi.org/10.1186/s12982025007241>
- Chen, Martha Alter. 2012. *The Informal Economy: Definitions, Theories and Policies*. WIEGO Working Paper No. 1, Women in Informal Employment: Globalizing and Organizing (WIEGO), August 2012. ISBN 978-92-95095-41-0
- Chen, Yuyu., Ginger Zhe Jin & Yang Yue. 2024. ‘Peer Migration in China.’ *Oxford Bulletin of Economics and Statistics* 86 (2): 257–313. As of 12 December 2025: <https://doi.org/10.1111/obes.12588>
- Cui, Shannon., Rattiya Suddeephong Lippe & Jörg Schweinle. 2022. ‘Informal Employment in the Forest Sector: A Scoping Review.’ *Forests* 13 (3): 3. As of 12 December 2025: <https://doi.org/10.3390/f13030460>
- Davis, Mary. E. 2012. ‘Perceptions of Occupational Risk by U.S. Commercial Fishermen.’ *Marine Policy* 36 (1): 28–33. As of 12 December 2025: <https://doi.org/10.1016/j.marpol.2011.03.005>
- Dike, Onyemaechi. 2019. *Informal Employment and Work Health Risks: Evidence from Cambodia*. IDEAS Working Paper Series from RePEc. Munich Personal RePEc Archive (MPRA). As of 12 December 2025: https://mpra.ub.unimuenchen.de/92943/1/MPRA_paper_92943.pdf
- Drouin, Anne. 2007. *Methods of Financing Health Care: A Rational Use of Financing Mechanisms to Achieve Universal Coverage*. International Social Security Association.
- Duric, Predrag., Karin Diaconu, Fiona O’May, Jan Rybovic & Mark Stevenson. 2018. ‘Informal WorkRelated Injuries: A One Year Prospective Study in a Rural Community in Serbia.’ *International Journal of Injury Control and Safety Promotion* 25 (4): 378–386. As of 12 December 2025: <https://doi.org/10.1080/17457300.2018.1431944>

- Ervin, Jennifer., Anthony LaMontagne, Faraz Shahidi, Yamna Taouk, Peter Smith & Tania King. 2025. 'Precarious, NonStandard and Informal Employment: A Glossary.' *J Epidemiol Community Health* 79 (9): 664–69. As of 12 December 2025: <https://doi.org/10.1136/jech2024223428>
- European Foundation for the Improvement of Living and Working Conditions (Eurofound). 2015. *Working conditions in Central America*. Luxembourg: Publications Office of the European Union.
- Flouris, Andreas D., Petros C. Dinas, Leonidas G. Ioannou et al. 2018. 'Workers' Health and Productivity under Occupational Heat Strain: A Systematic Review and MetaAnalysis.' *The Lancet Planetary Health* 2 (12): e521–31. As of 12 December 2025: [https://doi.org/10.1016/S25425196\(18\)302377](https://doi.org/10.1016/S25425196(18)302377)
- Fobil, Julius., Priscillah Abotsi, Augustine A. Acquah, John ArkoMensah, Clive D'Souza & Bernard Martin. 2021. 'Occupational and Environmental Health Effects of Informal Electronic Waste Recycling – A Focus on Agbogbloshie, Ghana.' In *Proceedings of the 21st Congress of the International Ergonomics Association (IEA 2021)*, edited by Nancy L. Black, W. Patrick Neumann, and Ian Noy. Springer International Publishing. As of 12 December 2025: https://doi.org/10.1007/9783030746117_102
- Forastieri, Valentina. 2014. 'Occupational Safety and Health (OSH) in the Informal Economy'. *Salud, Trabajo, Ambiente: Noticias Centroamericanas*. As of 12 December 2025: <https://repositorio.una.ac.cr/server/api/core/bitstreams/2b64b55109bc4b91b6b1ae923527dd6e/content>
- Gomes, Marcos Hister Pereira. 2012. *Manual de Prevenção de Acidentes e Doenças do Trabalho nas Olarias e Cerâmicas Vermelhas de Piracicaba e Região*. Piracicaba, SP: Centro de Referência em Saúde do Trabalhador 'Dr. Alexandre Alves'. As of 12 December 2025: https://piracicaba.sp.gov.br/wpcontent/uploads/2024/11/Manualolarias_2012comISBNatualizado.pdf
- Hargreaves, Sally., Kieran Rustage, Laura B. Nellums, et al. 2019. 'Occupational Health Outcomes among International Migrant Workers: A Systematic Review and MetaAnalysis.' *The Lancet Global Health* 7 (7): e872–82. As of 12 December 2025: [https://doi.org/10.1016/S2214109X\(19\)302049](https://doi.org/10.1016/S2214109X(19)302049)
- Hart, Keith 1973. 'Informal Income Opportunities and Urban Employment in Ghana'. *The Journal of Modern African Studies*, 11(1), 61–89. As of 12 December 2025: <http://www.jstor.org/stable/159873>
- Hart, Keith 1985. 'The Informal Economy'. *Cambridge Anthropology*, 10(2), 54–58. As of 12 December 2025: <http://www.jstor.org/stable/23816368>
- Human Rights Watch. 2008. *"As If I Am Not Human": Abuses against Asian Domestic Workers in Saudi Arabia*. As of 12 December 2025: https://www.hrw.org/sites/default/files/reports/saudi-arabia0708_1.pdf
- India Development Review. 2025. 'Do India's labour codes address informal workers' needs?' *India Development Review*. March 28. As of 12 December 2025: <https://idronline.org/article/rights/doindiaslabourcodesaddressinformalworkersneeds/>
- International Labour Organization (ILO). 1981. *C155 - Occupational Safety and Health Convention, 1981 (No. 155)*. Geneva: International Labour Organization.

- —. 2002. *Resolution concerning decent work and the informal economy*. Geneva: International Labour Organization. As of 12 December 2025: <https://webapps.ilo.org/public/english/standards/relm/ilc/ilc90/pdf/pr25res.pdf>
- —. 2021a. *Identifying barriers to formalization: A snapshot of key challenges in South Africa’s informal economy, including in times of Covid19, and suggested measures on how to get policies and incentive structures right*. Geneva: International Labour Organization. As of 12 December 2025: https://www.ilo.org/sites/default/files/wcmsp5/groups/public/@africa/@roabidjan/@ilopretoria/documents/publication/wcms_836484.pdf
- —. 2021b. *ILO Global Estimates on International Migrant Workers: Results and Methodology*. 3rd ed. Geneva: International Labour Organization. As of 12 December 2025: https://www.ilo.org/sites/default/files/wcmsp5/groups/public/@dgreports/@dcomm/@pub1/documents/publication/wcms_808935.pdf
- 2024. *Statistics on the Informal Economy*. ILOSTAT. As of 18 December 2025: <https://ilostat.ilo.org/topics/informality/>
- International Monetary Fund (IMF). 2021. *Five Things to Know About the Informal Economy*. IMF News, 28 July. As of 18 December 2025: <https://www.imf.org/en/news/articles/2021/07/28/na072821fivethingstoknowabouttheinformaleconomy>
- Jawahar, K.M. 2025. ‘Occupational Health and Safety (OHS) Laws in India: A Critical Analysis.’ *International Journal of Human Rights Law Review* 4 (2): 875–93.
- Julià, Mireia., Francesc Belvis, Alejandra Vives, Gemma Tarafa & Joan Benach. 2019. ‘Informal Employees in the European Union: Working Conditions, Employment Precariousness and Health.’ *Journal of Public Health* 41 (2): e141–51. As of 12 December 2025: <https://doi.org/10.1093/pubmed/ffy111>
- Kadungure, Artwell., Rangarirai Machemedze, Wisborn Malaya, Nathan Banda, Rene Loewenson & Alice Sverdlík. 2023. ‘Towards Climate Change Resilience and Informal Workers’ Health in Zimbabwe: An ActionResearch Case Study.’ *Cities & Health* 7 (6): 1055–71. As of 12 December 2025: <https://doi.org/10.1080/23748834.2023.2261755>
- Kawakami, Tsuyoshi. 2024. ‘Participatory Training Activities in South Asia for Promoting Safety and Health in Informal Economy Workplaces—Roles of Trade Unions and Employer Organizations.’ *Safety and Health at Work* 15 (4): 500506. As of 12 December 2025: <https://doi.org/10.1016/j.shaw.2024.09.002>
- Korwatanasakul, Upalat. 2021. *Determinants, Wage Inequality, and Occupational Risk Exposure of Informal Workers: A Comprehensive Analysis with the Case Study of Thailand*. Puey Ungphakorn Institute for Economic Research Discussion Paper 160. As of 12 December 2025: <https://www.pier.or.th/dp/160/>
- Lee, Juyeon & Erica Di Ruggiero. 2022. ‘How Does Informal Employment Affect Health and Health Equity? Emerging Gaps in Research from a Scoping Review and Modified eDelphi Survey.’ *International Journal for Equity in Health* 21 (1): 87. As of 12 December 2025: <https://doi.org/10.1186/s12939022016847>
- Levitsky, Marianne. 2019. ‘17. Occupational Health and Informal Work.’ In: *Global Occupational Safety and*

- Lloyd's Register Foundation. 2025. *Occupational Safety and Health Interventions: The State of the Evidence*. London: Lloyd's Register Foundation.
- Lu, Yao & Lijian Qin. 2014. 'Healthy Migrant and Salmon Bias Hypotheses: A Study of Health and Internal Migration in China.' *Social Science & Medicine* 102: 41–48. As of 12 December 2025: <https://doi.org/10.1016/j.socscimed.2013.11.040>
- Lund, Francie., Laura Alfes & Vilma Santana. 2016. 'Towards an Inclusive Occupational Health and Safety For Informal Workers.' *NEW SOLUTIONS: A Journal of Environmental and Occupational Health Policy* 26 (2): 190–207. As of 12 December 2025: <https://doi.org/10.1177/1048291116652177>
- Malhotra, Rahul., Chandima Arambepola, Samiksha Tarun, Vijitha de Silva, Jugal Kishore & Truls Østbye. 2013. 'Health Issues of Female Foreign Domestic Workers: A Systematic Review of the Scientific and Gray Literature.' *International Journal of Occupational and Environmental Health* 19 (4): 261–77. As of 12 December 2025: <https://doi.org/10.1179/2049396713Y.0000000041>
- Malkawi, Karam. 2018. *A Plain English Guide to the ISO 45001:2018 Occupational Health and Safety Management System*. Global Shield Consulting. As of 12 December 2025: https://www.gscco.com/wpcontent/uploads/2024/08/ISO45001ImplementationGuide_web.pdf
- Mashimbyi, Marvin., Kgotatso Jeanet Seisa, Muelelwa Ramathuthu & Maasago Mercy Sepadi. 2025. 'Assessing Occupational Safety Risks and Challenges Among Informal Welders in Pretoria West, South Africa.' *International Journal of Environmental Research and Public Health* 22 (7): 1132. As of 12 December 2025: <https://doi.org/10.3390/ijerph22071132>
- Mowafi, Hani., Christine Ngaruiya, Gerard O'Reilly, Olive Kobusingye, Vikas Kapil, Andres M. Rubiano, Marcus Ong, Juan Carlos Puyana, AKM Fazlur Rahman, Rashid Jooma, Blythe Beecroft & Junaid Razzak. 2019. 'Emergency Care Surveillance and Emergency Care Registries in LowIncome and MiddleIncome Countries: Conceptual Challenges and Future Directions for Research.' *BMJ Global Health* 4 (Suppl 6): e001442. As of 12 December 2025: <https://doi.org/10.1136/bmjgh2019001442>
- Moyce, Sally C. & Marc Schenker. 2018. 'Migrant Workers and Their Occupational Health and Safety.' *Annual Review of Public Health* 39 (April): 351–65. As of 12 December 2025: <https://doi.org/10.1146/annurevpublhealth040617013714>
- Naicker, Nisha., Frank Pega, David Rees, Spo Kgalamono & Tanusha Singh. 2021. 'Health Services Use and Health Outcomes among Informal Economy Workers Compared with Formal Economy Workers: A Systematic Review and MetaAnalysis.' *International Journal of Environmental Research and Public Health* 18 (6): 6. As of 12 December 2025: <https://doi.org/10.3390/ijerph18063189>
- Nankongnab, Noppanun., Pimpan Silpasuwan, Pia Markkanen, Pornpimol Kongtip & Susan Woskie. 2015. 'Occupational Safety, Health, and WellBeing Among HomeBased Workers in the Informal Economy of Thailand.' *NEW SOLUTIONS: A Journal of Environmental and Occupational Health Policy* 25 (2): 212–31. As of 12 December 2025: <https://doi.org/10.1177/1048291115589148>
- Organization for Economic Cooperation and Development/International Labour Organization (OECD/ILO). 2019. *Tackling Vulnerability in the Informal Economy*. Paris: Development Centre Studies, OECD Publishing. As of 12 December 2025: <https://doi.org/10.1787/939b->

- 7bcdenOgando, Ana Carolina., Sally Roever & Michael Rogan. 2017. ‘Gender and Informal Livelihoods: Coping Strategies and Perceptions of Waste Pickers in SubSaharan Africa and Latin America.’ *International Journal of Sociology and Social Policy* 37 (7–8): 435–51. As of 12 December 2025: <https://doi.org/10.1108/IJSSP0620160077>.
- Oladosu, Ayomide Oluwaseyi., Tual Sawn Khai & Muhammad Asaduzzaman. 2023. ‘Factors Affecting Access to Healthcare for Young People in the Informal Sector in Developing Countries: A Systematic Review.’ *Frontiers in Public Health* 11 (June). As of 12 December 2025: <https://doi.org/10.3389/fpubh.2023.1168577>
- Olivier, Marius. 2007. ‘Extending Employment Injury and Disease Protection to NonTraditional and Informal Economy Workers : The Quest for a Principled Framework and Innovative Approaches’. *Obiter* 28 (3). As of 12 December 2025: <https://doi.org/10.17159/obiter.v28i3.13788>
- Porras, David Gimeno Ruiz de., Marianela Rojas Garbanzo, Aurora Aragón, Lino CarmenateMilián & Fernando G. Benavides. 2017. ‘Effect of Informal Employment on the Relationship between Psychosocial Work Risk Factors and Musculoskeletal Pain in Central American Workers.’ *Occupational and Environmental Medicine* 74 (9): 645–51. As of 12 December 2025: <https://doi.org/10.1136/oemed2016103881>
- Pransky, Glenn., Daniel Moshenberg, Katy Benjamin, Silvia Portillo, Jeffrey Lee Thackrey & Carolyn HillFotouhi. 2002. ‘Occupational Risks and Injuries in NonAgricultural Immigrant Latino Workers.’ *American Journal of Industrial Medicine* 42 (2): 117–123. As of 12 December 2025: <https://doi.org/10.1002%2Fajim.10092>
- Rast, Eilin., Karen Lau, Rosita ChiaYin Lin, Tharani Loganathan, Sally Hargreaves & Cathy Zimmerman. 2025. ‘Healthcare Services for LowWage Migrant Workers: A Systematic Review.’ *Social Science & Medicine* 380 (September): 118176. As of 12 December 2025: <https://doi.org/10.1016/j.socscimed.2025.118176>
- Ronda Pérez, Elena., Fernando G. Benavides, Katia Levecque, John G. Love, Emily Felt & Ronan Van Rossem. 2012. ‘Differences in Working Conditions and Employment Arrangements among Migrant and NonMigrant Workers in Europe.’ *Ethnicity & Health* 17 (6): 563–577. As of 12 December 2025: <https://doi.org/10.1080/13557858.2012.730606>
- Santana, Vilma S. & Dana Loomis. 2004. ‘Informal Jobs and Nonfatal Occupational Injuries.’ *The Annals of Occupational Hygiene*, Volume 48, Issue 2, March 2004, Pages 147–157. As of 12 December 2025: <https://doi.org/10.1093/annhyg/meh009>
- Schulte, Paul & Harri Vainio. 2010. ‘Wellbeing at work: Overview and perspective.’ *Scandinavian Journal of Work, Environment and Health*, 36 (5): 422–429. As of 12 December 2025: <https://www.jstor.org/stable/40967878>
- SelfEmployed Women’s Association (SEWA). 2025. Homepage: ‘SelfEmployed Women’s Association.’ As of 12 December 2025: <https://www.sewa.org/>
- Siriruttanapruk, Somkiat., Koji Wada & Tsuyoshi Kawakami. 2009. *Promoting occupational health services for workers in the informal economy through primary care units*. Bangkok: ILO Subregional Office for East Asia.
- Stellman, J. M., ed. 1998. *Encyclopaedia of Occupational Health and Safety*. 4th ed. Geneva: International Labour Office. As of 12 December 2025: <https://www.iloencyclopaedia.org/>

- Strong, Larkin L. & Frederick J. Zimmerman. 2005. 'Occupational Injury and Absence from Work among African American, Hispanic, and NonHispanic White Workers in the National Longitudinal Survey of Youth.' *American Journal of Public Health* 95 (7): 1226–1232. As of 12 December 2025: <https://pubmed.ncbi.nlm.nih.gov/15983275/>
- Sverdlik, Alice., Kanupriya Kothiwala, Artwell Kadungure, et al. 2024. 'Understanding the Interplay of Occupational, Public Health, and Climate-Related Risks for Informal Workers: A New Framework with Findings from Zimbabwe and India.' *Social Science & Medicine* 348 (May): 116750. As of 12 December 2025: <https://doi.org/10.1016/j.socscimed.2024.116750>
- Tsoutouras, Demetria & Francie Lund. 2016. 'Extending Health and Safety to Informal Workers: A Photo Essay.' *NEW SOLUTIONS: A Journal of Environmental and Occupational Health Policy* 26 (2): 326–36. As of 12 December 2025: <https://doi.org/10.1177/1048291116652826>
- Walter, Nicholas., Philippe Bourgois & H. Margarita Loinaz. 2002. 'Social Context of Work Injury among Undocumented Day Laborers in San Francisco.' *Journal of General Internal Medicine* 17 (6): 221–229. As of 12 December 2025: <https://pmc.ncbi.nlm.nih.gov/articles/PMC1495019/>
- Women in Informal Employment: Globalizing and Organizing (WIEGO). 2025. Homepage: 'HomeNet Thailand.' As of 12 December 2025: <https://www.wiego.org/organization/homenettthailand/>
- World Bank. 2024. 'Informal Economy Database'. As of 18 December 2025: <https://www.worldbank.org/en/research/brief/informaleconomydatabase>
- . 2025. 'World Bank Country and Lending Groups'. Data Help Desk. As of 18 December 2025: <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519worldbankcountry-andlendinggroups>
- Zolnikov, Tara Rava., Frances Furio, Vanessa Cruvinel & June Richards. 2021. 'A Systematic Review on Informal Waste Picking: Occupational Hazards and Health Outcomes.' *Waste Management* 126 (May): 291–308. As of 12 December 2025: <https://doi.org/10.1016/j.wasman.2021.03.006>

Annex A. Procedures of the scoping review

Table A1. Examples of search terms in Google Scholar

Topic	Search terms
Informal economy	("informal economy" OR "informal sector*" OR "informal job*" OR "informal labour" OR "informal labor" OR "informal work*" OR "informal market*" OR "informal employment" OR "informal environment" OR "grey economy OR market OR money" OR "black economy OR market OR money" OR " OR "underground economy" OR "illegal economy" OR "hidden economy" OR "shadow economy" OR "undeclared economy" OR "undocumented work*" OR "unorganised work" OR "unorganised sector*" OR "unorganised economy")
Occupational safety and health	("occupational safety OR health" OR "worker safety" OR "worker health" OR "wellbeing" OR "health outcomes" OR "hazard" OR "accident " OR ("health" AND "safety") OR "incident*" OR "injury" OR "injuries" OR "fatality*" OR "death*" OR "ill health" OR "illness*" OR "sickness*" OR "physical OR psychological safety OR health " OR "occupational safety" OR "occupational health" OR "organizational safety" OR "safety behavior* OR behaviour*" OR "employee safety" OR "safety culture" OR "safety motivation*" OR "safety climate*") OR (("safe" OR "safety") AND ("work*" OR "environment*" OR "office*" OR "job*"))
Impacts, strategies and policy context	("impact" OR "polic*" OR "practice*" OR "strateg*" OR "intervention*" OR "advocacy" OR "participation" OR

"prevention" OR "risk*" OR challenge* OR opportunit*" OR "barrier*" OR "recommendation*" OR "women" OR "child labour" OR ("vulnerable group* OR "population") OR "statistics")

Table A2. Inclusion and exclusion criteria

Included in the review	Excluded from the review
Articles related to OSH in the informal economy	Articles not related to OSH or the informal economy
English language sources	Sources published in languages other than English
Academic and grey literature; empirical research and evidence syntheses	Commentaries, media articles
Research from any geographical context	No restrictions
Any publication date	No restrictions

Table A3. Data extraction template

Topic	Data to extract
General information	• Source • Full reference • Short reference (authordate) • URL • Title • Abstract • Publication type (e.g. journal article, book chapter, thesis) • Data sources/methodology (e.g. impact evaluation, statistical analysis, case studies, comparative study) • Geographical focus • Sector(s) of focus • Population of focus

Topic	Data to extract
Background and taxonomy	• Definitions and/or classifications of the informal economy
Key statistics	• Data on the scale of the informal economy (across countries, sectors, demographics, etc.) • Data on OSH incidents and health outcomes among informal workers (by age, gender, SES, etc.) • Identified gaps in data
Key risks and challenges	• OSH risks in the informal economy (across countries, sectors/job types) • OSH challenges in the informal economy (across countries, sectors/job types)
Policy context	• Policies and frameworks governing OSH in the informal economy (across countries, sectors/job types) • Examples of effective policies/practices • Gaps in OSH protections in the informal economy (across countries, sectors/job types, vulnerable groups)
Impact on women and vulnerable groups	• Key OSH risks/challenges for women in the informal economy • Key OSH risks/challenges for other vulnerable groups in the informal economy • Barriers for women/vulnerable groups in accessing OSH protections in the informal economy
Strategies and recommendations for improving OSH in the informal economy	• Innovative approaches to improving OSH in the informal economy • Recommendations for addressing OSH challenges in the informal economy
Other	• Limitations of the study • Snowball references (if needed)

Annex B. Countrylevel data on the informal economy

Table B1. Percentage of informal employment in total employment by country

East Asia and the Pacific		Europe and Central Asia		Latin America and the Caribbean		Middle East, North Africa, Afghanistan and Pakistan		South Asia		SubSaharan Africa		Unclassified	
Laos	90.5%	Tajikistan	64.6%	Haiti	91.6%	Afghanistan	86.1%	India	88.4%	Niger	98.5%	Wallis and Futuna	36.0%
Cambodia	89.4%	Kyrgyzstan	58.8%	Bolivia	84.5%	Pakistan	84.3%	Bangladesh	84.2%	Burundi	98.3%	Cook Islands	29.2%
Indonesia	81.2%	Georgia	55.6%	Guatemala	83.2%	Yemen	77.4%	Nepal	81.6%	Congo, Democratic Republic of the	97.3%		
Myanmar	81.0%	Republic of Moldova	52.2%	Honduras	82.6%	Egypt	71.3%	Sri Lanka	67.0%	Chad	96.9%		
TimorLeste	80.6%	Armenia	47.9%	Nicaragua	81.8%	Iraq	67.6%	Maldives	48.1%	Benin	96.3%		
Vanuatu	72.4%	Türkiye	27.7%	Peru	72.1%	Lebanon	55.4%			Madagascar	96.1%		
Viet Nam	67.7%	Bosnia and Herzegovina	19.7%	Ecuador	68.6%	Jordan	55.1%			Mozambique	95.7%		
Thailand	63.3%	Russian Federation	19.3%	Paraguay	67.3%	Djibouti	50.5%			Mali	95.4%		
Kiribati	59.9%	Serbia	17.8%	El Salvador	66.5%	Occupied Palestinian Territory	48.5%			Uganda	95.2%		
Tonga	58.9%	North Macedonia	11.1%	Barbados	62.0%	Tunisia	36.9%			Burkina Faso	95.2%		
Samoa	51.6%	Poland	7.7%	Panama	58.7%	Malta	0.7%			Senegal	95.1%		
Nauru	48.0%	United Kingdom	6.5%	Venezuela	58.3%					GuineaBissau	94.8%		
Fiji	45.7%	Slovakia	5.1%	Colombia	56.1%					Sudan	94.4%		
Mongolia	41.9%	Portugal	4.5%	Mexico	55.5%					Tanzania, United Republic of	93.6%		
Marshall Islands	33.1%	Greece	4.1%	Dominican Republic	54.7%					Sierra Leone	93.1%		

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Brunei Darus-salam	28.5%	Italy	3.5%	Jamaica	54.6%	Togo	92.3%
Republic of Korea	26.6%	Luxembourg	3.5%	Suriname	52.1%	Angola	92.2%
Tuvalu	20.2%	France	3.3%	Argentina	51.6%	Côte d'Ivoire	92.1%
		Lithuania	3.1%	Guyana	51.2%	Liberia	89.7%
		Sweden	2.9%	Grenada	48.0%	Mauritania	89.4%
		Denmark	2.8%	Costa Rica	37.4%	Comoros	88.8%
		Romania	2.6%	Brazil	36.5%	Zimbabwe	88.1%
		Germany	2.5%	Uruguay	28.5%	Cameroon	87.1%
		Netherlands	2.4%	Saint Lucia	27.5%	Malawi	87.1%
		Latvia	2.4%	Chile	27.5%	Kenya	86.5%
		Estonia	2.2%	Bahamas	18.4%	Congo	85.3%
		Finland	2.1%	Antigua and Barbuda	12.7%	Ethiopia	85.2%
		Czechia	2.0%			Rwanda	84.3%
		Ireland	2.0%			Gambia	84.1%
		Spain	2.0%			Zambia	83.8%
		Cyprus	1.8%			Somalia	82.5%
		Croatia	1.4%			Lesotho	80.9%
		Iceland	1.4%			Ghana	78.1%
		Hungary	1.3%			Botswana	76.1%
		Bulgaria	1.2%			Cabo Verde	63.8%
		Norway	1.2%			Namibia	55.8%
		Belgium	1.1%			Eswatini	53.3%
		Austria	1.0%			South Africa	34.9%
		Switzerland	0.9%			Mauritius	33.9%
		Slovenia	0.8%			Seychelles	14.2%

Source: Authors' analysis of ILOSTAT – SDG indicator 8.3.1 – proportion of informal employment in total employment by sex and sector (%) (Aug 2025), including data for 143 countries. Country classification by income and region follows the World Bank Country and Lending Groups. Data points marked as 'Unreliable' in the original dataset are excluded from the analysis. The latest available data for each country is used.

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