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Why is informal employment more common in some countries? an exploratory analysis of 112 countries

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Why is informal employment more common in some countries? an exploratory analysis of 112 countries

Abstract

Purpose: This paper evaluates competing explanations for the greater prevalence of informal employment in some countries rather than others. These variously explain informal employment to be a result of either economic under-development and the lack of modernisation of governance ('modernisation' theory), higher taxes and too much state intervention ('neo-liberal' theory) or inadequate government intervention to protect workers from poverty ('political economy' theory).

Methodology: To do this, an International Labour Organisation data base produced in 2018 on the prevalence of informal employment in 112 countries (comprising 90 per cent of the global workforce) is analysed, and macro-level economic and social conditions reflecting each of these theories tested using bivariate regressions.

Findings: The prevalence of informal employment ranges from 94.6% of total employment in Burkina Faso to 1.2% in Luxembourg. Evaluating the validity of the competing theories, neo-liberal theory is refuted, and a call made to synthesise the modernisation and political economy perspectives in a new 'neo-modernisation' theory that tentatively associates the greater prevalence of informal employment with lower economic under-development, greater levels of public sector corruption, smaller government and lower levels of state intervention to protect workers from poverty.

Practical implications: This paper tentatively reveals the structural economic and social conditions that need to be addressed globally to reduce informal employment.

Originality/value: This is the first paper to report the results of a harmonised dataset based on common criteria to measure the varying prevalence of informal employment globally (across 112 countries representing 90 per cent of global employment) in order to determine the structural economic and social conditions associated with higher levels of informal employment.

Keywords: informal employment; informal economy; shadow economy; informal sector; development economics; economic development.

Introduction

Why is the informal employment more prevalent in some countries and smaller in others? For much of the last century, there was a clear consensus in scholarship. The belief was that informal employment was a developing country phenomenon resulting from economic under-development and a lack of modernisation of governance, which would naturally and inevitably disappear with economic development and modernisation (Geertz, 1963; Gilbert, 1998; Lewis, 1959). In recent decades, however, it has been revealed that informal employment prevails in developed as well as developing economies (Slavnic, 2010; Webb *et al.*, 2009; Williams and Lansky, 2013; Williams and Schneider, 2016) and appears to be growing in many nations (Dibben and Williams, 2012; ILO, 2013). This paper advances the resultant scholarship. The aim is to evaluate the competing theories that have emerged to explain the cross-country variations in the prevalence of informal employment.

To achieve this, the first section briefly reviews how informal employment can be defined and measured, and how the cross-country variations have been variously explained as resulting from either economic under-development and the lack of modernisation of governance (modernisation theory), too much state interference (neo-liberal theory) or inadequate state intervention to protect workers from poverty (political economy theory). Revealing that few attempts have been made to evaluate these contrasting explanations using a harmonised dataset, this paper fills this lacuna. To do so, the second section introduces the data, namely the International Labour Organisation's (ILO) harmonized data on the share of informal employment in total employment and in the informal sector across 112 developed and developing economies comprising 90 per cent of global employment, along with the indicators that can be used to evaluate the validity of the competing theories. The third section then reports the results followed in the fourth and final section by a discussion of the implications for theory and policy.

Defining, measuring and explaining informal employment

Defining informal employment

In this paper, the definition of informal employment agreed by the International Conference of Labour Statisticians (ICLS) is used (Hussmans, 2005; ILO, 2011, 2012, 2018). This recognises that the informal realm can be defined using either the enterprise or the employment relationship as the unit of observation. As Table 1 reveals, if the enterprise is used as the unit of observation,

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3 then informality is viewed in terms of ‘employment in the informal sector’ (A and B) whilst if
4 the employment relationship is the unit of observation, informality is viewed in terms of
5 ‘informal employment’ (A and C). In this paper, the employment relationship is used as the unit
6 of analysis by examining those engaged in informal employment (A+C).
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12 TABLE 1 ABOUT HERE
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15 In 1993, the 15th International Conference of Labour Statisticians defined an informal sector
16 enterprise as a private unincorporated enterprise that is unregistered or small in terms of the
17 number of employed persons. An unincorporated enterprise is defined as a production unit not
18 constituted as a separate legal entity independent of the individual (or group of individuals) who
19 owns it, and for which no complete set of accounts is kept. Meanwhile, an enterprise is defined
20 as unregistered if it is not registered under specific forms of national legislation (e.g., factories’
21 or commercial acts, tax or social security law, professional groups’ regulatory acts). An
22 enterprise is defined as small if its number of employees is below a specific threshold (e.g. five
23 employees) determined by national circumstances (Hussmans, 2005; ILO, 2011, 2012, 2018).
24 Here, therefore, informality was defined using the enterprise as the unit of analysis.
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32 However, the recognition that informal jobs exist in formal and informal enterprises,
33 and that defining informality as informal enterprise missed a considerable amount of
34 informality, in 2003, the 17th ILCS adopted the employment relationship as the unit of analysis
35 and defined those in informal employment as persons whose main jobs lack basic social or legal
36 protections or employment benefits and recognised that they may be found in the formal sector,
37 informal sector or households. Persons in informal employment were seen to include: (a) own-
38 account workers self-employed in their own informal sector enterprises; (b) employers self-
39 employed in their own informal sector enterprises; (c) contributing family workers; (d)
40 members of informal producers’ cooperatives; (e) employees with informal jobs in formal
41 sector enterprises, informal sector enterprises, and paid domestic workers employed in
42 households; (f) own-account workers engaged in self-provisioning, if considered employed in
43 the sense that the production makes an important contribution to household consumption (ILO,
44 2012, 2013). In relation to (e) above, namely employees with informal jobs, the 17th ILCS
45 defines an employee as in informal employment if the employment relationship is, in law or in
46 practice, not subject to national labour legislation, income taxation, social protection or
47 entitlement to certain employment benefits (e.g., notice of dismissal, severance pay, paid annual
48 or sick leave) (ILO, 2012, 2013, 2018).
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Hence, besides informal employment in informal sector enterprises (A), there is also formal employment in informal sector enterprises (B) and informal employment in formal sector enterprises (C). Indeed, the existence of informal employment in informal enterprises (A) is seen to signal a more intense form of informalisation because both the employment relationship and enterprise is informal, which is not the case with formal jobs in informal sector (B) and informal jobs in formal enterprises (C). In this paper, in consequence, the employment relationship is the unit of analysis and the prevalence of informality is measured by analysing the proportion of total employment that is informal employment (A+C), whilst the intensity of informality is analysed by examining the proportion of all employment that is informal employment in informal enterprises (A).

Measuring the prevalence informal employment

Calculating the level informal employment is difficult because this employment relationship is hidden from view. Examining the cross-country variations in informal employment is even more difficult because harmonised definitions and survey methods are rare. Despite these problems, recent decades have seen various attempts to do so. Two methods have been used, namely indirect survey methods which use either proxy indicators of the prevalence of informal employment or seek statistical traces of informal employment in macroeconomic data collected for other purposes (Williams and Schneider, 2016), and direct surveys (OECD, 2002, 2012; Ram and Williams, 2008).

Indirect methods involve four main techniques: the use of individual non-monetary proxy indicators such as the number of very small enterprises (ILO, 2002) or electricity demand (e.g., Friedman *et al.*, 2000; Lacko, 1999); the use of individual monetary proxy indicators such as the level of cash deposits (Gutmann, 1977) or money transactions (Feige, 2012; Frey and Weck, 1983), the use of income/expenditure discrepancies at either the aggregate or individual level (Paglin, 1994) and the use of multiple proxy indicators (e.g., Schneider, 2013; Schneider and Williams, 2013). The problem, however, is that there is little evidence that the proxy indicators used are appropriate measures of the level of informal employment (for a detailed review, see Williams and Schneider, 2016).

Direct surveys, meanwhile, can either take the form of quantitative, qualitative or mixed methods surveys. All direct surveys evaluating cross-country variations in the prevalence of informal employment have been quantitative surveys. Examples include a three-country comparison of some European countries (Pedersen, 2003), a 2007 Eurobarometer survey of informal employment across the European Union (Williams, 2013) and an analysis of 41 less

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3 developed economies (Williams, 2015). Until now, no direct surveys have been undertaken of
4 cross-country variations in the prevalence and intensity of informal employment across both
5 developed and developing countries. As will be shown below, this has now been resolved with
6 the production by the ILO of harmonized data on the share of informal employment in total
7 employment using data from national labour force surveys or similar national household
8 surveys which allow harmonized international comparisons (ILO, 2018).
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15 *Explaining cross-country variations in informal employment*

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17 Reviewing scholarship explaining the prevalence of informal employment, its variable size
18 across countries has been variously explained as resulting from either economic under-
19 development and a lack of modernisation of governance (modernisation theory), state over-
20 interference in the free market (neo-liberal theory) or inadequate state intervention to protect
21 workers from poverty (political economy theory). Each is here considered in turn.
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25 For much of the twentieth century, informal employment was seen to be little more than
26 a leftover from a pre-modern mode of production that was fading from view. As such, little
27 attention was paid to this form of work that was perceived as a residue and as disappearing.
28 Economies in which informal employment persisted were thus conceptualised as “under-
29 developed” and even “backward” compared with those countries in which the modern formal
30 economy was prevalent, which were viewed as “advanced” and “developed” (Geertz, 1963;
31 Gilbert, 1998; Lewis, 1959). The result was that informal employment became a signal of
32 under-development and a phenomenon that would disappear with economic development and
33 the modernisation of governance. There is thus asserted to be a higher prevalence of informal
34 employment in less developed economies with a lack of modernisation of governance. To test
35 its validity, the following hypothesis can be evaluated:
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46 *Modernisation hypothesis (H1):* informal employment will be more prevalent in
47 countries with: (H1a) less developed economies and (H1b) greater public sector
48 corruption.
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53 The recognition that informal employment is not declining, even in some countries witnessing
54 economic development and modernisation, led to the emergence of new theorisations. For neo-
55 liberal scholars, the prevalence of informal employment is a result of state over-interference in
56 the economy and welfare, and participation a rational economic decision voluntarily taken by
57 workers and enterprises to escape the formal economy due to the excessive costs, time and
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3 effort required to operate in the formal economy (e.g., Becker, 2004; De Soto, 1989, 2001;
4 London and Hart, 2004; Nwabuzor, 2005; Sauvy, 1984). For these neo-liberal scholars, when
5 workers and enterprises are confronted by high taxes and over-regulation, informal employment
6 is a rational economic strategy (De Soto, 1989, 2001; Perry and Maloney, 2007). Informal
7 employment for neo-liberals is therefore more prevalent in countries with higher taxes and
8 greater levels of state interference. To test the validity of this neo-liberal theory, the following
9 hypothesis can be evaluated:
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17 *Neo-liberal hypothesis (H2):* informal employment will be more prevalent in countries
18 with: (H2a) higher tax rates and (H2b) higher levels of state interference in the free
19 market.
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24 For scholars of a political economy persuasion, in stark contrast, the prevalence of informal
25 employment directly results from the advent of a de-regulated open global economy (Castells
26 and Portes, 1989; Davis, 2006; Gallin, 2001; Hudson, 2005; Slavnic, 2010), and outsourcing
27 and subcontracting are key means by which informal employment has become fully integrated
28 into contemporary global capitalism. Contrary to modernisation theory, therefore, “the informal
29 economy is far from a vestige of earlier stages in economic development. Instead, informality
30 is part and parcel of the processes of modernization” (Fernandez-Kelly, 2006, p. 18). Therefore,
31 this is a largely unregulated sphere involving low-paid insecure work conducted under
32 “sweatshop-like” conditions as a survival tactic by marginalised populations (Castells and
33 Portes, 1989; Davis, 2006; Gallin, 2001; ILO, 2002). In the emergent post-Fordist and post-
34 socialist era, informal employment is a survival mechanism due to the absence of alternative
35 means of livelihood. To test the validity of this political economy theory, the following
36 hypothesis can be evaluated:
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48 *Political economy hypothesis (H3):* informal employment will be more prevalent in those
49 countries with lower levels of state intervention to protect workers from poverty.
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53 *Evaluating the rival theories*

54 Until now, most explanations for cross-country differences in the level of informal employment
55 have adopted one of the above three ‘logics’. Some studies, nevertheless, have contended that
56 different theories apply to different populations or activities, such as political economy
57 explanations to informal waged employment and neo-liberal explanations to informal self-
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3 employment (Perry and Maloney, 2007; Williams *et al.*, 2013), political economy explanations
4 to relatively deprived populations and neo-liberal explanations to relatively affluent populations
5 (Evans *et al.*, 2006; Pfau-Effinger, 2009; Williams, 2004; Williams and Windebank, 2006), or
6 political economy explanations to women's informal work and neo-liberal explanations to the
7 voluntary exit rationales that characterise men's engagement (Franck, 2012; Grant, 2013;
8 Williams, 2011).

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13 Few studies have conducted an evidence-based evaluation of these competing theories
14 in relation to cross-country variations in the scale of informal employment. The exceptions are
15 study of the European Union (e.g., Williams, 2013) and 41 less developed economies
16 (Williams, 2015). Both find evidence to support the tenets of both the modernisation and
17 political economy theories but little evidence to support neo-liberal theory. No studies have so
18 far evaluated the validity of these theories globally across developed and developing countries.
19 It is this gap that is now filled.

26 27 **Data and methods**

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30 To estimate the variations in the level of informal employment across developed and developing
31 countries, ILO (2018) harmonized data on the share of informal employment is here analysed.
32 The ILO (2018) estimates are based on the analysis of 112 countries' micro datasets (latest
33 available national labour force surveys or similar national household surveys) representing 90%
34 of global employment. The main advantage of this dataset is that it uses a common definition
35 of informal employment and of informal employment in the informal sector and harmonised
36 data to enhance comparability between countries (for further details, see ILO, 2018). In this
37 harmonised survey, moreover, a respondent is classified as engaging in informal employment
38 only if they do so as their main job. This is likely to lead to an under-estimation of the total
39 prevalence of informal employment globally.

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42 To analyse the wider economic and social conditions that each theory associates with
43 higher levels of informal employment, macro-level indicators have been used from various data
44 sources for the latest available year (International Monetary Fund, 2016; Social Progress
45 Imperative, 2018; Transparency International, 2017; United Nations, 2017; World Bank, 2015,
46 2016a,b,c,d,e,f,g,h, 2017a,b,c; World Economic Forum, 2017). Indeed, using the latest
47 available year for each indicator is an approach widely adopted in previous studies (e.g., ILO,
48 2018). **Country-level indicators considered important in each explanation were selected
49 according to previous literature, with the same or similar country-level indicators used as in**

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3 previous analyses assessing these theories (e.g., Eurofound, 2013; European Commission,
4 2013; Vanderseyen *et al.*, 2013; Williams, 2013, 2014, 2015; Williams and Horodnic, 2015,
5 2017). The outcome is that a comprehensive set of indicators are used to test the wider economic
6 and social conditions that each theory associates with higher levels of informal employment.
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10 To test modernisation theory that the level of economic development is an important
11 determinant, the conventional indicator of GNP per capita is used (ILO, 2012; Yamada, 1996).
12 Given the widespread criticism of this as an indicator of ‘development’ (Kuznets, 1962), both
13 this and additional alternative measurements of ‘development’ are used **similarly to previous**
14 **studies (Williams, 2013, 2014, 2015; Williams and Horodnic, 2015, 2017)**, namely:
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- 18 • *GDP per capita*. Gross domestic product per capita, current prices (purchasing power
19 parity; international dollars) (International Monetary Fund, 2016).
- 20 • *GNI per capita* (GNI per capita, PPP current international dollars). PPP GNI is gross
21 national income (GNI) converted to international dollars using purchasing power parity
22 rates. GNI is the sum of value added by all resident producers plus any product taxes (less
23 subsidies) not included in the valuation of output plus net receipts of primary income
24 (compensation of employees and property income) from abroad (World Bank, 2017a).
- 25 • *Household final consumption expenditure per capita* (i.e., private consumption per capita)
26 (constant 2010 US\$). This covers the market value of all goods and services, including
27 durable products (such as cars, washing machines, and home computers), purchased by
28 households. It excludes purchases of dwellings but includes imputed rent for owner-
29 occupied dwellings and payments and fees to governments to obtain permits and licenses
30 (World Bank, 2017c).
- 31 • *Human Development Index (HDI)*. The Human Development Index (HDI) is a summary
32 measure of average achievement in key dimensions of human development: a long and
33 healthy life, being knowledgeable and have a decent standard of living. This is intended to
34 shift the focus of development from national income accounting to people-centred policies
35 (United Nations, 2017).
- 36 • *Social Progress Index (SPI)*. This measures the extent to which countries provide for the
37 social and environmental needs of their citizens. Fifty-one social and environmental
38 indicators divided across three broad dimensions of social progress (basic human needs,
39 foundations of wellbeing, and opportunity) show the relative performance of nations (Social
40 Progress Imperative, 2018).
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Meanwhile, corruption as a measure of the lack of modernisation of governance is assessed using **Corruption Perceptions Index and irregular payments and bribes**. These indicators were previously used by Williams (2013, 2014, 2015) to explain the cross-national variations in the scale of informal employment:

- *Corruption Perceptions Index*. Transparency International's Corruption Perceptions Index (CPI) ranks countries and territories based on how corrupt their public sector is perceived to be. A country or territory's score indicates the perceived level of public sector corruption on a scale of 0 - 100, where 0 means that a country is perceived as highly corrupt and 100 means it is perceived as very clean (Transparency International, 2017).
- *Irregular payments and bribes*. Average score across the five components of the following WE Forum Executive Opinion Survey question: In your country, how common is it for firms to make undocumented extra payments or bribes connected with: (a) imports and exports; (b) public utilities; (c) annual tax payments; (d) awarding of public contracts and licenses; (e) obtaining favourable judicial decisions? The indicator ranges from 1 (very common) to 7 (never occurs) (World Economic Forum, 2017).

To test the tenet of neo-liberal theory that informal employment is more prevalent when there are high taxes and state over-interference meanwhile, **indicators previously used by Eurofound (2013), the European Commission (2013), Vanderseyen et al. (2013), Williams (2015) and Williams and Horodnic (2015, 2017)** when assessing the assumptions of neo-liberal theory are used, namely:

- *Taxes on goods and services as a percentage of revenue*, which includes general sales and turnover or value added taxes, selective excises on goods, selective taxes on services, taxes on the use of goods or property, taxes on extraction and production of minerals, and profits of fiscal monopolies (World Bank, 2016a).
- *Taxes on revenue (excluding grants) as a percentage of GDP*. Revenue is cash receipts from taxes, social contributions, and other revenues such as fines, fees, rent, and income from property or sales. Grants are also considered as revenue but are excluded here (World Bank, 2016b).
- *Tax revenue as a percentage of GDP*. Tax revenue refers to compulsory transfers to the central government for public purposes. Certain compulsory transfers such as fines, penalties, and most social security contributions are excluded. Refunds and corrections of erroneously collected tax revenue are treated as negative revenue (World Bank, 2016c).

- *Problematic factors for doing business: Tax rates (%)*. The most problematic factor for doing business: Tax rates (% of respondents, Executive Opinion Survey) (World Economic Forum, 2017).
- *Total tax rate (% of profits)*. The total tax rate measures the amount of taxes and mandatory contributions payable by a business in the second year of operation, expressed as a share of commercial profits. The total amount of taxes is the sum of five different types of taxes and contributions: profit or corporate income tax, social contributions and labour taxes paid by the employer, property taxes, turnover taxes, and other small taxes (World Bank, 2017b).

Meanwhile, and to test political economy theory that informal employment is associated with the level of poverty (Williams, 2014; Williams and Horodnic, 2017), three indicators are analysed:

- *Poverty gap at national poverty lines (%)*. Poverty gap at national poverty lines is the mean shortfall from the poverty lines (counting the nonpoor as having zero shortfall) as a percentage of the poverty lines. This measure reflects the depth of poverty as well as its incidence (World Bank, 2015).
- *Poverty gap at \$1.90 a day*. Poverty gap at \$1.90 a day (2011 PPP) is the mean shortfall in income or consumption from the poverty line \$1.90 a day (counting the nonpoor as having zero shortfall), expressed as a percentage of the poverty line. This measure reflects the depth of poverty as well as its incidence (World Bank, 2016d).
- *GINI index*. Gini index measures the extent to which the distribution of income (or, in some cases, consumption expenditure) among individuals or households within an economy deviates from a perfectly equal distribution. Thus a Gini index of 0 represents perfect equality, while an index of 100 implies perfect inequality (World Bank, 2016e).

To evaluate both the neo-liberal theory of state over-interference and political theory of state under-intervention, meanwhile, indicators previously used (Eurofound, 2013; European Commission, 2013; Vanderseypen *et al.*, 2013; Williams and Horodnic, 2017) are employed as well as some similar additional indicators, namely:

- *Social contributions (% of revenue)*. Social contributions include social security contributions by employees, employers, and self-employed individuals, and other contributions whose source cannot be determined. They also include actual or imputed contributions to social insurance schemes operated by governments (World Bank, 2016f).
- *Expense of government (% of GDP)*. This is a measure of the size of government and therefore a loose proxy of the degree of intervention. The expense of government is the

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3 level of cash payments for the operating activities of the government in providing goods
4 and services. It includes compensation of employees (such as wages and salaries), interest
5 and subsidies, grants, social benefits, and other expenses such as rent and dividends (World
6 Bank, 2016g).
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10 To evaluate the relationship between cross-country variations in the prevalence of informal
11 employment and the economic and social conditions that each theory contends are associated,
12 we conduct bivariate regression analyses. Here, Spearman's rank correlation coefficient (r_s) is
13 used due to the non-parametric nature of the data to discover whether there are statistically
14 significant strong and very strong associations ($r_s > 0.7$).
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20 **Findings: evaluating the competing theories**

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23 Table 2 reveals both the prevalence of informal employment, and level of informal employment
24 in informal enterprises (i.e., the intensity of informality) in 112 countries. This reveals that those
25 engaged in informal employment as their main job is not a minor segment of the workforce and
26 of limited importance. In 61 of the 112 nations (54 per cent of the countries), over half of the
27 workforce is in informal employment.
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33 TABLE 2 ABOUT HERE

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37 However, marked variations exist across countries. The proportion of the workforce whose
38 main job is informal employment ranges from 94.6 per cent in Burkina Faso to 1.2 per cent in
39 Luxembourg, while the share of informal workers in the informal sector ranges from 92% in
40 Chad to 0.9% in Luxembourg. In Benin, for instance, the proportion of the workforce whose
41 main job is informal employment is 94.5 per cent, and 90.6 per cent are in informal jobs in
42 informal enterprises. The Benin economy, therefore, is a predominantly informal economy.
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48 To explain the cross-country variations in the prevalence and intensity of informal
49 employment, it is first necessary to test the validity of modernisation theory. Using Spearman's
50 rank correlation coefficient due to the nonparametric nature of the data, there is a very strong
51 significant relationship between the level of informal employment in a country and its GNI per
52 capita ($r_s = -.897^{***}$). There is also a statistically significant association within a 99% confidence
53 interval between the share of all employment in the informal economy which is informal
54 employment in informal enterprises and GNI per capita ($r_s = -.895^{***}$). There is also a very
55 strong significant association between GDP per capita and the prevalence of informal
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3 employment ($r_s = -.890^{***}$) as well as between the GDP per capita and the share of all
4 employment in the informal economy which is informal employment in informal enterprises
5 ($r_s = -.889^{***}$). The share of the workforce in informal employment is greater in less developed
6 economies with lower levels of GNI per capita and GDP per capita. This reinforces previous
7 findings (ILO, 2012; Yamada, 1996). Nevertheless, the direction of the correlation in terms of
8 any cause-effect relationship cannot be established. This, in consequence, is a limitation of both
9 the current as well as previous studies.
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17 TABLE 3 ABOUT HERE
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20 To test modernisation theory using alternative indicators of ‘development’ that examine a wider
21 range of variables other than simply economic productivity, the finding is that there is a
22 statistically significant relationship within a 99% confidence interval between cross-national
23 variations in the level of informal employment and cross-national variations in not only
24 household consumption expenditure per capita ($r_s = -.900^{***}$) but also the Human Development
25 Index ($r_s = -.925^{***}$). As Figure 1 reveals, there is also a significant relationship between the
26 level of informal employment in a country and the Social Progress Index ($r_s = -.929^{***}$). The
27 share of the workforce in informal employment is higher in countries where the Social Progress
28 Index is lower. Similar results are obtained when analysing the share of all employment in the
29 informal economy which is informal employment in informal enterprises. Informal
30 employment therefore, by a range of indicators of ‘development’, is larger in less developed
31 economies, thus confirming *H1a*.
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42 FIGURE 1 ABOUT HERE
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46 Turning to the second tenet of modernisation theory that informal employment is higher in
47 countries where there is a lack of modernisation of governance, countries with higher perceived
48 levels of public sector corruption (low levels of Corruption Perception Index) have a higher
49 prevalence and intensity of informal employment ($r_s = -.747^{***}$; $r_s = -.744^{***}$). So too is there
50 a significant association between the level and intensity of informal employment and irregular
51 payments and bribes ($r_s = -.743^{***}$; $r_s = -.726^{***}$). The prevalence and intensity of informal
52 employment is therefore larger in countries with higher levels of public sector corruption,
53 confirming *H1b*.
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3 To evaluate the tenet neo-liberal theory that informal employment is greater when taxes
4 are higher, several measures of taxation levels are here analysed. Beginning with the
5 relationship between the cross-national variations in the scale of informal employment and the
6 level of taxes on revenue (excluding grants) as a share of GDP, the inverse of the neo-liberal
7 suggestion is found. The scale and intensity of informal employment decreases as the level of
8 taxes on revenue as a proportion of GDP increases and this is a statistically significant
9 correlation ($r_s = -.647^{***}$; $r_s = -.635^{***}$).

15 This is similarly the case when examining the level of tax revenue as a proportion of
16 GDP and the level and intensity of informal employment ($r_s = -.446^{***}$; $r_s = -.443^{***}$). The
17 levels of informal employment are significantly lower in countries where revenue is a higher
18 proportion of GDP. Similarly, the same statistically significant relationship exists between the
19 level of informal employment and employment in the informal sector and tax rates as a
20 problematic factor when doing business ($r_s = -.275^{***}$; $r_s = -.243^{**}$). Again, the scale and
21 intensity of informal employment is significantly lower in countries where tax rates are often
22 listed among the problematic factors when doing business. No statistical significant association
23 was found between the share of informal employment and the level of taxes on goods and
24 services (as a percentage of revenue) or the total tax rate (as a percentage of profits).

32 Therefore, insufficient evidence exists to validate the neo-liberal tenet that higher tax
33 rates (*H2a*) result in a greater prevalence and intensity of informal employment. Instead, the
34 inverse is the case; higher tax levels are correlated with a lower prevalence and intensity of
35 informal employment, presumably because greater state revenue is provided for social transfers
36 so that citizens can receive social protection.

41 To test the neo-liberal tenet that state interference leads to higher levels of informal
42 employment (*H2b*), and the contrary political economy tenet that the scale of informal
43 employment reduces with greater state intervention (*H3*), Table 3 reveals that when the level
44 of social contributions as a percentage of revenue increases, there is a statistically significant
45 decline in both the scale of informal employment ($r_s = -.711^{***}$) and intensity of informal
46 employment ($r_s = -.694^{***}$). There is also a steep decline in the scale and intensity of informal
47 employment as the expense of government as a share of GDP increases ($r_s = -.688^{***}$; $r_s = -$
48 $.653^{***}$). Bigger government therefore leads to a decline, rather than increase, in the prevalence
49 and intensity of informal employment. The neo-liberal tenet that state interference leads to
50 greater informal employment (*H2b*) is therefore refuted and instead, support found for the
51 political economy tenet that such employment is associated with too little state intervention
52 (*H3*).

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3 The political economy tenet that cross-national variations in the scale and intensity of
4 informal employment are associated with the level of poverty is also supported. Table 3 (and
5 graphically displayed in Figure 4) reveals a statistically significant relationship between cross-
6 national variations in the size of the poverty gap, expressed as a percentage of the poverty line
7 of \$1.90 per day in purchasing power parities, and cross-national variations in the scale and
8 intensity of informal employment ($r_s = .791^{***}$; $r_s = .764^{***}$). Similar results are obtained when
9 considering the poverty gap at national poverty lines ($r_s = .416^{***}$; $r_s = .416^{***}$). The greater
10 the poverty, the higher is the scale and intensity of informal employment.
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19 FIGURE 4 ABOUT HERE
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22 There is also a statistically significant relationship between Gini Index and informal
23 employment. The higher the income inequalities, the higher is the scale of informal employment
24 ($r_s = .503^{***}$) and level of informal employment in the informal sector ($r_s = .495^{***}$).
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29 Discussion and Conclusions 30

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32 To test three theories that variously explain that higher levels of informal employment are
33 correlated with economic under-development and corruption (modernisation theory), state
34 over-interference (neo-liberal theory) and inadequate state intervention to protect workers from
35 poverty (political economy theory), harmonised data from 112 developed and developing
36 economies comprising 90 per cent of the global workforce has been analysed. In 61 of the 112
37 nations (54%), the main job of over half of the workforce is informal employment.
38 Nevertheless, marked cross-national variations exist.
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44 Evaluating the competing theories, the finding is that although modernisation theory
45 tentatively appears to be valid that informal employment is associated with “under-
46 development” and corruption, neo-liberal theory is not validated. Instead, there is tentative
47 support for the political economy theory. The outcome is a call for a synthesis of the tenets of
48 modernisation and political economy theory. This finding in relation to 112 developed and
49 developing economies across the world representing 90 per cent of the global workforce is
50 similar to the earlier findings in relation to the European Union (Williams, 2013) and 41 less
51 developed economies (Williams, 2015). The tentative intimation is that across the world, lower
52 levels of informal employment are associated with development and state intervention in the
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3 form of higher tax rates and social transfers to protect workers from poverty. This “neo-
4 modernisation” theory appears to apply across the world.
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7 This relationship between informal employment and under-development, corruption,
8 lower tax rates and inadequate state protection to protect workers from poverty moreover, has
9 practical policy implications for governments. Besides enforcement authorities finding more
10 effective ways of detecting informal employment and transforming it into formal employment
11 (Eurofound, 2013; Feld and Larsen, 2012; OECD, 2012), this paper reveals that addressing
12 broader economic and social conditions associated with the overarching modernisation of
13 economies, state bureaucracies and social protection are also important. In other words, it shows
14 that tackling informal employment cannot be treated separately from broader economic and
15 social policies.
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19 In sum, this paper has revealed that a large proportion of the workforce across these 112
20 countries are in informal employment as their main job and that the cross-country variations in
21 the proportion in informal employment are associated with the level of development,
22 corruption, tax rates, the size of government, level of social contributions and poverty rates. If
23 this is now tested using more refined multivariate regression analysis to evaluate whether the
24 same relationships hold, and data is collected to allow this to occur, then one intention of this
25 paper will have been fulfilled. If this paper also encourages recognition of the importance of
26 addressing wider economic and social conditions when tackling informal employment, then it
27 will have achieved its wider intention.
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Employee Relations

Table 1. Conceptualisations of the informal sphere by the unit of observation

Economic units	Informal jobs	Formal jobs
Informal economic units	A	B
Formal economic units	C	D

Source: ILO (2012)

Employee Relations

Table 2. Share of informal employment in total employment, by country (latest available year)

Country	Code	Share of informal employment in total employment				Region ¹⁾
		Total		In the informal sector		
		(%)	(Rank)	(%)	(Rank)	
Burkina Faso	BF	94.6	1	65.5	34	A
Benin	BJ	94.5	2	90.6	4	A
Nepal	NP	94.3	3	90.7	3	D
Rwanda	RW	94.3	4	90.9	2	A
Angola	AO	94.1	5	77.1	23	A
Chad	TD	94.0	6	92.0	1	A
Uganda	UG	93.7	7	87.6	7	A
Lao People's Democratic Republic	LA	93.6	8	86.7	8	D
Madagascar	MG	93.6	9	83.6	13	A
Cambodia	KH	93.1	10	77.5	21	D
Nigeria	NG	92.9	11	80.4	17	A
Côte d'Ivoire	CI	92.8	12	86.0	9	A
Togo	TG	92.8	13	80.6	16	A
Mali	ML	92.7	14	74.2	24	A
Sierra Leone	SL	92.5	15	89.8	5	A
Congo, Democratic Republic of the	CD	91.9	16	88.2	6	A
Niger	NE	91.3	17	77.3	22	A
Senegal	SN	91.2	18	70.9	28	A
Cameroon	CM	90.9	19	83.7	12	A
Tanzania, United Republic of	TZ	90.6	20	83.5	14	A
Ghana	GH	90.1	21	84.8	10	A
Comoros	KM	89.2	22	84.6	11	A
Bangladesh	BD	89.0	23	48.9	50	D
India	IN	88.2	24	80.9	15	D
Zambia	ZM	87.9	25	79.0	19	A
Liberia	LR	86.8	26	79.1	18	A
Myanmar	MM	85.7	27	71.5	26	D
Indonesia	ID	85.6	28	67.5	32	D
Congo	CG	85.3	29	56.9	42	A
Bolivia, Plurinational State of	BO	83.1	30	68.7	30	B
Malawi	MW	83.0	31	74.1	25	A
Pakistan	PK	82.4	32	77.6	20	D
Honduras	HN	79.9	33	70.0	29	B
Morocco	MA	79.9	34	58.7	40	A
Guatemala	GT	79.7	35	63.3	35	B
Yemen	YE	77.8	36	68.5	31	C
Nicaragua	NI	77.4	37	71.5	27	B
Gambia	GM	76.7	38	62.5	36	A
Viet Nam	VN	76.2	39	61.0	37	D
Tajikistan	TJ	74.8	40	54.4	46	E
Timor-Leste	TL	71.8	41	56.9	43	D
Paraguay	PY	70.6	42	46.0	54	B
Sri Lanka	LK	70.4	43	60.6	38	D
Syrian Arab Republic	SY	70.1	44	66.0	33	C
El Salvador	SV	69.6	45	53.9	47	B
Peru	PE	69.2	46	55.5	45	B
Namibia	NA	67.0	47	46.8	52	A
Iraq	IQ	66.9	48	59.7	39	C
Botswana	BW	65.6	49	52.1	49	A
Occupied Palestinian Territory	PS	64.3	50	31.2	66	C
Egypt	EG	63.3	51	58.5	41	A
Albania	AL	61.0	52	29.1	69	E
Colombia	CO	60.6	53	55.9	44	B
Ecuador	EC	59.0	54	46.4	53	B
Tunisia	TN	58.8	55	53.3	48	A
Dominican Republic	DO	56.3	56	37.4	58	B
China	CN	54.4	57	48.4	51	D

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3	Mongolia	MN	53.5	58	45.7	55	D
4	Mexico	MX	53.4	59	29.1	70	B
5	Panama	PA	52.3	60	34.3	60	B
6	Armenia	AM	52.1	61	39.2	57	E
7	Kyrgyz Republic	KG	48.6	62	37.2	59	E
8	Argentina	AR	47.2	63	32.8	61	B
9	Cabo Verde	CV	46.5	64	31.9	65	A
10	Brazil	BR	46.0	65	30.3	67	B
11	Jordan	JO	44.9	66	43.9	56	C
12	Chile	CL	40.5	67	32.2	62	B
13	Venezuela, Bolivarian Republic of	VE	39.7	68	26.3	73	B
14	Costa Rica	CR	39.1	69	27.4	71	B
15	Poland	PL	38.0	70	20.1	79	E
16	Russian Federation	RU	35.9	71	24.4	75	E
17	Samoa	WS	35.7	72	21.7	78	D
18	Turkey	TR	34.8	73	32.0	64	E
19	South Africa	ZA	34.0	74	21.8	77	A
20	Greece	GR	32.8	75	32.2	63	E
21	Brunei Darussalam	BN	31.9	76	4.0	110	D
22	Korea, Republic of	KR	31.5	77	26.1	74	D
23	Bosnia and Herzegovina	BA	30.1	78	30.0	68	E
24	Moldova, Republic of	MD	28.9	79	21.9	76	E
25	Romania	RO	28.9	80	27.4	72	E
26	Spain	ES	27.3	81	17.3	81	E
27	Uruguay	UY	24.5	82	19.6	80	B
28	Serbia	RS	22.1	83	6.4	102	E
29	Italy	IT	19.0	84	16.0	84	E
30	Japan	JP	18.7	85	14.3	87	D
31	United States	US	18.6	86	16.6	82	B
32	Slovakia	SK	16.7	87	16.4	83	E
33	Bulgaria	BG	15.9	88	15.0	85	E
34	Cyprus	CY	15.1	89	15.0	86	E
35	United Kingdom	GB	13.6	90	13.5	88	E
36	Belgium	BE	13.5	91	10.8	94	E
37	Ireland	IE	13.5	92	11.8	91	E
38	Latvia	LV	13.2	93	11.2	93	E
39	Croatia	HR	13.0	94	12.8	89	E
40	Lithuania	LT	12.6	95	8.2	99	E
41	Hungary	HU	12.2	96	11.8	92	E
42	Portugal	PT	12.1	97	11.9	90	E
43	Denmark	DK	11.2	98	4.1	109	E
44	Switzerland	CH	10.4	99	4.2	108	E
45	Germany	DE	10.2	100	9.7	95	E
46	Austria	AT	10.0	101	8.8	96	E
47	France	FR	9.8	102	5.4	104	E
48	Netherlands	NL	9.4	103	8.4	98	E
49	Czech Republic	CZ	9.2	104	8.6	97	E
50	Sweden	SE	8.2	105	2.6	111	E
51	Malta	MT	8.1	106	7.9	100	E
52	Norway	NO	7.4	107	7.1	101	E
53	Estonia	EE	6.9	108	5.4	105	E
54	Finland	FI	6.3	109	6.2	103	E
55	Slovenia	SI	5.0	110	4.8	106	E
56	Iceland	IS	4.9	111	4.6	107	E
57	Luxembourg	LU	1.2	112	0.9	112	E

Note: ¹⁾ A: Africa; B: Americas; C: Arab States; D: Asia and the Pacific; E: Europe and Central Asia.

Source: derived from ILO (2018) harmonized data on the share of informal employment in total employment.

Table 3. Economic and social characteristics associated with higher levels of informal employment, by theoretical perspective (latest available year)

Theoretical perspective/ Indicator	No. of countries	Share of informal employment in total employment	
		Total	In the informal sector
<i>Modernisation Explanation</i>			
Level of 'development'			
GDP per capita ^{b)}	110	-0.890***	-0.889***
GNI per capita ^{e)}	110	-0.897***	-0.895***
Household final consumption per capita ^{e)}	109	-0.900***	-0.890***
Human Development Index ^{d)}	111	-0.925***	-0.915***
Social Progress Index ^{d)}	100	-0.929***	-0.913***
Governance/ Corruption			
Corruption Perceptions Index ^{d)}	110	-0.747***	-0.744***
Irregular payments and bribes ^{d)}	107	-0.743***	-0.726***
<i>Neo-Liberal Thesis</i>			
High taxes			
Taxes on goods and services (% of revenue) ^{c)}	99	0.059	0.027
Taxes on revenue (excl. grants) (% of GDP) ^{c)}	101	-0.647***	-0.635***
Tax revenue (% of GDP) ^{c)}	100	-0.446***	-0.443***
Problematic factors ^{b)} : Tax rates (%) ^{d)}	100	-0.275***	-0.243**
Total tax rate (% of profits) ^{b)}	100	0.043	0.079
<i>Political Economy Thesis</i>			
Level of poverty			
Poverty gap at national poverty lines (%) ^{a)}	56	0.416***	0.416***
Poverty gap at \$1.90 a day ^{c)}	107	0.791***	0.764***
GINI index ^{c)}	107	0.503***	0.495***
<i>Neo-Liberal and Political Economy Explanations</i>			
State interference			
Social contributions (% of revenue) ^{c)}	97	-0.711***	-0.694***
Expense of government (% of GDP) ^{c)}	100	-0.688***	-0.653***

Strength of the Spearman's correlation coefficient:

■ .00-.19 | very weak ■ .20-.39 | weak ■ .40-.59 | moderate ■ .60-.79 | strong ■ .80-1.0 | very strong

Significant at *** p<0.01, ** p<0.05, * p<0.1.

Note: ^{a)} 2015 data or latest available | ^{b)} 2016 data | ^{c)} 2016 data or latest available | ^{d)} 2017 data | ^{e)} 2017 data or latest available | ^{f)} 2018 data | ^{g)} latest available year data | ^{h)} Problematic factors for doing business.

Source: own calculations based on data from ILO (2018) (harmonized data on the share of informal employment in total employment) and Social Progress Imperative (2018), Transparency International (2017), United Nations (2017), World Bank (2017a,b,c,d, 2016a,b,c,d,e,f,g, 2015), World Economic Forum (2017), International Monetary Fund (2016).

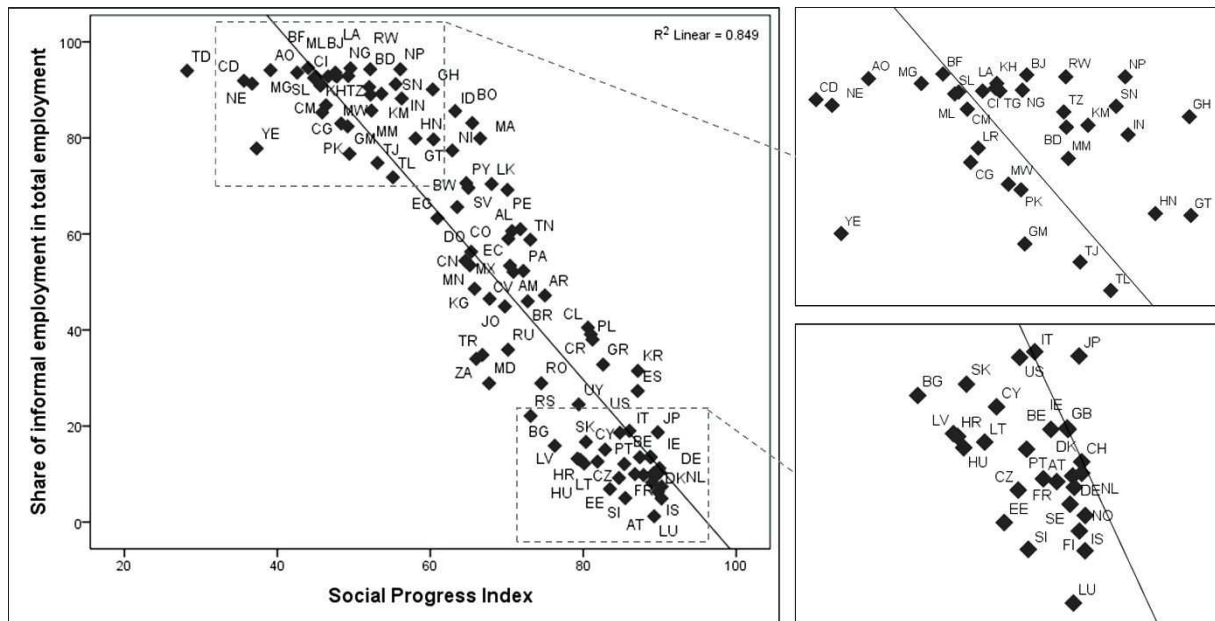
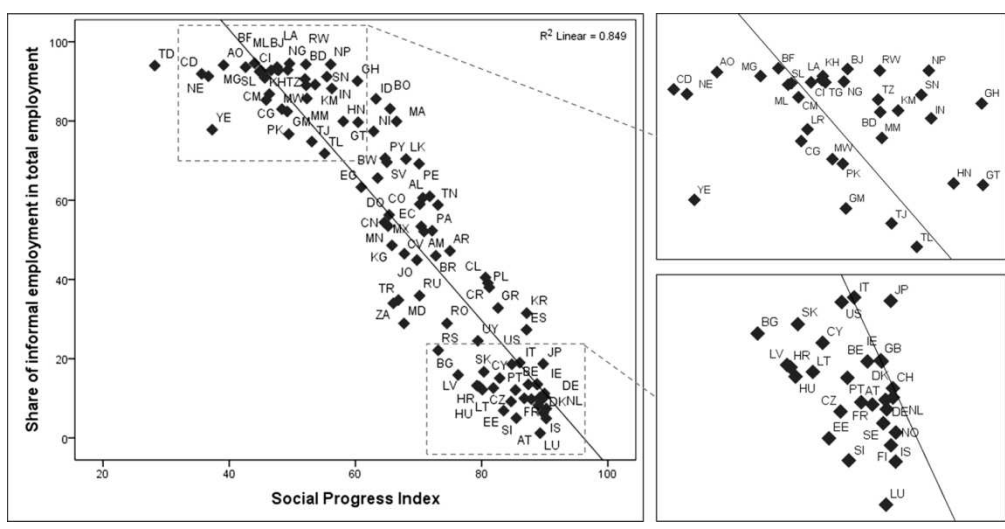


Figure 1. Relationship between the share of informal employment in total employment and Social Progress Index (latest available year)

Source: own calculations based on data from ILO (2018) for harmonized data on the share of informal employment in total employment and Social Progress Imperative (2018) for Social Progress Index.

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