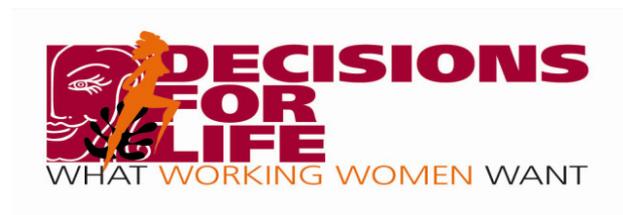


Minimum wages and women's work

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About DECISIONS FOR LIFE (<http://dfi.wageindicator.org/home>)

The DECISIONS FOR LIFE project aims to raise awareness amongst young female workers about their employment opportunities and career possibilities, family building and the work-family balance (2008-2011). The lifetime decisions adolescent women face, determine not only their individual future, but also that of society: their choices are key to the demographic and workforce development of the nation.

DECISIONS FOR LIFE is awarded a MDG3 grant from the Netherlands Ministry of Foreign Affairs as part of its strategy to support the United Nations' Millennium Development Goals no 3 (MDG3): "Promote Gender Equality and Empower Women". DECISIONS FOR LIFE more specifically focuses on MDG3.5: "Promoting formal employment and equal opportunities at the labour market", which is one of the four MDG3 priority areas identified in Ministry's MDG3 Fund. DECISIONS FOR LIFE runs from October 2008 until June 2011 and was extended till December.

DECISIONS FOR LIFE focuses on 14 developing countries, notably Brazil, India, Indonesia, the CIS countries Azerbaijan, Belarus, Kazakhstan, Ukraine, and the southern African countries Angola, Botswana, Malawi, Mozambique, South Africa, Zambia and Zimbabwe. The project is coordinated by International Trade Union Confederation (ITUC). Project partners are Union Network International (UNI), Wage Indicator Foundation, and University of Amsterdam/AIAS.

About Wage Indicator Foundation (<http://www.wageindicator.org>)

The independent non-profit Wage Indicator Foundation aims for transparency of the labour market by sharing and comparing data through its network of national websites. *Wage Indicator* has operations in more than 60 countries.

The Wage Indicator Foundation was established in the Netherlands in 2003. The Foundation is based in Amsterdam. It has regional offices in Ahmadabad, Bratislava, Buenos Aires, Cape Town/Maputo and Minsk. Its headquarters and postal address are:

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1 Introduction

1.1 Statutory Minimum Wages for Women

In the 2000s, developing countries, including Brazil, China and South Africa, have growingly relied on minimum wages. And though some countries, like China, in the crisis year 2009 froze existing minimum wage rates, over half of the 108 countries sampled in the *Global Wage Report 2010/11* of the International Labour Organisation (ILO) choose to increase minimum wages even in 2009. The ILO, in illuminating these developments, also noted that currently minimum wages are applied in about 90% of countries in the world. Elsewhere the ILO estimated that about 35% of these countries set out one single minimum wage with universal coverage, while a majority of 65% has a set of minimum wages varying by sector, occupation and/or region (ILO 2010b). In the current crisis, there are strong reasons to emphasize the role of statutory minimum wage systems in maintaining purchasing power and protecting low-paid and vulnerable workers, in particular female workers (ILO 2010a: 64). The ILO concludes that statutory national minimum wages are more likely to benefit women's pay than men's, stating that "a growing body of literature (...) points to the important role of minimum wage policies in combating gender-based pay discrimination and addressing the vulnerability of women to becoming trapped in low-paid jobs. The contribution of minimum wages to improving women's wages should be recognized as an objective in its own right, since women typically benefit more than male workers from minimum wages increases" (ILO 2010a: 73).¹

The *Global Wage Report 2010/11* refers to various studies that have linked (the lack of) wage-setting institutions to the incidence of low-wage work. It in particular refers to recent work of Rubery and Grimshaw (2011), for OECD (high-income) countries providing support for the argument that institutional arrangements for regulating low-wage work can reduce women's vulnerability to low pay. These authors indicate women's low pay by (a) the advantage of male wages over female (the gender wage gap) in the lowest decile (10%) of the wage distribution, and by (b) the incidence of low pay among women relative to men, with low pay defined as earning less than two-thirds of the national median wage. They show that countries with a high minimum wage (40% or higher of average earnings) had on average the smallest gender pay gap, followed by countries with both a high minimum wage and a strong collective bargaining system (with collective bargaining covering at least 80% of the workforce). Countries with weak collective bargaining coverage and no or a low minimum

¹ Of course, there are wider considerations. ILO Convention No. 131, which considers that minimum wage systems are necessary to protect wage earners against unduly low wages, calls for setting levels that take into consideration not only the needs of workers and their families – taking into account the general level of wages in the country, the cost of living, social security benefits and the relative living standards of other social groups – but also economic factors, including the requirements of economic development, levels of productivity and the desirability of attaining and maintaining a high level of employment. This Convention also calls for the involvement of representatives of organizations of employers and workers in the determination of the adequate minimum wage level.

wage had on average the highest gender pay gap. The authors find the same order of country groups where it concerned the low-pay incidence of women relative to men. Rubery and Grimshaw argue that for a refocusing of the minimum wage debate on issues of gender discrimination is needed. Nevertheless, they add, “a minimum wage is only one element in ensuring gender pay equity and is not a substitute for developing an inclusive approach to wage-setting, since union representation and widespread collective bargaining coverage are the main means for developing a transparent wage structure that provides for fair comparison above the lowest-paid jobs.” Moreover, they admit, “It is also possible that a statutory minimum wage substitutes for a higher minimum in collective wage agreements in some contexts” (Rubery and Grimshaw 2011: 248; see for an earlier, detailed analysis Rubery 2003).

There are good reasons to broaden analyses such as those of Rubery and Grimshaw to developing countries. A basic argument is that particularly to the extent that minimum wages succeed to influence wage setting of informal and non-standard work, they are likely to reduce poverty in those countries – which near-universally hits women more than men (Cf. Lustig and McLeod 1997; Saget 2001; Devereux 2005). Currently all 14 DECISIONS FOR LIFE countries have minimum wage regulations in place. In most of these countries trade unions have played a pivotal role in minimum-wage setting processes and putting pressure on improving the efficacy of existing arrangements, in particular on better compliance and enforcement. Such efforts, wherever needed fuelled and coordinated by the ITUC and its regional organisations, are documented for countries such as Brazil, India, Indonesia, Kazakhstan, South Africa, and Zambia.

The DFL country inventories (see below) have made abundantly clear that in everyday practice ensuring compliance with minimum wage legislation remains a weak spot, and therefore a major field of continuous trade union activities. The DFL project has produced a number of innovative and promising contributions to these activities, using the *WageIndicator* websites and new social media. The Zambian experience (Chimpampwe 2011) provides an illuminating example on how on-line *WageIndicator*-supported and off-line union campaigning can effectively join in broadening knowledge and discussions concerning the minimum wage, combined with strengthening demands on maternity rights and working hours of young women -- as well as enhancing the image of the union involved. Thus, the DFL project has pointed at new ways for an active role of trade unions and their membership in monitoring and enforcement of minimum-wage regulations.

1.2 About this report

Wherever possible, this report focuses on the fourteen countries included in the DECISIONS FOR LIFE project. These countries are Angola, Azerbaijan, Belarus, Brazil, Botswana, India, Indonesia, Kazakhstan, Malawi, Mozambique, South Africa, Ukraine, Zambia and Zimbabwe. During 2009 and 2010, the University of Amsterdam/ AIAS has made inventories with the underlying gender analyses for these 14 countries in the DECISIONS FOR LIFE project (See Van Klaveren *et al* 2009, 2010, in the References list). In 2011, as part of the DFL project

extension, three more reports have been prepared. The first one addressed the eight service sector occupations (Tijdens and Van Klaveren 2011a). The second report covered wages and work of domestic workers, in large majority females, and was related to the adoption in 2011 by the ILO of Convention No. 189 concerning Decent Work for Domestic Workers, and to the “12 by 12” campaign of the ITUC, on getting 12 countries to ratify this Convention by the end of 2012 (Tijdens and Van Klaveren 2011b). The current report is the third and final in this series.

The outline of this report is as follows. In Chapter 2 we present a number of basic facts for all 14 DFL countries that may be relevant for one’s understanding of the relation between minimum wages and the position of working women: on national labour markets; on the gender pay gap; and on the relative level of minimum wages. In Chapter 3 we treat the available research on employment and income effects of (increases in) minimum wages, as these effects are widely discussed among economists and politicians. This research concentrates on four large DFL countries: Brazil, India, Indonesia, and South Africa. Yet, also for these countries recent information on the characteristics of those with earnings below or on and above the minimum wage is very scanty. In Chapter 4 we have tried to partly fill this gap by providing some evidence, based on the *WageIndicator* survey, for Brazil and Indonesia, as well as for Zambia. We have abstained from a more detailed discussion on compliance with and enforcement of existing minimum wage arrangements, how essential these may be for in particular women workers (Cf. Benassi 2011).

1.3 The data sources used in this report

The data used in this report stem from several sources. First, the DECISIONS FOR LIFE reports about the 14 countries have been used. Second, the data of the *WageIndicator* survey has been used. This is a multi-country, continuous survey, posted at the national *WageIndicator* websites in a wide range of countries, among which the DFL countries, including a paper-based survey in Zambia. The Appendix includes a methodological explanation of this survey (see also Tijdens *et al* 2010). Third, academic journals and reports have been searched for up-to-date information on the relation between minimum wage setting and women’s work.

2 Basic Facts

2.1 National labour markets

It makes sense to present here a short overview of the respective national labour markets as regards female employment. In Table 1 we have grouped a number of relevant labour market data for the 14 DFL countries. The column most to the left shows the labour participation rate (LPR or EPOP) of women aged 15 and older in the respective labour markets. The figures show a wide variation, from quite high levels (Angola, Malawi and Mozambique, with over 70% of women participating) to quite low levels (Zambia with 45%, and in particular India with 38% of all women involved in the labour market). Regional patterns are hardly discernible.

In all 14 DFL countries the minimum wage legislation covers the formal sector², though in South Africa wage setting is left to collective bargaining. Some countries (India, South Africa) have a separate branch of minimum wage setting targeted to the informal sector, though today in India the central government still excludes domestic workers (Tijdens and Van Klaveren 2011b); the legislation of most countries does not rule out informal workers, while that of Brazil explicitly includes them. Though it has been found across countries that a sizeable share of informal wage-earners receive about exactly the minimum wage (the so-called 'spike' in the informal wage distribution – Lemos 2004b; Saget 2006; Freeman 2009), it cannot be denied that enforcement of minimum wages in the informal sector often meets serious problems, considerably more serious than in the formal sector – reason for us to devote the second column to the left to the estimations of the share of women working in the formal sector. The column shows that variations across countries are quite wide in this respect. As one can see, in a number of countries a large majority of women is still in informal employment, either as self-employed / own-account workers or as cooperating family members. Across the 14 countries India has the lowest degree of formality in the labour market, with in 2007 about 4% of all employed women in formal ('organised') labour, but in some sub-Saharan countries very low formality shares exist too, in particular in Mozambique (6%), in Angola (10%,) and in Malawi (11%). By contrast, formality shares were over 60% in Botswana, in South Africa and in the three CIS countries for which data were at our disposal. The next column shows that, except for Mozambique, in all countries over nine in ten formally employed women had the employee status. The last column indicates the

² Informal employment is defined by the 2003 International Conference of Labour Statisticians as own-account workers and employers employed in their own informal sector enterprises, family workers, members of informal producers' co-operatives and employees holding informal jobs. More specific rules apply per country. For example, in Brazil workers with a Labour Card (*Carteira de Trabalho*) and/or contributing to a social security fund are regarded as in formal wage employment. In India, informality is defined as the absence of employers' and workers' organisations ('the unorganized sector'). In South Africa the formal sector consists of registered businesses, whereas the informal sector does not (Saget 2006).

resulting numbers of females formally employed as employee. The largest numbers in this respect are those in Brazil, Indonesia and Ukraine, followed by India and South Africa.

Table 1 Composition of female workforce, by country, most recent years available

| | labour participation rate females 15 and older | % of all females in formal employment | % employees of all females in formal employment | no. females formally employed as employee (x 1,000) |
|--------------|--|---------------------------------------|---|---|
| Angola | 74 | 10 | 80 | 270 (2007) |
| Azerbaijan | 61 | 38 | 97 | 740 (2008) |
| Belarus | 55 | ? | ? | ? |
| Botswana | 50 | 62 | 95 | 190 (2005-06) |
| Brazil | 58 | 44 | 95 | 16,900 (2007) |
| India | 38 | 4 | 99 | 5,200 (2007) |
| Indonesia | 49 | 27 | 93 | 10,500 (2008) |
| Kazakhstan | 67 | 66 | 98 | 2,490 (2008) |
| Malawi | 75 | 11 | 99 | 330 (2005) |
| Mozambique | 78 | 6 | 67 | 200 (2008) |
| South Africa | 51 | 66 | 94 | 3,750 (2007) |
| Ukraine | 57 | 83 | 98 | 8,150 (2008) |
| Zambia | 45 | 13 | 94 | 130 (2005) |
| Zimbabwe | 65 | ? | ? | ? |

Sources: Van Klaveren *et al* 2009a-g, 2010a-g; ILO *Laboursta Database*; for India also: Government of India 2010, Table A52.

2.2 The gender pay gap

In Table 2 we present information on the gender pay gap in 12 out of 14 DFL countries; for Angola and Malawi data for the 2000s was missing. We use the international standard formula for the gender pay (or wage) gap: $(\text{wage men} - \text{wage women}) : \text{wage men} \times 100$). As the reader can see from the table, we have to rely on a variety of sources. In most countries, the information only covers the formal workforce. The *WageIndicator* data for 2007-2008 that we include for Brazil, India and South Africa (from ILO 2009) does not exclude informal workers, but we may assume that over nine in ten *WageIndicator* respondents is working in the formal sector of the respective countries. The gender pay gaps generally are quite large, and gaps below 20% are even exceptional: Botswana, and Brazil and Zambia according to both one source.

Table 2 Size of Gender Pay Gap (GPG), by country, latest available data

| | Coverage and data sources | GPG average | GPG median |
|--------------|--|-------------|------------|
| Angola | ? | | |
| Azerbaijan | formal workforce, ILO 2008 | 43% | |
| Belarus | formal workforce, ILO 2008 | 25% | |
| Botswana | formal workforce, CSO 2005-06 | 19% | |
| Brazil | formal workforce, ILO 2002 | 18% | |
| | WageIndicator, 2007-08 | 39% | 34% |
| | WageIndicator, 2006-10 (controlled) | 24% | |
| India | Organised factory sector, ASI, 2004-05 | 57% | |
| | Casual workers, NCEUS, 2004-05 | 35-37% | |
| | WageIndicator, 2007-08 | 30% | 6% |
| Indonesia | formal workforce, ILO 2009 (for 2008) | 23% | |
| Kazakhstan | formal workforce, ILO 2008 | 31% | |
| Malawi | ? | | |
| Mozambique | World Bank 2008 (controlled) | 28% | |
| South Africa | Hlekiso and Mahlo, 2006 (for 2005) | 38% | |
| | formal workforce, Dept of Labour, 2005 | 25% | |
| | WageIndicator, 2007-08 | 34% | 33% |
| Ukraine | formal workforce, Stats Ukraine, 2008 | 25% | |
| Zambia | total workforce, CSO 2007 (for 2005) | 45% | |
| | paid employees, CSO 2007 (for 2005) | 13% | |
| Zimbabwe | formal workforce, Hausmann <i>et al</i> 2009 | 28% | |

Sources: Van Klaveren *et al* 2009a-g, 2010a-g; ITUC 2009a (based on *WageIndicator*); ILO *Laborsta Database*; Hausmann *et al* 2009; *WageIndicator* calculations of K. Tijdens for Brazil 2006-2010

2.3 The level of minimum wages

As said, by 2010 all 14 DFL countries had a statutory minimum wage (SMW) or a set of such wages in place, though in South Africa the government only establishes minimum requirement regarding wages and conditions of work for a number of sectors, not for the workforce at large.³ Table 3 provides an overview. It turns out that six countries have set one national minimum wage, five countries have more than one but a limited number of rates, whereas India, Indonesia and South Africa each have over 1,000 minimum wage rates. We have also included the equivalent in PPP US dollars: this Purchasing Power Parity conversion rate implies the same purchasing power as a US dollar has in the US.

³ Based on 2007 employment figures the sectors with minimum wage determinations in South Africa jointly covered about 5.5 million workers: 40% of the total workforce and about just over 3 million women, 51% of the female workforce. In collective agreements at industry level minimum wage floors are set too, via the agency of Bargaining Councils; the Minister of Labour may declare these minimum wages extended to employers in the industry and area who were not parties to the negotiations. We calculated that in 2007 77% of the South African workforce, including 85% of females employed, was formally covered by regulations laying down minimum wages (Cf. Van Klaveren *et al* 2009c).

In the second column to the right, results of our estimations of the ratio of the SMW(s) to the average wage, in these 14 countries specified as the average wage in the formal sector. This measure is mostly close to the Kaitz index, indicating the SMW as a percentage of the median wage and used to indicate the 'bite' of minimum wages at national level; yet, the available statistical evidence mostly allowed to calculate averages and not medians. Finally, in the most right column, we have included the Gini coefficient as a measure for national income (in)equality, rating 0 as perfect equality and 100 as perfect inequality. South Africa shows up with the largest disparity in the income distribution, followed by Angola and Botswana. According to the official statistics, the four CIS countries (Azerbaijan, Belarus, Kazakhstan and Ukraine) have a relatively egalitarian income distribution. The same holds for India and Indonesia. Brazil is coming down from a highly unequal income distribution.

Of course, in particular interesting is the level of the respective minimum wages. As said, we undertook the effort to compare minimum wages with average wages in the formal sector. We agree with Saget (2008: 28, 33) that medians would have been a better indicator, especially in high-inequality countries, but again, the data available were insufficient. Saget, preferring the ratio of the minimum wage to the GDP (Gross Domestic Product) per capita per month as her central yardstick, calculated that ratio for 131 countries based on 2002-2004 data. She classified countries being in a situation of 'mini minimum wage' if their MW/GDP per capita ratio was less than 0.30 (30%), and as being in a situation of 'maxi minimum wages' if their ratio was above 0.60 (60%). Concerning the DFL countries, following this exercise four, Azerbaijan, Belarus, Botswana, and Kazakhstan, had a 'mini minimum wage', and another four, India, Indonesia, Malawi, and Mozambique, a 'maxi minimum wage'; five DFL countries, Angola, Brazil, South Africa, Ukraine and Zambia, were in between, while data for Zimbabwe was missing (Saget 2008: 29-32). In spite of the use of different yardsticks, the classification results of Saget differ only marginally from our outcomes: we would include the same four 'mini minimum wage' countries, and –taking into account the median values we calculated for India and Indonesia—except Malawi the same 'maxi minimum wage' countries as well.

We did not find any correlation between the relative level of the minimum wage and income inequality in the 14 countries: the correlation between the SMW in % of average wage of formal sector and the Gini coefficient was non-existent ($R=-0.179$). Yet, there was a negative correlation between the SMW in percentage of the average wage of the formal sector and the percentage of all females in formal employment, for the 12 countries for which data was available (Table 1, second column): $R=-0.44$. Thus, the higher the share of women in informal employment, the higher the relative level of the minimum wage.

Table 3 Incidence of Statutory Minimum Wage (SMW), by country, situation 2009/2010

| | SMW ? (2010) | Number of SMWs (2010) | Equivalent in PPP USD (2009)* | SMW in % of average wage formal sector (2009) | Gini coefficient (various years) |
|--------------|-----------------|-----------------------------|-------------------------------------|--|-------------------------------------|
| Angola | yes | 3 | 94 | 39 | 62.0 (2005) |
| Azerbaijan | yes | 1 | 121 | 27 | 33.7 (2008) |
| Belarus | yes | 1 | 250 | 23 | 27.9 (2007) |
| Botswana | yes | 5 | 159 | 20 | 61.0 (2007) |
| Brazil | yes | 1 | 286 | 42* | 53.9 (2009) |
| India | yes | over 1,600 | 65-121 | 55-90**) | 33.4 (2004) |
| Indonesia | yes | over 2,000 | 71-148 | 42-87***) | 36.8 (2009) |
| Kazakhstan | yes | 1 | 165 | 23 | 28.8 (2008) |
| Malawi | yes | 2 | 53-59 | 44-49 | 39.0 (2004) |
| Mozambique | yes | 10 | 56-103 | 112-206 | 45.6 (2008) |
| South Africa | yes | over 1,800 | 290-510 | 31-53 | 67.0 (2006) |
| Ukraine | yes | 1 | 311 | 50 | 27.5 (2008) |
| Zambia | yes | 1 | 77 | 40 | 50.8 (2005) |
| Zimbabwe | yes | 28 | ? | 7-90 | 50.1 (2007) |

Sources: Van Klaveren *et al* 2009b,d,e,g; 2010a-g; IIM/AIAS/WIF 2011a-e; *WageIndicator* websites; ILO *Conditions of Work and Employment Laws Database*; ILO *Laborsta Database*; PPP equivalents: ILO 2010a, Table SA2; Gini coefficients: CIA World Factbook; UN data.

*) median value (=Kaitz index)

***) median across states: 72

****) median across provinces: 65

3 Employment and income effects of minimum wages

3.1 Employment effects

The employment effects of (increases in) minimum wages have caused a lot of discussion among economists and politicians. In 1995, the US economists Card and Krueger challenged conventional economic wisdom by concluding, based on a number of US studies, that minimum-wage increases do not decrease employment. Since then, the literature is polarized. Findings turn out to be sensitive to the research methodologies used. Neumark and Wascher, after reviewing the literature, held that “the preponderance of evidence supports the view that minimum wages reduce the employment of low wage workers” (Neumark and Wascher 2008: 104). In contrast, two other American researchers, extending and advancing the meta-analysis of Card and Krueger, concluded that the conclusion of these colleagues still stood: “There never was much accumulated empirical evidence of a negative employment effect from minimum-wage regulation” (Doucouliagos and Stanley 2009: 422). These outcomes were only related to the US labour market. Empirical studies covering European Union countries, Turkey and Croatia found no simple relationship between minimum wages and employment, and definitely no clear negative correlation between the two (Dolado *et al* 1996; Vaughan-Whitehead 2008; Gautié and Schmitt 2010). Taking into account a multitude of research results covering developing countries, Freeman (2007, 2009) concludes to near consensus about the conclusion that the negative employment effects of minimum wage rises here have been small, or even negligible. He found little evidence that the high share of the workforce in the informal sector in developing countries diminished the effects of minimum-wage setting compared with high-income countries.

Nevertheless, it is worthwhile going into research outcomes that map employment effects in detail, wherever possible explicitly covering the position of women. It is a lucky coincidence that there is a body of research available on employment effects for two DFL countries, Brazil and Indonesia, representing a country category that in the eyes of economists may be ‘risky’: Brazil with considerable raises of the minimum wage level, albeit to a relatively moderate level, and Indonesia with increases to relatively high minimum levels. The evidence for **Brazil** largely confirms the evidence for high-income countries. According to the ILO (2008), the substantial raise of the Brazilian statutory minimum wage in the early 2000s “does not seem to have produced any negative effects on employment growth or the level of employment of formalization in the country. To the contrary, both indicators have improved markedly.” Both claims are supported by research outcomes. Between 1999 and 2008, the country’s employment in formal labour grew by 5.3% annually, against 1.7% in informal jobs. Government policies, including expansion of the social safety net, changes in taxation and improved labour inspection, have been instrumental here, while the near-doubling of the minimum wage in real terms at least did not act as an impediment. The formalization of jobs has in particular been advantageous for women (Berg 2011). Based on 1982-2000 data, Lemos (2007) found no employment effects of the minimum wage hikes in the public and

private sectors though these hikes strongly compressed the wage distribution in both sectors, while she had earlier reported small negative long-run employment effects and modest negative effects in the formal and informal sectors (Lemos 2004a, b).

The experience of **Indonesia** is more nuanced. First of all, it should be taken into consideration that much of Indonesia's minimum wage legislation is left open to interpretation and penalties are comparatively small, though the enforcement of minimum wage legislation has increased, in particular in the 1990s. Then, the government actively promoted minimum wage policies, leading to substantial increases both in real terms and compared to average wages: helped by the decentralisation of minimum wage setting to the provincial governments in 2001 leading to a raise in the Kaitz index rate up to 49 to 75% in 2009 (varying by province, with a median of 65%: Comola and De Mello 2011; Damayanti 2011⁴). Older, less sophisticated studies had found hardly any employment effects for Indonesia. Alatas and Cameron (2003), studying the impact of the minimum wage on total employment during 1990-96, traced a small negative effect, though hardly significant, and depending on firm size and type. Alisjahbana and Manning (2007) found no clear direction, and concluded that employment effects depended on the business cycle, labour market conditions, firm size and sector.

Recently, using individual panel data for Indonesia Chun and Khor (2010) found in their simulations no significant increases in total employment or unemployment from increases in the minimum wage, but a negative impact on the number of workers employed in the formal sector. This effect occurred both for low-paid workers (wages less than 90% of the minimum wage) and better-paid workers, earning 1.5-2.5 times the minimum wage. Remarkably, negative effects concentrated on women: in the formal sector they disproportionately lost work, while male formal jobs remained at the same level. Comola and De Mello (2011), using panel data spanning 1996-2004, also found that minimum-wage hikes expanded total employment in the informal sector, even to an amount that more than compensated job losses in the formal sector, resulting in a positive net employment effect. Yet, also in their outcomes women lost jobs in the formal sector, and for them the net employment effect was zero. The authors suggest that "a gradual reduction of the minimum wage over time would help to alleviate the adverse employment impact of such a high minimum wage (in relation the median) and to facilitate formalisation in the labour market" (Comola and De Mello 2011: S98).

3.2 Effects on income distribution

Notably for Latin America the increases in statutory minimum wages seem to have produced an equalizing effect on the income distribution. A study on 19 Latin American countries over 1997-2001 showed that minimum wages raised pay at the bottom of the

⁴ In and after 2001, the national minimum wage, based on an index of minimum living need (KML), was replaced by a system of minimum wage proposals, based an estimated cost of living indicator (KHL) calculated by local government and, mediated by a tripartite wage council, set by provincial government.

distribution and in most countries (14 of 19) lifted wages in both the formal and the informal sector (Kristensen and Cunningham 2006). It has also been suggested that between 2002 and 2007, under in majority left-of-centre regimes, this development continued, with wage (formal) employment growing faster than other forms of employment. Also through rising public social expenditure and redistribution efforts, policies of formalizing employment yielded some results (Cornia 2010). However, the *Global Wage Report 2010/11* seems to indicate a less rosy picture. It contains a table with a sample of 27 countries⁵ indicating no straightforward statistical relationship between the level of minimum wages and the incidence of low pay. The Report goes on in concluding, “Thus, while country experiences in Brazil and Chile show that minimum wages have great potential for improving the situation of low-paid workers, the larger picture shows that this potential is often wasted” (ILO 2010a: 70).

The ILO report emphasizes that in practice, there are several reasons why the effectiveness of minimum wages may be limited, one obvious factor being enforcement. The labour organisation warns that weak implementation machinery –characterized by few labour inspectors, low probability of detection and/or light sanctions– will often result in large-scale non-compliance. Compliance is already a problem in high-income countries like in the EU (cf. Vaughan-Whitehead 2008), and this may be even stronger the case in developing countries with often weakly developed institutions and small budgets. A second factor limiting the impact of minimum wages may be weak or imperfect coverage, whereby many vulnerable workers are excluded from social protection. Third, the ILO argues, even with broad coverage and genuine enforcement efforts, minimum wages in developing countries will be more effective in the formal than in the informal economy. Finally, the level of the minimum wage matters. Very low (‘mini’) minimum wages, on the one hand, will likely discourage labour market participation, nor do they not help in reaching a more equal income distribution and prevent a ‘race to the bottom’. On the other hand, very high (‘maxi’) minimum wages, often originating from situations where collective bargaining was weak or absent, may fuel inflation because of the wide availability of cash money, may lead to either non-enforcement or displacement of low-paid workers into unemployment or informal employment, and may destroy industry competitiveness. It may even endanger collective bargaining as far as it exists (Saget 2008; ILO 2010a; Van Klaveren and Varkkey 2011). Most likely is the wide ignorance and the near-total lack of compliance of a relatively very high minimum wage, like the case of Mozambique indicates (Van Klaveren *et al* 2009a). With these arguments in mind, we will highlight outcomes on income distribution effects in four DFL countries: Brazil, India, Indonesia, and South Africa.

Concerning **Brazil**, one should realize that the real value of the statutory minimum wage was first to fall by nearly 50% between 1990 and 1995⁶, before increasing between 1995 and

⁵ Unfortunately, the statistical annexes of the *Global Wage Report 2010/11* provide no clear explanation which countries and which period were covered.

⁶ Stemming from the fact that the authorities wanted to moderate the effect of the statutory minimum wage on the massive public deficit of that period, as in Brazil the minimum wage served (and serves) as a reference for pensions and social benefits (Lemos 2004a; Saget 2008).

2009 from year to year (except in 2003). It was not until 2004 that its real value surpassed the 1990 level (Ferreira *et al* 2010). Moreover, in 2006 the government reinvigorated mechanisms to formalize domestic work, carried out by a large number of (poor) women (Tijdens and Van Klaveren 2011a). We already noted the finding on wage compression for Brazil. Indeed, various studies have pointed at the relation between the minimum wage increases taking place since 1995 and diminishing inequality. Saboia (2007, cited in ILO 2008), in an analysis of the impact of the minimum wage on the reduction in labour earnings inequality between 1995 and 2005, found that 64% of the improvement at household level was due to increases in the minimum wage. Lemos (2004b, 2007) proved that the finding concerning wage compression held for both the private and public sectors, and concerning the private sector for the formal and the informal parts. Her outcomes suggest that the statutory minimum wage redistributes in favour of the poorer workers in both the formal and the informal sectors, though differently: in favour of the very bottom of the income distribution in the formal sector, but more widely in favour of those in the bottom half of the informal sector. Moreover, the *Global Wage Report 2010/11* refers to a background study of Fontes and Pero, through a regression analysis showing that active adjustments in minimum wages were one of the critical determining factors which allowed Brazilian low-wage earners to move up to higher wages (ILO 2010a: 67).

In Brazil the minimum wage is of key influence as its hikes are often regarded as signals given to wage setting in the informal sector (the so-called *lighthouse* effect) and also acts as a *numeraire*, with the salaries of higher-paid formal workers expressed in multiples of the minimum wage. For Brazil, evidence of the lighthouse effect seems rather 'hard' (Maloney and Nunez Mendez 2004; Lemos 2004a): here, obviously trade unions and employers (organisations) widely use the minimum wage as a point of reference in bargaining processes.⁷ Both the formalization of jobs and the increases of the real minimum wage have been advantageous for (groups of) low-paid women. For example, in 2008 47.6% of formally employed female domestic workers earned the minimum wage or higher, whereas only 14.6% of their informally employed colleagues did. Yet, overall the risks to be low-paid in Brazil remain considerably higher for female workers than for males: in 2009 26.6% of females earned less than two-thirds of the median, against 16.7% of males (Fontes *et al* 2011).

In **Indonesia**, changes in minimum wages are overall negatively correlated with the share of those in low pay, but the size of the effect is relatively small, especially given the substantial increases in the Kaitz index since 2004. This can be explained by the fact that the smaller gap between minimum and average wages was driven more by stagnating or even falling real average wages (in spite of strong economic growth) than by increasing minimum wages (ILO 2010a: 70). From 2004 on, the role of the minimum wage in Indonesia seems on the way back. Strong increases in minimum wage levels in 2000-2003, when the government sought to accommodate to (new) union demands, were 'corrected' in the three next years (Manning and Roesad 2007), which continued in the years afterwards. Currently minimum wage levels remain less than a wage floor: for 2009, monthly food and non-food costs for three

⁷ Though there may well be also other forces at stake in the exchange of workers between formal and informal sector (Cf. Boeri *et al* 2011).

'consumption units' have been calculated at over 2.5 to four times the average minimum wage (Schulten 2009). Thus, minimum wages may fail to protect large numbers of the country's low-paid and vulnerable workers (Saget 2008: 41).

Unlike in Brazil, positive income effects of the Indonesian minimum on wages in the informal sector seem quite limited or non-existent. For Indonesia researchers did not univocally conclude to a lighthouse effect, at least not for males. One research team indeed found for men rising wages in the formal sector combined with higher pay in the informal sector (Comola and De Mello 2011), but another team found that minimum wage hikes did not have a positive effect at all on pay levels of men in the informal sector; only their hours worked seemed to increase significantly. In contrast, the lighthouse effect seems to concentrate on Indonesian women: minimum wage rises caused considerable upward pressure on pay of low-paid women in the informal sector (Chun and Khor 2010) – though it remains quite worrisome that, as mentioned, according to both teams employment effects were negative: women lost jobs in the formal segment.

For **India**, it has been concluded that in practice workers' rights are only legally protected for the small minority of workers who work in the organised industrial sector (ITUC 2009b; US Dept of State 2010). For a considerable part this has to do with a lack of transparency. As the *Global Wage Report 2010/11* puts it, "In India, the Minimum Wage Act of 1948 is considered to be one of the most important pieces of labour legislation; but India's system of minimum wages is also one of the most complex in the world (...). This system has resulted in innumerable minimum wage rates, which are difficult to monitor and enforce and are not applicable to all workers" (ILO 2010: 72). There is quite some evidence to support these judgments, as well as evidence that only small shares of employed women are earning at least the relevant minimum wage. For example, for 2004-05 the Indian National Commission for Enterprises in the Unorganised Sector (NCEUS) computed that even 31% of the regular salaried/wage workers did not receive the national minimum wage; in 2008 this relatively privileged category made up only about 12% of the Indian workforce (Van Klaveren *et al* 2010a). According to NCEUS, the share of female regular salaried/wage employed receiving less than the required minimum was with 54% double that of males (26%). However, large majorities of casual workers, in 2008 about 36% of the total workforce, earned (considerably) below the minimum wage. In 2004-05 this applied to 80% of all casual workers, and even 95% of the female casual workers (NCEUS 2007: 44-47; NCEUS 2009: 39, 141). Against this backdrop, it is highly unlikely that the current minimum wages, though categorized as 'maxi', substantially influence income redistribution and combat (female) poverty.

Nevertheless, in India the situation seems gradually improving. Recently, there is widespread debate going on how a more effective minimum wage system can be realized. A floor level minimum has been declared, which is disputed politically. Moreover, a new centrally sponsored scheme that provides an amount of guaranteed wage employment (and income) has already impacted the quality of life in rural India. Also, this MGNREGS (Mahatma Gandhi National Rural Employment Guarantee Scheme) has raised an interesting political debate with regard to the jurisdiction of the minimum wage across India. In 2005 the national government initiated the Mahatma Gandhi National Rural Employment Guarantee

Act (MGNREGA), enshrined in the Indian Constitution and an innovative combination of a minimum wage provision with a public employment annex rural development scheme. The MGNREGS legally guarantees 100 days of unskilled manual work at statutory minimum wages to each rural household in a year. Under the Scheme, many projects have been undertaken at village level, including water conservation, irrigation, rural connectivity, and land development. Conditions should be in place to allow women to undertake jobs in construction by providing water, child care facilities, and shade for children; jobs should be within a certain distance from the women's dwellings. In May 2009, the Scheme was reaching over 49 million households, and the participation rate of women workers in the scheme had increased to 47%. An evaluation study in six states learned that the MGNREGS wage has raised the bar for the determination of wages in agriculture. Scheme employment served as a primary wage earning opportunity for women, with a majority collecting their wages themselves and retaining with them (Papola 2008; Goparaju and Shome 2009; NCEUS 2009: 214-222). In contrast, recent studies point to persistent barriers to women's participation in MGNREGS, because of social norms; bias in local wages rates for women and the statutory minimum wage; presence of contractors; harassment and exploitation; and lack of child care facilities. In reality, corruption remains a main problem (Cf. Holmes *et al* 2010).

In **South Africa**, in the 2000s the formalisation of jobs and the expansion of the minimum wage floor to new sectors and occupations have had substantial positive effects on women's wages. For example, the formalisation of teachers, nurses and other public sector professionals into the Public Sector Co-ordinating Bargaining Council has had a positive effect on the earnings of females (Bhorat *et al* 2009: 33-6). At the lower end of the labour market, between 2001 and 2005 the monthly median wages of the elementary occupations increased by 65%, against an (unweighted) average increase for all nine occupational groups of 18%. This coincided with the extension of minimum wage legislation to industries not previously covered (Hlekiso and Mahlo 2006: 9, 16). In September 2002 roughly one million domestic workers, of which about 840,000 predominantly African and coloured women, were granted formal labour market protection; subsequently in November 2002 a schedule of minimum wages for domestics went into effect. In spite of the existence of only a small body of Labour Inspectors (Bhorat *et al* 2010), jointly the new regulations do appear to have raised the relative wages for domestic workers. Their average nominal hourly wages were in September of 2003 23% higher than they had been one year earlier, while for similar workers in other occupations the nominal increase was less than 5%. There was some decrease in employment, but that was not clearly related to the wage increase. For many low-paid women the minimum wage made a difference (Hertz 2005). Budlender (2010) also found that average wages for South African domestic workers have risen without any significant employment loss since their minimum wages came into effect, though she notes that their average working hours have decreased. Using Labour Force Survey 2007 data, moreover, the same author has calculated that domestic workers still suffer from a 'wage penalty', earning 13.6% less than other employees with the same characteristics (Budlender 2011a, b).

4 The WageIndicator results

4.1 The data on minimum wages

Do the workers earning below or on the minimum wage differ from those above the minimum wages? For three countries, Brazil, Indonesia and Zambia, we will explore their personal and household characteristics, working time characteristics, occupations, regions and additions to pay. The three countries are chosen because *WageIndicator* has conducted a paper-based face-to-face survey in Indonesia in 2010, and one in Zambia in 2011. For Brazil, we use the data from the *WageIndicator* web-survey in 2010. We do not use the data from the web-survey in the other DFL countries, because the number of observations is largest in Brazil and the bias due to illiteracy and Internet access is not such a problem in that country as in the other countries. An explanatory note about the *WageIndicator* web-survey can be found in the Appendix of this report or at www.wageindicator.org.

Table 4 presents the number of observations for the three countries. In Brazil, 13,046 observations were used, for Indonesia 1,323 observations and for Zambia 1,417 observations. The face-to-face survey in Indonesia targeted the labour force. It was a non-random sample of employees and own-account workers, including the informal workers, in six regions and for a limited set of occupations. The face-to-face survey in Zambia targeted the labour force too. It was a non-random sample of employees and own-account workers in five of the nine provinces in Zambia, specifically in the following towns: Lusaka, Kabwe, Ndola, Kitwe, Livingstone, Monze, Mazabuka, and Solwezi. Most of the respondents were drawn from a limited set of occupations.

For the classification who earns below/on or above the minimum wage, we compared the respondents' hourly wage with the hourly minimum wage in the country (Brazil and Zambia) or in the province (Indonesia) in 2010 or 2011.

It should be clear that the data in this report is not representative for the labour force in the countries at stake. The reason is that the *WageIndicator* web-survey is a volunteer survey, thus only web-visitors interested in the topic of the website may complete the survey. In addition, the *WageIndicator* survey is a web-survey, thus it requires reading skills. Based on comparisons with representative data about the labour force from ILO, we know that younger and male workers are overrepresented in the *WageIndicator* survey data, whereas older and the female workers are underrepresented.

Table 4 Numbers of respondents in the three surveys, selection workers with valid wage information, breakdown by survey year.

| | 2010 | 2011 |
|-----------|--------|-------|
| Brazil | 13,046 | 0 |
| Indonesia | 1,323 | 0 |
| Zambia | 0 | 1,417 |

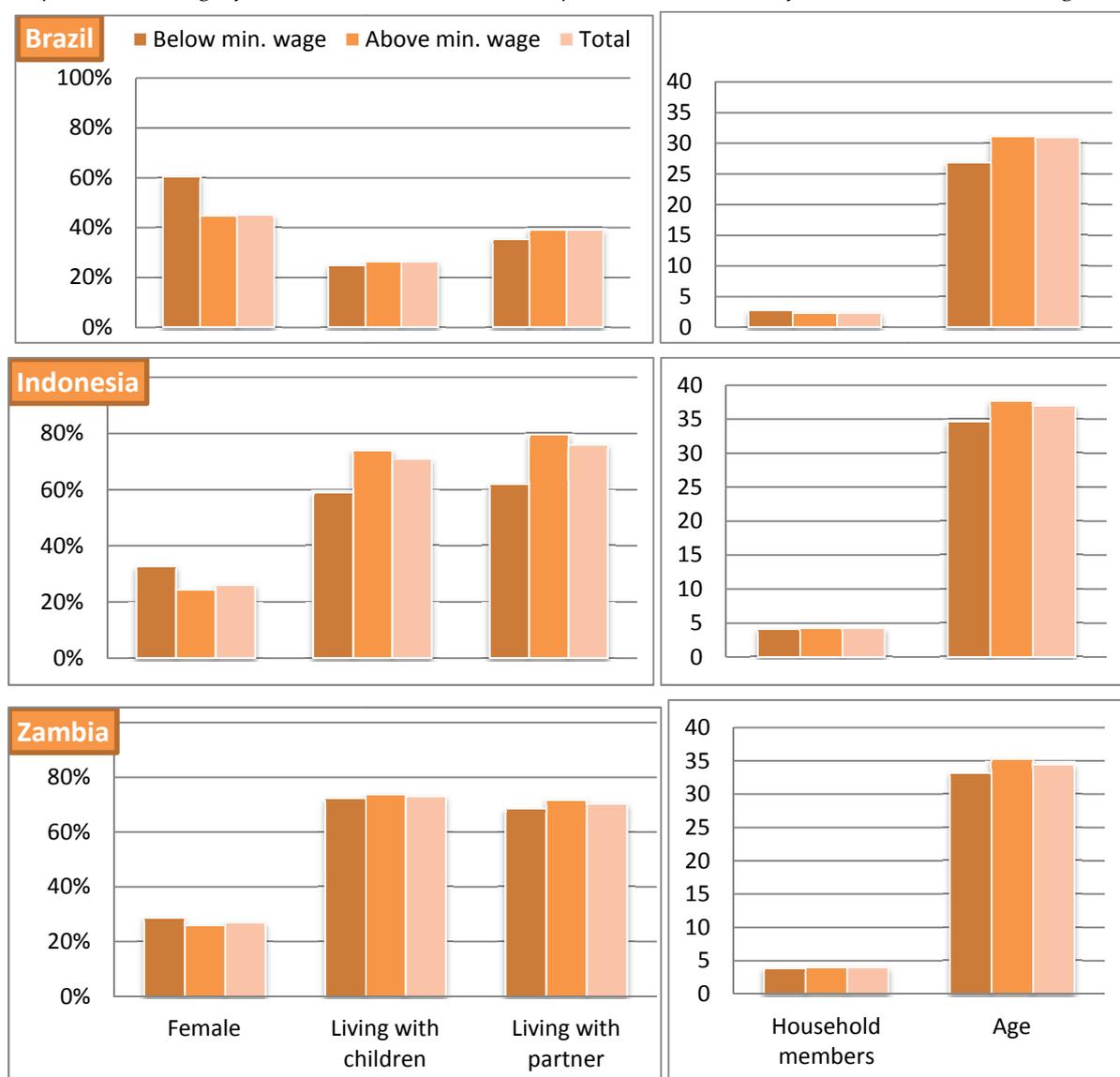
Source: *WageIndicator* data Brazil 2010; Indonesia 2010; Zambia 2011

4.2 Personal and household characteristics

Do the workers earning below/on the minimum wage differ from those earning above the minimum wage with respect to their personal and household characteristics? Graph 1 shows the results for the three countries. Here, we report the differences between those below/on and above the minimum wage, but only if these differences are statistically significant.

In Brazil and Indonesia, more females than males earn below/on the minimum wage, whereas in Zambia no gender difference exists. In Indonesia, workers below/on the minimum wage level live less often with children and with a partner, whereas this difference does not exist in Brazil and Zambia. In Brazil, the households of workers earning below/on the minimum wage count on average more members compared to workers earning above the minimum wage, whereas in Indonesia and Zambia this difference does not exist. In all three countries, workers below/on the minimum wage are on average younger.

Graph 1 Percentages females, with children and with partner, and number of household members and age .

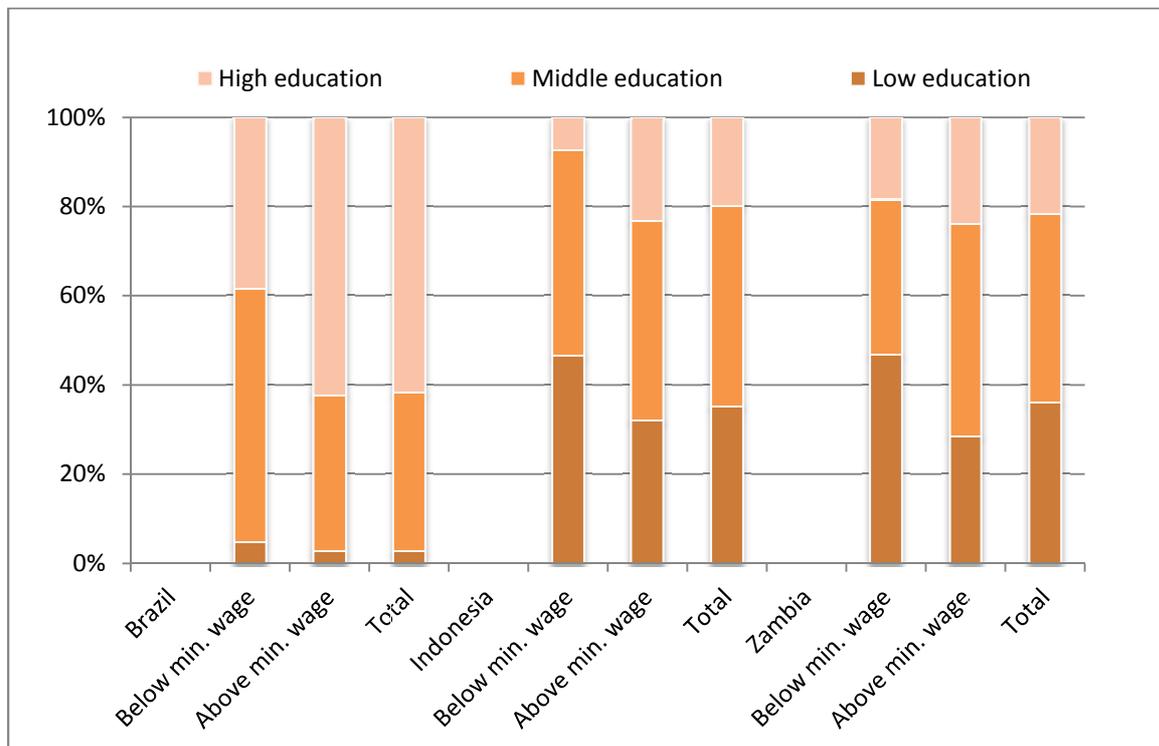


Source: WageIndicator data Brazil 2010; Indonesia 2010; Zambia 2011

4.3 Educational characteristics

Do the workers earning below/on the minimum wage differ from those earning above the minimum wage with respect to their education? Graph 2 shows the results for the three countries. In all three countries, as expected, the workers below/on the minimum wage have more often a low education and a middle education and less often a high education. In all three countries, these differences are significant across the two groups.

Graph 2 Percentages females, with children and with partner, and number of household members and age .

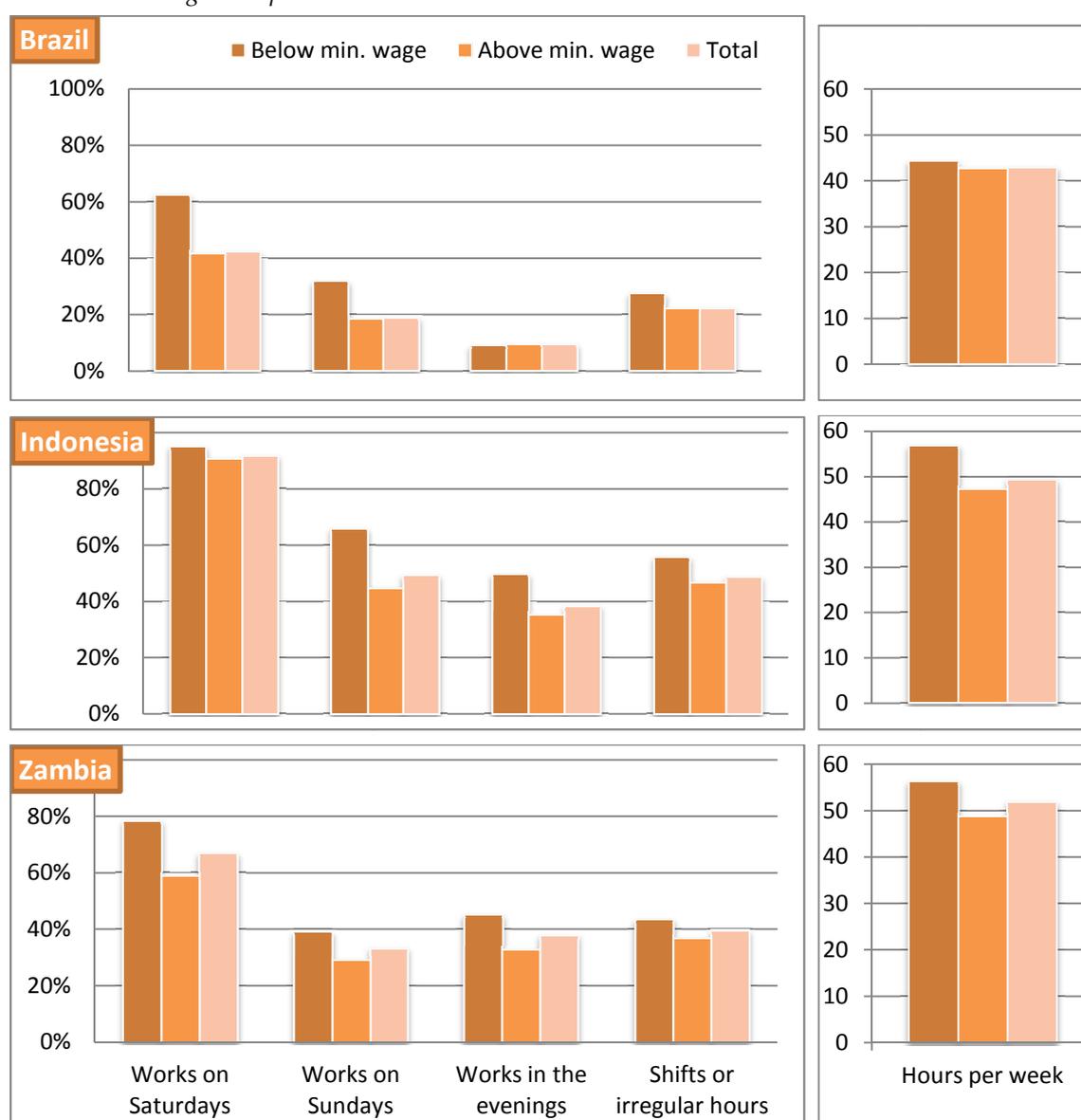


Source: WageIndicator data Brazil 2010; Indonesia 2010; Zambia 2011

4.4 Working time characteristics

Do the workers earning below/on the minimum wage differ from those above the minimum wages with respect to their working time characteristics? Graph 3 shows the results. In all three countries, workers earning below/on the minimum wage work more often regularly on Saturdays, they also work more often regularly on Sundays, and they work more often regularly in the evenings. The latter is however not a significant difference in Brazil. In all three countries, workers earning below/on the minimum wage work more often in shifts or on irregular hours. Finally, in all three countries, workers earning below/on the minimum wage work more hours per week. In Brazil, the difference between the two groups is only 1.5 hours, but in Indonesia this is 9.7 hours and in Zambia it is 7.5 hours.

Graph 3 Percentages working regularly on Saturdays, Sundays, evenings and shifts or irregular hours, and working hours per week.

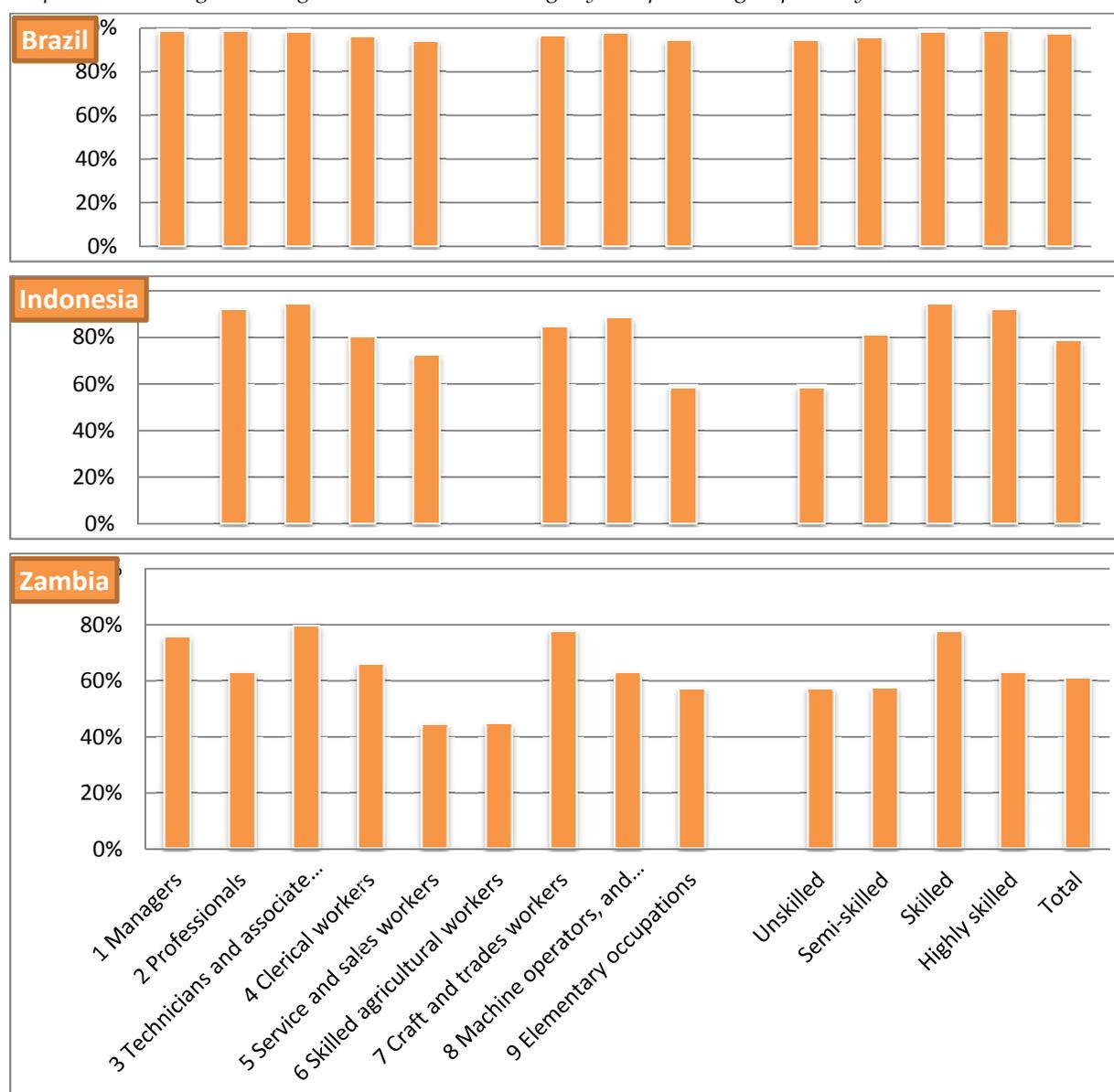


Source: WageIndicator data

4.5 Occupational characteristics

Do the workers earning below/on the minimum wage differ from those above the minimum wages with respect to their occupations? The survey asks for the job title, and all titles are classified according to ILO's International Standard Classification of Occupations (ISCO08). Nine categories are distinguished, as shown in Graph 4. In all three countries, the share of persons below/on the minimum wage is highest in the 'Service and sales workers' and the 'Elementary occupations'. In Zambia, also the 'Skilled agricultural, forestry and fishery workers' have low earnings, but unfortunately this occupational group has insufficient respondents in the other two countries. The ISCO08 occupations are classified according to their required skill level. The graphs shows that the share of workers below/on the minimum wage is highest for the unskilled and lowest for the highly skilled, and that the relationship is significant (Brazil $R=.076$; Indonesia $R=.257$; Zambia $R=.084$)

Graph 4 Percentages earning above the minimum wage by occupational group and by skill level.



Source: WageIndicator data Brazil 2010; Indonesia 2010; Zambia 2011

4.6 Regional characteristics

Do the workers earning below/on the minimum wage differ from those above the minimum wages with respect to the region where they live? Graph 5 shows that, whereas in Brazil the share above the minimum wage hardly varies with respect to region, this is the case in Indonesia and in Zambia. In Indonesia, the highest percentage of workers above the minimum wage is found in Southern Sulawesi and in Zambia this is in Central Zambia. Graph 5 also shows that for Zambia the larger the city, the higher the percentage above the minimum wage. For Brazil this is also the case, but not significant. Unfortunately, this data is not available for Indonesia.

Graph 5 Percentages earning above the minimum wage by region and urbanisation.

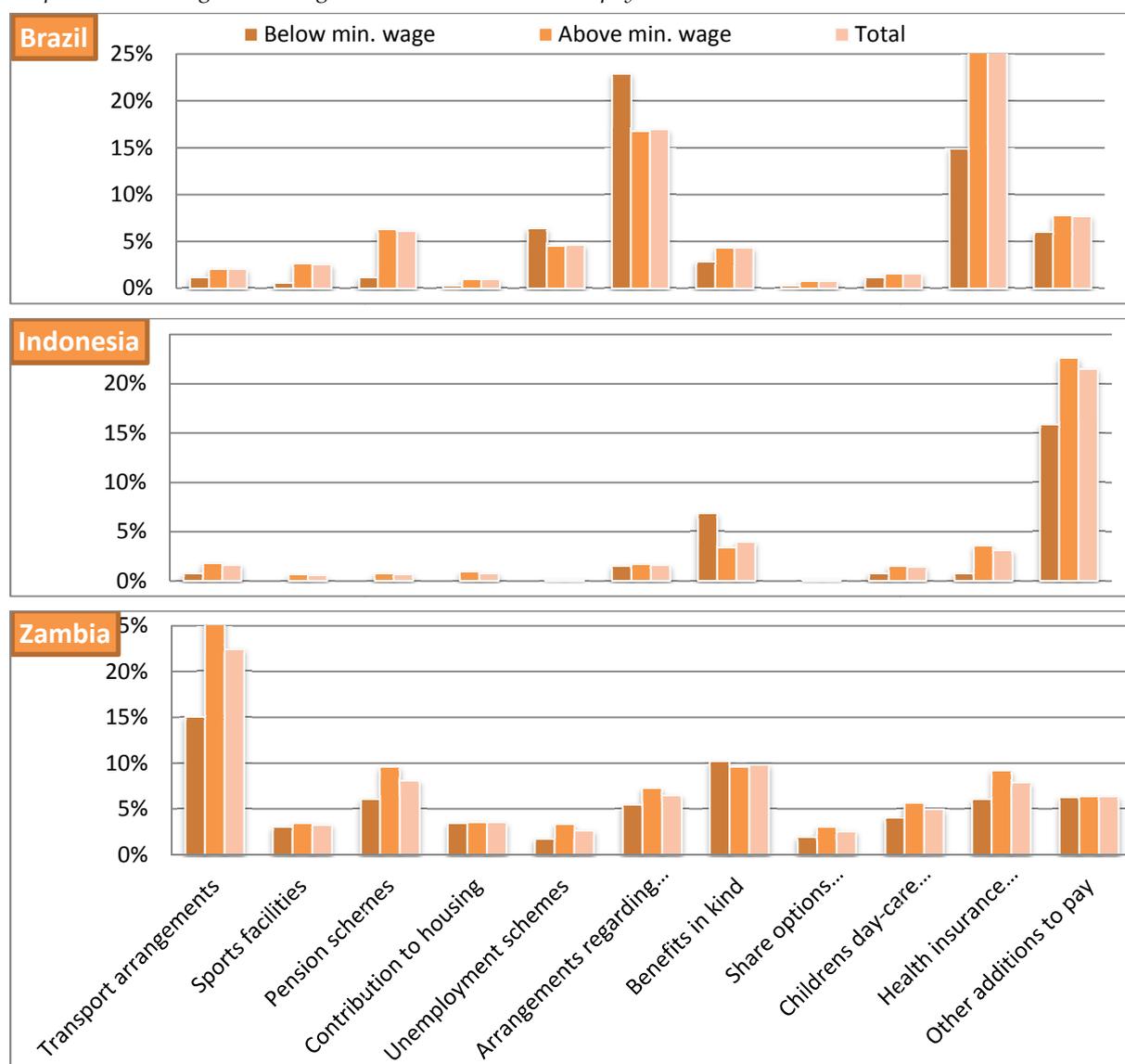


Source: WageIndicator data Brazil 2010; Indonesia 2010; Zambia 2011

4.7 Wage characteristics

Do the workers earning below/on the minimum wage differ from those above the minimum wages with respect to additions to their pay? Graph 6 shows that countries largely differ with respect to additional pay. Whereas in Brazil and Indonesia hardly any payments for transport are paid, this occurs frequently in Zambia, though the workers above the minimum wage receive this addition more often. In Brazil, workers are much more often subject to arrangements regarding reimbursement of expenses, particularly the workers below/on the minimum wage. Benefits in kind occur most frequently in Zambia, and these do not differ across the two groups. Health insurance or employer's health-related payments are most frequently reported in Brazil, by the workers above the minimum wage almost twice those below/on the minimum wage. In Zambia and Indonesia these payments are also reported, though to a lesser extent. In both countries the workers below/on the minimum wage receive these contributions less frequently.

Graph 6 Percentages receiving schemes in addition to the payments in the last 12 months.

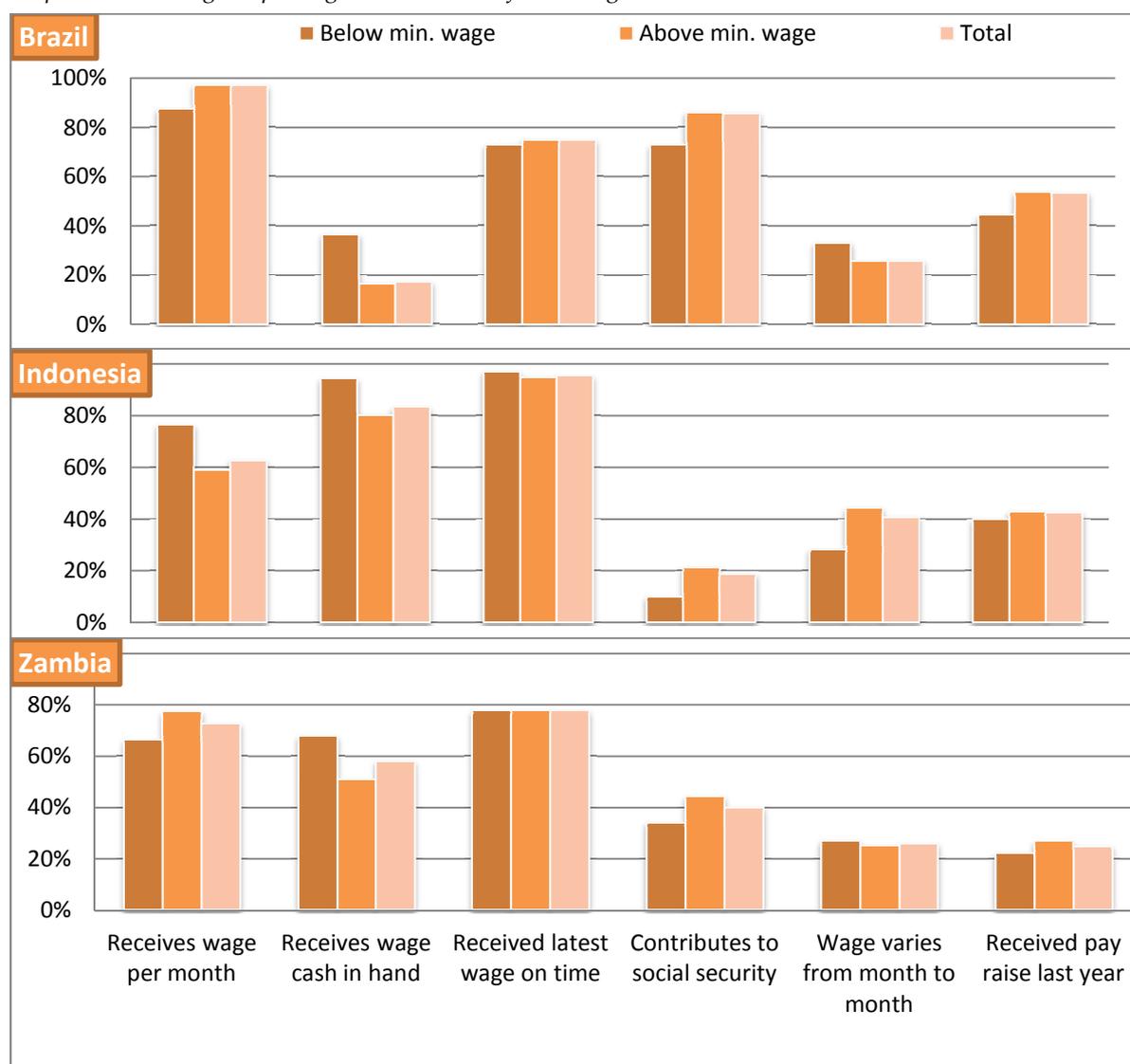


Source: WageIndicator data Brazil 2010; Indonesia 2010; Zambia 2011

4.8 Payment systems

Are the workers below/on and above the minimum wages subject to different payment systems? Graph 7 shows that this is indeed the case. In Brazil and Zambia, the group below/on the minimum wage receives less often a monthly wage, whereas the opposite holds in Indonesia. In all three countries, the workers below/on the minimum wage more often receive their wage cash in hand. In all three countries, they contribute less often to social security. In Brazil, the group below/on the minimum wage has more monthly fluctuations in their wages, whereas in Indonesia this applies to the group above the minimum wage, and in Zambia no difference exists in this respect. In all three countries, the two groups do not differ with respect to receiving their wages on time and to receiving a pay rise in the last year. Note that the latter is only asked to the employees, not to the own-account workers.

Graph 7 Percentages reporting characteristics of their wages.

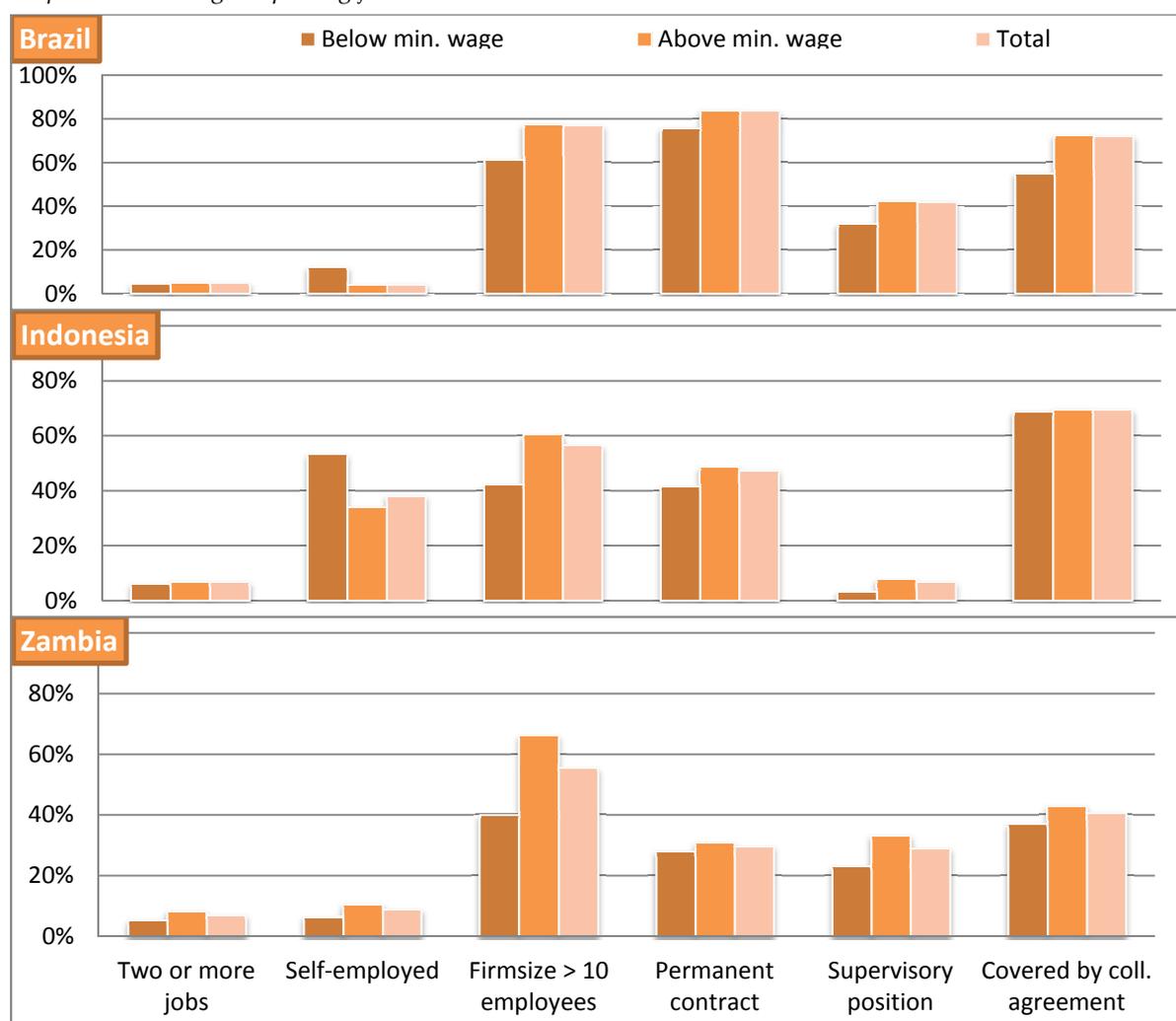


Source: WageIndicator data Brazil 2010; Indonesia 2010; Zambia 2011

4.9 Job characteristics

Do the workers earning below/on the minimum wage differ from those above the minimum wages with respect to their job characteristics? Graph 8 shows that in Zambia, the workers below/on the minimum wages have significantly less often two or more jobs, whereas in Brazil and Indonesia no significant differences can be noticed in this respect. In Brazil and Indonesia, the workers below/on the minimum wages are significantly more often self-employed or own-account workers, whereas the opposite holds for Zambia. In all three countries, the workers below/on the minimum wages work significantly less often in a firm or organisation with at least 10 employees. In Brazil, the employees below/on the minimum wages less often have a permanent employment contract, whereas in Indonesia and Zambia the incidence of a contract is not significantly different for the two groups. Not surprisingly, in all three countries, the employees below/on the minimum wages less often have a supervisory position. In Brazil and Zambia, the employees below/on the minimum wages less often are covered by a collective agreement, whereas in Indonesia coverage is not a significant difference across the two groups. Note that the questions about employment contract, supervisory position and collective agreement are only asked to the employees.

Graph 8 Percentages reporting job characteristics.



Source: WageIndicator data Brazil 2010; Indonesia 2010; Zambia 2011

4.10 Which characteristics influence the chance of being paid below/on the minimum wage?

Do the workers earning below/on the minimum wage differ from those above the minimum wages? In this section we explore which personal, job and wage characteristics influence the probability of being paid above the minimum wage. Table 5 shows the results of a logistic regression analyses for all workers and for the workers in dependent employment in Brazil, Indonesia and Zambia. The employees have been analysed separately, because a number of characteristics are surveyed for the employees only, such as if wages are received cash in hand.

The results show that being a female decreases substantially the chances of an earning above the minimum wage level in Brazil and in Indonesia, whereas no significant effect is found in Zambia. Being an own account worker decreases substantially the chances of having an earning above the minimum wage level in Brazil. In Indonesia no significant effect is found, whereas in Zambia the own-account status even increases the chances of having an earning above the minimum wage level. The results show that age increases the chance of earning above the minimum wage level in Brazil and Indonesia, whereas no significant effect is found in Zambia. Living with children increases the chances of earning above the minimum wage, but has no effect in Brazil and Zambia. Living with a partner and the number of household members do not influence the chance of earning above the minimum wage level.

Regarding education, in Brazil a high education increases the chances of earning above the minimum wage, in Indonesia no effect is found, and in Zambia having both a low and a high education increases the chances of falling below/on the minimum wages, indicating that only those with a middle education are less likely to earn below/on the minimum wage. Skill level increases the chances of earning above the minimum wage in Brazil and in Indonesia, but no effect is found in Zambia.

For the working time characteristics, the table shows that working on Saturdays decreases substantially the chances of having an earning above the minimum wage level in Brazil and in Zambia, whereas no effect is found in Indonesia. Working on Sundays decreases substantially the changes of having an earning above the minimum wage level in Brazil, whereas no effect is found in Indonesia and Zambia. Working in the evening has no effect on the chance of falling below/on and above the minimum wage. Working in shifts or irregular hours decreases substantially the chances of having an earning above the minimum wage level in Indonesia, whereas no effect is found in Brazil and Zambia. In all three countries, we find an effect of the number of working hours, indicating that the shorter the working hours, the more the chances increase of having hourly earnings above the minimum wage.

Contributing to social security increases the chances of being paid above the minimum wage in Brazil and in Indonesia, whereas the opposite holds for Zambia. Having two or more jobs decreases the odds of earnings below/on the minimum wage in Indonesia, but not in Brazil and Zambia. Working in a firm or organisation with more than ten employees increases the chances of being paid above the minimum wage in Zambia, but no effect is found in Brazil or Indonesia.

For each country, the analyses were also performed for the employees only, thereby including more characteristics which are typically for employees only. The table shows for each country the results in the second panel. Having a permanent employment contract does not affect the chance of being paid below/on or above the minimum wage in Brazil and in Indonesia. This characteristic is not available for Zambia. Having a supervisory position does not affect the chance of being paid below/on or above the minimum wage in Brazil and in Indonesia, but it increases the chances of being paid above the minimum wage in Zambia. Being covered by a collective bargaining agreement increases the chances of being paid above the minimum wage in Brazil, but does not affect the chance of being paid below/on or above the minimum wage in Indonesia and in Zambia. Receiving a wage cash in hand does not affect the chance of being paid below/on or above the minimum wage in Brazil, but it decreases substantially the chances of being paid above the minimum wage in Indonesia and in Zambia. In case one's wage vary across the months, this does not affect the chance of being paid below/on or above the minimum wage in Brazil and in Zambia, but it increases the chance of being paid above the minimum wage substantially in Indonesia. Finally, having received a pay increase in the previous year increases chances of being paid above the minimum wage in Brazil, whereas it has no effect in Indonesia and Zambia.

In summarizing we can conclude that, looking at personal characteristics, in the three countries researched two categories have higher chances to be below or just on the minimum wage: women and young workers (though both not significantly in Zambia). For these two groups our results fit in with those of other researchers, not only for developing countries but also for high-income countries.⁸ The results confirm that a statutory minimum wage or, within reasonable limits, an increased minimum wage universally will work out most positively for women, in raising the bottom of the wage distribution, reducing poverty and also, under certain conditions, reducing the gender pay gap.

⁸ See for example the contributions from Bulgaria, Croatia, Germany, Greece, Ireland and the Netherlands in Vaughan-Whitehead 2008.

Table 5 Effect of personal, job and wage characteristics on the probability of being paid above the minimum wage (0=below/on minimum wage, 1= above minimum wage).

| | Brazil | | | Indonesia | | | Zambia | | | | | | | | | | | |
|------------------------------|---------|------|------|-----------|------|------|---------|------|------|--------|------|-------|---------|------|-------|---------|------|------|
| | all | | empl | all | | empl | all | | empl | | | | | | | | | |
| | Exp(B) | sign | S.E. | Exp(B) | sign | S.E. | Exp(B) | sign | S.E. | Exp(B) | sign | S.E. | | | | | | |
| Own-account / self-empl. | .193 | *** | .253 | | | | .810 | | .221 | | | 3.058 | *** | .266 | | | | |
| Age | 1.084 | *** | .012 | 1.093 | *** | .015 | 1.014 | * | .008 | 1.037 | ** | .015 | 1.012 | .009 | 1.020 | * | .011 | |
| Female | .519 | *** | .136 | .575 | *** | .157 | .522 | *** | .180 | .814 | | .293 | .883 | .156 | .894 | | .176 | |
| Living with children | 1.188 | | .145 | 1.218 | | .170 | 2.157 | *** | .238 | 2.679 | *** | .355 | 1.242 | .186 | 1.297 | | .214 | |
| Living with partner | .800 | | .158 | .758 | | .185 | .888 | | .242 | .848 | | .368 | .983 | .209 | .878 | | .238 | |
| Househ. mbrs | .982 | | .051 | 1.055 | | .060 | 1.048 | | .055 | 1.092 | | .083 | 1.033 | .051 | 1.004 | | .056 | |
| Low educated | .811 | | .337 | .795 | | .387 | .904 | | .171 | 1.845 | ** | .307 | .465 | *** | .172 | .477 | *** | .200 |
| High educated | 1.890 | *** | .147 | 1.778 | *** | .170 | 1.173 | | .290 | 1.499 | | .383 | .551 | *** | .209 | .374 | *** | .248 |
| Skill level (1=low, 4=high) | 1.490 | *** | .098 | 1.630 | *** | .117 | 2.042 | *** | .120 | 1.300 | | .181 | .845 | | .106 | .878 | | .118 |
| Works on Saturdays | .708 | ** | .156 | .761 | | .186 | 1.323 | | .311 | 1.212 | | .442 | .660 | ** | .178 | .589 | *** | .204 |
| Works on Sundays | .680 | ** | .192 | .560 | *** | .219 | .971 | | .187 | .710 | | .304 | 1.089 | | .163 | 1.110 | | .185 |
| Works in the evenings | 1.259 | | .268 | 1.350 | | .330 | .876 | | .185 | 1.137 | | .307 | .908 | | .178 | .991 | | .204 |
| Shifts or irregular hours | .921 | | .191 | 1.013 | | .232 | .753 | * | .166 | .753 | | .266 | 1.130 | | .172 | 1.101 | | .199 |
| Hours per week | .953 | *** | .011 | .960 | *** | .013 | .962 | *** | .006 | .953 | *** | .010 | .953 | *** | .007 | .953 | *** | .008 |
| Contrib. to social security | 1.665 | *** | .153 | 1.633 | *** | .189 | 1.604 | * | .244 | 1.521 | | .287 | .725 | * | .167 | .582 | *** | .196 |
| Two or more jobs | 1.455 | | .381 | 1.309 | | .475 | .497 | ** | .326 | 1.313 | | .583 | 1.585 | | .313 | 1.287 | | .361 |
| Firmsize > 10 employees | 1.182 | | .142 | 1.096 | | .174 | .841 | | .207 | .977 | | .293 | 2.416 | *** | .158 | 2.584 | *** | .179 |
| Permanent contract (if empl) | | | | .927 | | .194 | | | | .895 | | .232 | | | | | | |
| Supervisory position | | | | 1.263 | | .163 | | | | 1.474 | | .427 | | | | 1.410 | * | .191 |
| Covered by coll.agreement | | | | 1.486 | ** | .166 | | | | 1.065 | | .250 | | | | .891 | | .191 |
| Receives wage cash in hand | | | | .881 | | .185 | | | | .263 | *** | .335 | | | | .706 | * | .202 |
| Wage varies per month | | | | .945 | | .172 | | | | 2.211 | *** | .270 | | | | .788 | | .185 |
| Received pay raise last year | | | | 1.350 | * | .155 | | | | .956 | | .235 | | | | .821 | | .193 |
| Constant | 7.647 | *** | .633 | 2.210 | | .772 | 2.866 | * | .599 | 7.060 | ** | .951 | 16.826 | *** | .494 | 22.458 | *** | .595 |
| N | 8533 | | | 6396 | | | 1314 | | | 783 | | | 1088 | | | 885 | | |
| Chi-square | 315.47 | | | 261.76 | | | 230.76 | | | 135.21 | | | 184.50 | | | 165.80 | | |
| -2 Log likelihood | 2066.97 | | | 1538.52 | | | 1135.81 | | | 542.34 | | | 1264.89 | | | 1015.01 | | |

Source: WageIndicator data, *** $p < 0.01$, ** $p < 0.05$; * $p < 0.1$

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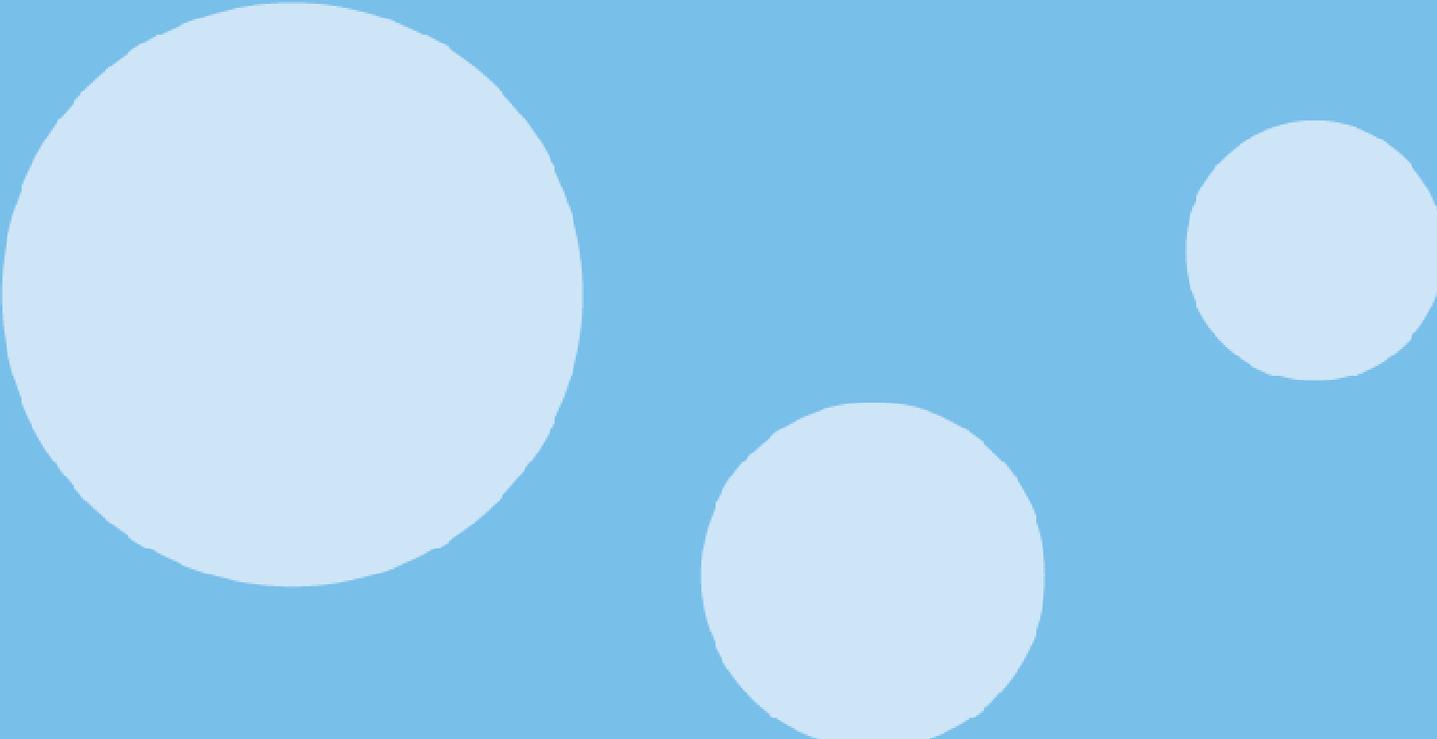
Appendix 1 The web-survey

This paper uses survey data of individuals from eight countries. The data stem from the continuous, volunteer *WageIndicator* web-survey (www.wageindicator.org). This is an international comparable survey in national languages, posted at the frequently visited *WageIndicator* websites. The survey contains questions about wages, education, occupation, industry, socio-demographics, and alike (Tijdens *et al*, 2010). In 2000, the *WageIndicator* project started as a paper-and-pencil survey for establishing a website with salary information for women's occupations in the Netherlands. By mid 2011, it had developed into an online data collection tool hosted on more than 60 national websites with job-related content, labour law and minimum wage information, and a free and crowd-pulling Salary Check presenting average wages for occupations. The web-survey has a prize incentive; it takes approximately 10 minutes to complete part 1 and 10 minutes for part 2.

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