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Identification of informality through labour force surveys

Main findings from the ILO pilot studies
in Uganda and Peru

Antonio R. Discenza, Michael Frosch, Kieran Walsh
Statistical Standards and Methods Unit

December 2023

STATISTICS
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of Statistics



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Acronyms

CFW	Contributing family workers
DC	Dependent contractors
EMP	Employed
ICLS	International Conference of Labour Statisticians
ILO	International Labour Organization
ILOSTAT	ILO's statistical database
ICSE-18	International Classification of Status in Employment 2018
LFS	Labour Force Survey
TIN	Tax identification Number
RUC	Registro Único de Contribuyente

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▶ Key points

- ▶ During 2021 and 2022 the ILO Department of Statistics engaged in extensive testing of labour force survey questions in Uganda and Peru towards the identification of questionnaire content to measure various phenomena that can deepen our understanding of informality in the world of work, particularly from a gender perspective. Among the topics covered in these tests was the identification of informal jobs and enterprises based on the new resolution concerning statistics on the informal economy adopted at the 21st ICLS in 2023.
- ▶ The tests undertaken included both qualitative and quantitative testing methods, and provided an extensive range of evidence upon which conclusions could be reached regarding the efficacy of measurement approaches.
- ▶ One of the central points of testing was to assess the questions used to identify informal employment and the informal sector based on the new resolution concerning statistics on the informal economy, or in other terms the ways in which it can be determined that an economic unit or a job are formally recognized and effectively covered by formal arrangements, or not. An overarching conclusion of the testing is that the questions tested, subject to correct integration in a survey, were suitable for use and align with the recently adopted statistical standards on the informal economy. Careful wording, translation, and national adaptation (for example to include the name of relevant national registration or social security systems) are required to ensure they function as intended.
- ▶ Questions on registration on bookkeeping are essential inclusions in a labour force surveys to identify the informal sector, but also to identify informal employment among independent workers. The testing of these questions supported a conclusion that the questions functioned effectively, particularly for independent workers who are directly interviewed. A dedicated test of proxy effects showed that the impact of proxy reporting was an increase in “don’t know” responses to these questions with some false positives and negatives arising, the extent of which varied between Uganda and Peru.
- ▶ The impact was much larger for dependent workers than independent workers – which is an important finding as the questions are particularly important for independent workers as they define both the sector and the formal or informal status of their job.
- ▶ On balance this gives rise to a general recommendation to find ways to manage proxy response in the LFS to minimize the possibility of misclassifications. This finding was shown to be relevant for a range of the questions used to identify informality such as payment of social security contributions etc. Strategies to manage proxy response can include multiple revisits with appointment etc. – however, it is recognized that proxy

interviewing remains an important strategy to make the most efficient use of available resources.

- ▶ Some consideration can also be given as to whether, at national level, the question on bookkeeping is required for dependent workers, with evidence from Peru indicating they had minimal impact on the identification of the formal sector for that group – however this was greater in Uganda with differential impacts between women and men suggesting in some countries they will remain essential. As such the questions will remain within ILO model questionnaires for all types of workers in the private sector but with the recognition that in some countries an assessment could indicate they are not required. This conclusion does not alter the conceptual relevance of the criterion, rather than in practice they may not actually alter results, but any decision to exclude it should be based on evidence.
- ▶ Questions to identify formality and informality for dependent contractors were also tested, including a question on registration for tax and profits, as proposed in the standards. While recognizing that this can be a sensitive topic for respondents the question will be included in ILO model questionnaires to promote the identification of informality for this group.
- ▶ The question on job related social insurance payments among dependent contractors, contributing family workers and employees was generally found to work well subject to national adaptation to mention specific national systems of relevance. This is a key criterion that should be covered in all LFS for those groups of workers within the country that have the possibility to register and contribute to social insurance.
- ▶ Alternative wordings were tested for questions on paid annual and paid sick leave. These in general found that existing common wordings of these questions appear suitable for use and will continue within ILO model questionnaires.
- ▶ Another important conclusion is that, particularly recognizing the impact of proxy effect, it is important to consider how to treat “don’t know” responses and also how to combine criteria to ensure appropriate classification. For example, the question on access to paid sick leave should not be used on its own to identify formality, rather it needs to be combined with the response to the question on paid annual leave as informal employees may report having access to one of the criteria but not generally both. Conclusions like this will be reflected in ILO guidance on variable and indicator derivation to ensure consistency and harmonization.

▶ 1 Background

Gender equality is at the core of the ILO Decent Work mandate and is fundamental to achieving the global goals for sustainable development. Data and statistics support quantification of gender concerns, taking action and monitoring impact. Women's economic empowerment and the world of work is high among the priorities, and with informal jobs accounting for the bulk of women's employment globally, engendering informality statistics is crucial.

At the 21st ICLS in 2023 the new resolution concerning statistics on the informal economy was adopted, replacing the previous statistical standards on informality. This was in response to strong demand from the 20th International Conference of Labour Statisticians (ICLS) for standards that promote better measurement and understanding of informality across countries. National and international experts in labour statistics formed a working group in 2018 coordinated by the ILO Department of Statistics to complete the work and provide recommendations to the 21st ICLS in October 2023 as input to adopting the new set of standards for measuring the informal economy.

Cutting across the work to develop statistical standards is the need to engender statistics. The aim being that data producers can collect and produce statistics without gender bias, they produce statistics that are relevant to understanding gaps in gender equality, and they systematically analyse and disseminate data that are both sex-disaggregated and gender-responsive. Engendering statistics is an ongoing priority for the ILO Department of Statistics, a priority shared by its partners, including the Bill & Melinda Gates Foundation, UN Women, and the Women in Informal Employment: Globalizing and Organizing (WIEGO).

Undertaking labour force pilot studies and tests in parallel to the revision of statistical standards brings major benefits. Such tests create the opportunity to develop and try different measurement approaches, reflecting the evolving proposals from working group discussions. They also allow reconsideration of those proposals in the light of evidence on the measurement challenges they would create. ILO has accumulated experience in such testing over recent years, particularly through a comprehensive round of pilot studies in 2015-2017 to inform guidance and tools on recommended labour force survey (LFS) approaches to implement the 19th ICLS, followed by a joint-pilot study in Sri Lanka in partnership with the World Bank to test the application of the 19th ICLS standards in different types of household surveys². The

² For findings and other projects see: <https://ilostat.ilo.org/about/lfs-research-and-development/>

different rounds of testing demonstrated the significant value of dedicated experimental tests as the platform to generate guidance and tools to support measurement.

Given the above, the ILO initiated the Engendering Informality Statistics project at the end of 2020 (the project) with generous support from the Bill & Melinda Gates Foundation. The most substantial activity of the project was to test statistical concepts and household survey questionnaires to generate evidence on what works when collecting data, and to test questionnaire content on a range of topics that can improve our understanding of working conditions, and gender gaps in particular. Testing took place in two countries (Uganda and Peru) through qualitative (mainly cognitive) testing in 2021 and quantitative testing in 2022 with fieldwork ending in December 2022. An additional feature of the testing was a dedicated test of proxy effects which took place in late 2022 as part of the last round of quantitative testing.

Following initial research and consultations the following topics were selected as a focus for the studies:

- i. Identification of informality in line with emerging proposals from the working group
- ii. Identification of dependent contractors (based on ICSE-18 as established in Resolution I of the 20th ICLS)
- iii. Identification of contributing family workers (ICSE-18) plus measurement of their motivation for working in a family business
- iv. Motivation of independent workers (as defined by ICSE-18) for operating a business
- v. Decision making in family businesses – this is related to ICSE-18 but also relevant to the understanding of agency
- vi. Earnings of “independent workers” as defined by ICSE-18
- vii. Earnings of “dependent workers” as defined by ICSE-18
- viii. Asset ownership in business (types and valuation)
- ix. ICT use in businesses (including digital platforms)
- x. Access to finance for businesses (only tested in the quantitative test in Peru)

The findings from the tests will be incrementally published on a topic-by-topic basis. Given their importance for the application of the latest standards the first two topics listed above will be published first. In addition to the findings, the conclusions on questionnaire content will lead to updates to the published model ILO questionnaires and additional modules which will similarly be published incrementally³.

³ See: <https://ilostat ilo.org/resources/lfs-resources/>

An important objective of the testing was to identify which questionnaire content is suitable to use, but also, by extension to establish if it is possible to cover the topics listed above in a labour force survey, considering burden and the quality of the data generated. The findings will comment on both elements (general suitability and conclusions on specific approaches) where relevant.

A separate report will be published describing the design and implementation of the studies. However, a few key points are worth noting here:

- The samples for the quantitative testing were purposive and not representative. More specifically, it was decided to design the samples to cover areas of the countries where a range of informal employment activities, would be found – covering both agricultural and non-agricultural employment. Thus, the findings cannot be considered to be indicative of the results that would be generated if the questionnaires were used at scale in a labour force or other household survey.
- Split sample designs were in general used – in other words different questionnaires tested on similar samples of households to enable comparisons of outcomes. During the quantitative stage only about 10 per cent of the questionnaire content differed between the two versions tested. Where relevant, the findings will emphasise the situations where questions differed and the conclusions we can draw about which approach appeared to work better. In other cases, where content did not differ between versions of the questionnaire, the results are pooled and commented on more generally.
- In addition to the data generated, an important part of the process was qualitative feedback received from those who implemented the testing, in particular the interviewers. In addition to what can be judged from the results generated, this feedback highlighted cases where questions were found to be sensitive in the field, such as questions on asset ownership in businesses etc. Again, feedback received in this way will be highlighted where considered relevant.

The topic of this report is the identification of informality in line with the resolution adopted at the 21st ICLS⁴. Key findings and conclusions are presented from the different stages of testing, along with their implications for questionnaire design and content.

⁴ See: https://www.ilo.org/wcmsp5/groups/public/---dgreports/---stat/documents/normativeinstrument/wcms_901516.pdf

► 2 Identification of informality

Several criteria are used to identify informality including business registration, business incorporation, recordkeeping, being registered for tax, and access to job-related social insurance, paid annual leave and paid sick leave. These are used to classify economic units into one of three mutually exclusive sectors of the economy – formal sector, informal sector, or household own-use and community sector – and to classify all jobs for people in employment as informal or formal.

The new standards of statistics on the informal economy adopted at the 21st ICLS explain in detail how these criteria are applied depending on the status in employment category as defined by ICSE-18. **Figure 1** illustrates how informal and formal jobs can be identified in enterprises classified to each sector of the economy.

Figure 1. Informal and formal jobs by status in employment and sector

Sector of the economic unit for which the work is carried out	Independent workers ¹			Dependent workers					
	Owner-operators of corporations ²	Independent workers in household (unincorporated) market enterprises ³		Dependent contractors ⁴		Employees		Contributing family workers	
		Formal	Informal	Formal	Informal	Formal	Informal	Formal	Informal
Formal sector				1		2		3	
Informal sector		4		5		6		7	
Household own-use production and community sector						8			

Note: Cells shaded in dark blue refer to jobs, which, by definition, do not exist in economic units located in the specific sector. Cells shaded in light blue refer to formal jobs. Informal employment consists of the informal jobs in cells 1–8.

¹ Including employers and independent workers without employees (before ICSE-18 labelled Own-account workers).

² Including the ICSE-18-A categories 11 and 21.

³ Including the ICSE-18-A categories 12 and 22.

⁴ The sector of dependent contractors does not reflect the sector of the economic unit on which they depend but their formal status in relation to the legal administrative framework of the country.

⁵ The existence of formal jobs among contributing family workers carrying out work for an economic unit in the formal sector depends on the national context (see paragraphs 89–91).

Lighter shaded cells indicate where formal jobs can exist. Informal employment comprises all informal jobs represented by those cells that are not shaded. The darker shaded cells refer to situations that cannot, by definition, exist. For example, an independent worker with an

unincorporated household market enterprise that is formal, can only, by definition, have a formal job thus the cell corresponding to informal jobs for independent workers in the formal sector is shaded dark blue. By contrast employees can have informal jobs in any of the three sectors, thus the entire column is unshaded, and so on.

The pilot studies allowed testing of a range of questions to operationalize the criteria recommended in the new conceptual framework for identifying informality, both for enterprises and jobs. The approach to testing and the findings are explained in detail below. Before exploring the underlying criteria, the overall prevalence of informality is shown in **Table 1**. (For more detailed tables including the distribution by status in employment see **Table A2. 1** in Annex 2). This helps to give a sense of the context of the areas where the studies took place, but also illustrate the data ultimately produced when the standards are applied.

Given the context of the countries in which the studies took place, and in particular the areas covered by the sample, a high prevalence of informality was expected. This was also the outcome, with informal employment rates of around 95 per cent of all employed respondents in Uganda, and 77 per cent in Peru. The higher informality rate in Uganda is also in line with expectations and available official estimates⁵.

Table 1. Number and distribution of formal vs informal main jobs

	Employed						Employed			
	Total		Formal job		Informal job		Formal job		Informal job	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
	Weighted counts						% Distribution			
Uganda Wave 1: Approach A	637	473	47	30	590	443	7.4	6.3	92.6	93.7
Uganda Wave 1: Approach B	591	441	28	17	563	424	4.8	3.9	95.2	96.1
Uganda Wave 2: Approach A	671	483	29	15	643	468	4.3	3.1	95.7	96.9
Uganda Wave 2: Approach B	618	489	43	31	575	458	7.0	6.3	93.0	93.7
Peru: Approach A	382	277	104	65	278	213	27.3	23.4	72.7	76.6
Peru: Approach B	359	303	101	68	258	235	28.2	22.5	71.8	77.5

The data above are also presented in **Table 2** below in the format used in the 21st ICLS resolution concerning statistics on the informal economy. This format illustrates how formal and informal jobs are distributed by status in employment category across the three sectors of the economy. As can be seen in **Table 2**, the high degree of informality in the two countries is further illustrated by the high prevalence of informal jobs in the informal sector, while the data also highlight some important gender gaps.

For example, in Uganda (Wave 1) the largest group of employees had informal jobs in the

⁵ The proportion of informal employment in total employment was estimated in Uganda to be 95.2 per cent in 2021 based on the national LFS and 63.8 per cent in 2022 in Peru, ILOSTAT.

informal sector (172 men and 91 women, or 53 per cent and 42 per cent of employees respectively). For male respondents, the second biggest category was informal jobs in the formal sector (65 men or 20 per cent), while for females it was employees with informal jobs working for households in the household own-use community sector as domestic workers (56 women or 26 per cent). A small proportion of both women and men working as employees had formal jobs which, by definition, are in the formal sector (54 men and 28 women, respectively 17 and 13 per cent) or household own use and community sector (1 woman, less than one per cent).

The pilots also included questions to identify the new ICSE-18 category of *dependent contractors*⁶, which has been integrated within the 21st ICLS resolution and the definition of informal employment. In Uganda there were 262 men and 121 women identified as dependent contractors (respectively 21 and 13 per cent of all male and female employed), all with informal jobs, and almost exclusively found in the informal sector (259 men and 119 women). In Peru, there were relatively more informal jobs in the formal sector than seen in Uganda - mainly as it was more common for respondents in Peru to report that they are registered in relation to tax on the profits made and therefore categorized in the formal sector, which reflects the general higher level of formality found in Peru. However, few of these dependent contractors had formal jobs as there were only 1 man and 1 woman holding a formal job out of the 25 dependent contractors classified in the formal sector (8 per cent), meaning that while formal registration was more common in Peru, formal arrangements and protection at the personal level (such as contributions to social protection schemes) were not.

One feature of the 21st ICLS resolution is that, in circumstances where appropriate conditions or policies exist, contributing family workers (those working without pay in family businesses) can potentially be identified as having formal jobs. The identification of this was tested through the addition of questions on contribution to social insurance schemes in questionnaires used for the pilot studies. Formal arrangements are not widely accessible to this group in both countries, which is reflected by the finding that none of the contributing family workers in Uganda or in Peru would end up being identified as having formal jobs in the formal sector. In Uganda, none met the criteria for holding a formal job or being in the formal sector, while in Peru there were 6 men and 5 women holding an informal job in the formal sector.

Different criteria underlie the definition of informality and are applied depending on ICSE-18 status in employment. The sections below explore the questions tested for each of the criteria

⁶ For the purpose of analyzing informality, in this paper, the default approach has been used i.e. self-declared employees that do not receive any wage or salary and that do not have a formal job, are defined as dependent contractors. For an assessment of the consequences and alternatives to this approach see (https://www.ilo.org/ilostat-files/Documents/ICSE-18_manual.pdf). However, the high degree of informality within the countries implies that the exact derivation of dependent contractors does not impact on the formal and informal status of this specific group.

and what the pilot studies revealed about their effectiveness to identify informality among women and men.

Table 2. Persons with informal and formal jobs by status in employment and sector, Uganda Wave 1, Uganda Wave 2 and Peru

Uganda Wave 1 (A + B)																		
Sector of the economic unit for which the work is carried out	Independent workers								Dependent workers									
	Owner-operators of corporations		Independent workers in household (unincorporated) market enterprises				Dependent contractors				Employees				Contributing family workers			
	Formal		Informal		Formal		Informal		Formal		Informal		Formal		Informal		Formal	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
Formal sector	8	2			13	15	3	2	0	0	65	41	54	28	0	0	0	0
Informal sector			572	490			259	119			172	91			50	68		
Household own-use production and community sector											32	56	0	1				
Uganda Wave 2 (A + B)																		
Sector of the economic unit for which the work is carried out	Independent workers								Dependent workers									
	Owner-operators of corporations		Independent workers in household (unincorporated) market enterprises				Dependent contractors				Employees				Contributing family workers			
	Formal		Informal		Formal		Informal		Formal		Informal		Formal		Informal		Formal	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
Formal sector	3	2			14	11	6	0			62	39	55	33	0	0	0	0
Informal sector			623	551			267	137			206	97			28	49		
Household own-use production and community sector											26	51	0	0				
Peru (A + B)																		
Sector of the economic unit for which the work is carried out	Independent workers								Dependent workers									
	Owner-operators of corporations		Independent workers in household (unincorporated) market enterprises				Dependent contractors				Employees				Contributing family workers			
	Formal		Informal		Formal		Informal		Formal		Informal		Formal		Informal		Formal	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
Formal sector	15	5			44	35	16	7	1	1	55	40	144	87	6	5	0	0
Informal sector			258	238			67	48	0	0	111	44			21	41		
Household own-use production and community sector											1	25	1	5				

2.1 Questions for defining informal sector and informal employment.

The criteria of business registration, incorporation and keeping accounts for tax purposes form part of defining the informal or formal status of an enterprise. If an enterprise is incorporated

or registered or keep accounts for tax purposes, then the enterprise can be considered a formal enterprise as it is embedded and recognized by the country's legal and administrative system. If this is not the case, then no formal recognition of the enterprise exists, and the enterprise would not be covered by the arrangements put in place by countries to regulate and protect the actions and functioning of the enterprise. This is the basis on which it is decided if an enterprise statistically is classified within the formal sector or the informal sector.

However, when it comes to the identification of informal employment the use of the criteria depends on the status in employment category.

For **independent workers** (employers or own-account workers) the formal (or informal) status of the enterprise determines the formal (or informal) status of their job. Independent workers that own and operate a formal enterprise therefore have a formal job, while those that own and operate an informal enterprise have an informal job.

For **dependent workers** (employees, contributing family workers and dependent contractors) the formal status of the economic unit is not necessarily sufficient to determine the formal status of the job. For employees and contributing family workers the formal or informal status of the employer or family business determines whether they work in the formal or informal sector. However, according to the 21st ICLS resolution, dependent workers will only have a formal job if they are categorized in the formal sector **and** they are effectively covered by formal arrangements such as access to social insurance, paid annual leave etc.

The linkage between the identification of the formal and informal sector and formal and informal employment means that the criteria of incorporation, business registration keeping accounts for tax purposes are particularly important for identifying informality among independent workers as it determines both the job and the sector.

The questionnaires developed for testing included questions on all three criteria. Initially these were based on existing ILO model questionnaires. A feature of those questionnaires that the sequence of questions began with the question on incorporation, followed by a question on registration, and then by a question on accounts. The cognitive testing highlighted the potential to improve this sequence by reversing the order of the first two questions. This was based on the finding that registration was more widely understood than incorporation, while also being more common. By reversing the order of the questions and only asking the question on incorporation to those who said that the business was registered the flow and burden could be improved. This new sequence was used in the quantitative pilot studies and generally found to work well. In the following sections the three criteria are discussed further.

2.1.1 Question on registration

Whether or not the enterprise is registered is a key criterion as it tends to have a direct relationship with the other criteria. Incorporated enterprises would by default be registered enterprises as the separate legal identity of the enterprise would need to be recognized through registration by the authorities. Enterprises that keep accounts for tax purposes would also typically be registered enterprises as this would be required to comply with national laws regarding the reporting of revenues, taxes and so on, thus creating a strong correlation between the availability of a complete set of accounts and registration.

The question on registration (see **Box A1. 1** in Annex 1) needs to be operationalized taking countries specific registration systems into account. Typically, the countries central business register would be used for operationalizing the criterion, however, in some countries different or additional registers might be of relevance. It can also be the case that registration systems may exist which should not be taken into account (e.g. a registration system which only registers the name of the enterprise without bringing any access to formal arrangements). In Uganda the question was asked in relation to whether the enterprise is registered with the *Uganda Registration Services Bureau (URSB)*. In Peru it was asked in relation to *la Superintendencia Nacional de Registros Públicos (SUNARP)*.

The question on registration was asked to:

- ▶ all employed following the independent path⁷; and
- ▶ all employed following the dependent path⁸ who work for a private business or farm⁹.

In total around 5-6 per cent of the target group in Uganda receiving the question either owned and operated or carried out work for a registered enterprise (see **Table 3**). In Peru the share owning and operating or working for a registered enterprise was more significant (28 per cent of all respondents asked).

In both Uganda and Peru there were typically more men than women that owned or worked for a registered enterprise. In Uganda it was around two percentage points difference while in Peru the difference was 9 percentage points (see **Table A2. 2** in Annex 2)

⁷ Independent path includes all that have indicated that they own and operate their own business, when asked about their status in employment.

⁸ Dependent path includes all those that have self-declared they are either employee, trainee or contributing family worker when asked about their status in employment.

⁹ Dependent workers employed by a government, state-owned enterprise, NGO, Int. Org, etc. are directly classified in the formal sector.

Table 3. Distribution of responses to questions relating to business registration by country, survey round and type of workers in employment (independent and dependent)

	Registration of own or employer's enterprises										
	Yes	No	Don't know	Total	Yes	No	Don't know	Total			
Uganda Wave 1: Approach (A+B)				Weighted counts				% Distribution			
Total	110	1475	82	1666	6.6	88.5	4.9	100.0			
Independent	35	1037	29	1101	3.1	94.2	2.6	100.0			
Dependent	75	437	53	566	13.3	77.3	9.4	100.0			
Uganda Wave 2: Approach (A+B)				Weighted counts				% Distribution			
Total	91	1499	102	1692	5.4	88.6	6.0	100.0			
Independent	26	1130	48	1204	2.2	93.8	4.0	100.0			
Dependent	65	369	54	488	13.3	75.7	11.0	100.0			
Peru: Approach (A+B)				Weighted counts				% Distribution			
Total	309	697	80	1085	28.4	64.2	7.3	100.0			
Independent	98	492	5	595	16.4	82.7	0.9	100.0			
Dependent	211	205	75	491	43.0	41.8	15.2	100.0			

The quantitative pilot tests suggest the question on business registration worked well particularly for independent workers (see **Figure 2**). The total share of “don’t know” among all respondents asked the question in Uganda was five per cent in round 1 and six per cent in round 2 with a slightly higher proportion of “don’t know” responses among men than women. In Peru the share was higher (seven per cent) with slightly more “don’t know” answers among women than men.

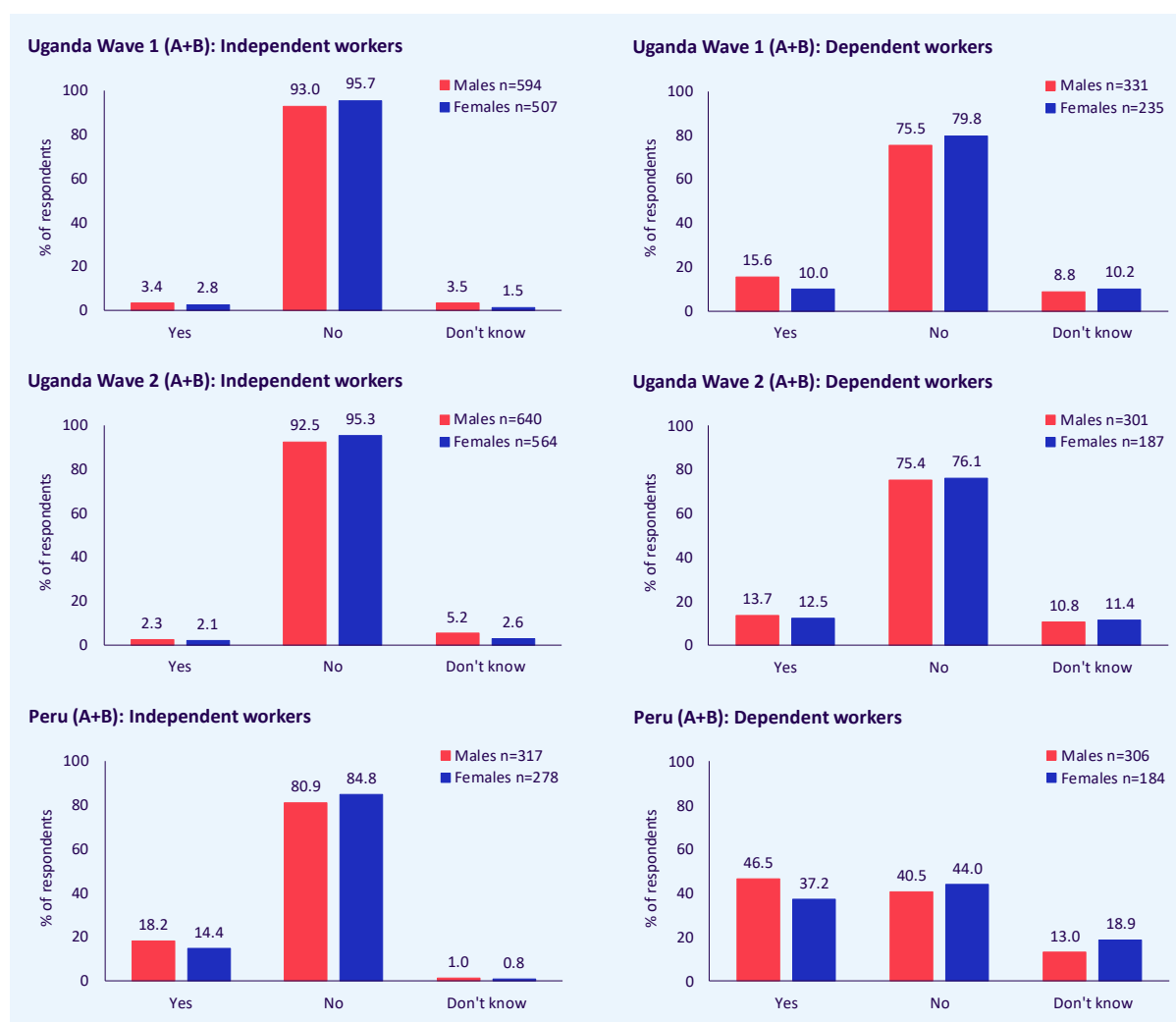
However, as can be seen in **Figure 2** there is a difference between independent workers and dependent workers. The share of respondents among independent workers that answered “don’t know” was significantly lower than among the dependent workers in all rounds of the study. In Uganda round 1, three per cent of the independent workers answered, “don’t know” and four per cent in round 2. This can be compared with the situation for dependent workers where in round 1 nine per cent answered, “don’t know” and 11 per cent in round 2. In Peru the share of “don’t know” among the independent workers was even lower and close to insignificant as less than one per cent were unable to provide information regarding registration. At the same time the share was higher among the dependent workers as 15 per cent were not able to provide this information.

Across all rounds, the prevalence of "don't knows" reaches its lowest point when the business is owned and managed by a woman. Conversely, the proportion of "don't know" responses is highest when the person is a dependent female worker (whether an employee or a contributing family member). Women thereby find themselves at both ends of the spectrum – associated with both the smallest and the largest shares of "don't know" responses.

The higher occurrence of "don't know" responses among dependent workers can be expected. This discrepancy is likely caused by the greater challenges faced by employees or contributing family workers in knowing whether their employer's enterprise or family business is registered,

in contrast to independent workers who possess ownership and operational control over their businesses and therefore are in a better position to provide this information. The difficulties for dependent workers are further increased in the case of proxy interviewing (as discussed in next section) which creates an extra layer and impacts on the quality for both dependent workers as well as for independent workers.

Figure 2. Distribution of responses to questions relating to business registration for independent workers (to the left) and dependent workers (to the right) by country, survey round and sex



The low share of don't knows among independent workers is however reassuring as registration is a key criterion for defining the formal and informal sector as well as for defining formal and informal employment for this group. Any quality issues for the question for dependent workers has a relatively lower impact as it would not directly affect the identification of formal and informal employment for this group, although it can impact their classification within the formal or informal sector.

2.1.1.1 Effect of proxy answers on registration

The second wave of data collection in Uganda and the pilot in Peru were used as an opportunity to integrate an explicit test of proxy effect on the answers to the questions used to identify labour market indicators and in particular ICSE-18 and informality. **Box 1** below provides more details about this specific test. The rest of this section illustrates the findings about the effect of proxy answers on registration.

Box 1. The explicit test on proxy effects

The aim of the explicit test of proxy effect conducted in wave 2 in Uganda and in Peru was to obtain both a self and proxy report about a selected individual within the household that will allow a direct comparison of differences in reporting. The approach needed to fit within already allocated resources and limited time available, including integration in the CAPI tool already developed for data collection. To minimize cost implications, rules that constrain respondent eligibility were avoided, with availability of working age respondents being the primary criteria for selection.

The approach used was that each household would be interviewed as normal obtaining as many direct interviews conducted in private as practical. Once all interviews were complete, one target respondent could be selected by the interviewers to be the focus of an extra proxy interview, with the proxy respondent to be the reference person or another available household member of working age.

Special training was provided, and the CAPI questionnaire was adapted to support the interviewers to implement the protocol. They were instructed to only attempt the extra proxy interview if the direct interviews had not already been overheard by the proxy respondent.

To analyze in depth proxy effect with a sufficient number of cases, given the low sample size, samples for approach A and B have been put together – in other words it has not been attempted to assess if proxy impacts were greater for one approach or the other, rather to assess the overall scale of proxy impacts.

The analysis of the proxy effect can be conducted in two different ways:

- ▶ The first one focuses on the differences in the global estimates of some key labour market indicators produced using direct and proxy data for each country (aggregate level analysis). This is useful to verify whether proxy answers may impact on levels and trends for the different indicators, i.e. how big is the impact on overall results.
- ▶ The second focuses on the differences observed for the same persons by comparing the results of the direct interview and of the proxy interview (micro level analysis), e.g. cross classifying the variables such as self-reported status in employment. This is useful to

understand whether proxy respondents are prone to provide different answers for specific questions and/or for specific profiles of interviewees, i.e. which type of respondents are most impacted.

One important assumption of both these types of analysis is that a “direct” response is always better than a “proxy” response, for all type of target respondents. Moreover, the results obtained with this kind of test are based on the implicit assumption (by design) that we have observed a 100% rate of proxy responses instead of 100% rate of direct responses.

The test carried out by the ILO in Uganda and Peru has shown that if we wish to extrapolate the results to real surveys, we should consider that:

- the size and the sign of the differences very much depending on national specificities (as evident from the different results obtained for Uganda and Peru, illustrated below). To more thoroughly understand the impacts in any given country similar tests could be carried out at a country level; and
- the possible differences observed will only impact the proportion of the sample that is interviewed by proxy (always lower than 100%) and depend both on the characteristics of the target respondents and the characteristics of the corresponding proxy respondents. In other words in a country where the proxy response rate is low (e.g. 10%) then the potential for impact on aggregate results is very low and the higher the proxy response rate the greater the potential for impact – however in no case would the scale of impact be expected to be as substantial as shown by the dedicated test in Uganda and Peru which compares 100% proxy interviewing to 100% direct interviewing.

A separate report is being published compiling all the key findings from the dedicated test of proxy effects.

Looking at the sub-samples that were part of the test on the proxy effect in Uganda Wave 2 and Peru (from now on referred as the proxy-test subsample), we can see more clearly how the responses given by proxy respondents differed from those provided from the direct respondents. The assumption of the test is that direct respondents provide the “true” answer.

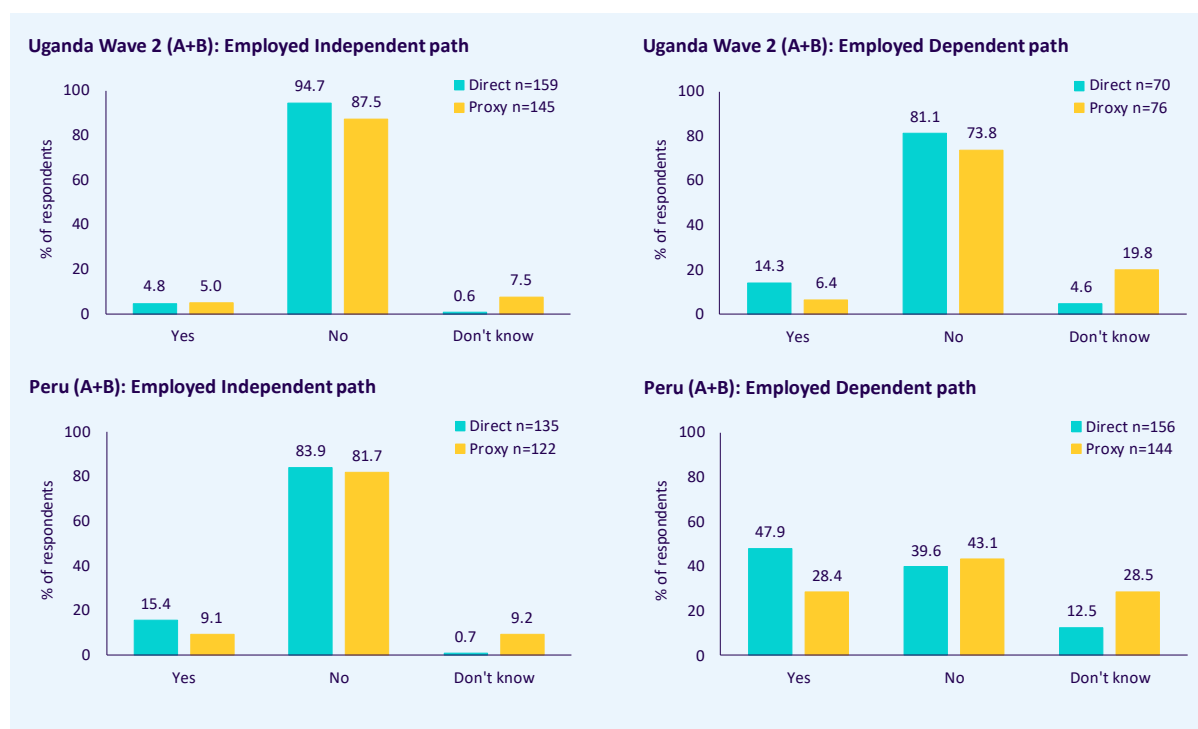
Figure 3 below shows that with reference to registration, within the proxy-test subsample a total of 229 cases were asked the question in Uganda¹⁰ and 291 in Peru¹¹- these being people working in private enterprises or farms. Although the number of respondents involved in the test was not very high, some interesting patterns nonetheless emerged. The results presented show the aggregate effect of reporting differences (i.e. not the micro level differences which are discussed later).

¹⁰ 159 from the independent path and 70 from the dependent path

¹¹ 135 from the independent path and 156 from the dependent path

Care is needed when comparing the results for the two countries as there are different levels of formality and the proxy-test subsamples were not rigidly pre-defined, however, they still share common features and offer a reasonable basis for analysis of proxy effects.

Figure 3 - Distribution of responses to questions relating to business registration by country, type of workers in employment and by type of response (direct or proxy)



Among **independent workers** in Uganda, it appears in aggregate that consistent outcomes were achieved where a business was reported to be registered, as demonstrated by the consistent registration rate (five per cent) achieved in both direct and proxy interviews (see graph on the top left of **Figure 3**). However, there is greater uncertainty when it pertains to enterprises that were not reported to be registered. The proportion of persons answering "no" to the registration question decreased from 95 per cent in direct interviews to 88 per cent when proxies are involved. Consequently, the incidence of responses falling under the "don't know" category, which initially accounted for less than one per cent in direct responses, increases to eight per cent in proxy responses.

Shifting to independent workers in Peru (see graph on the bottom left of **Figure 3**), challenges seem to arise for proxy respondents in providing accurate responses with relatively higher impacts at aggregate level. This is evidenced by lower proportions for both "yes" responses to registration (nine per cent) and "no" responses (82 per cent) in proxy interviews compared to direct interviews (15 per cent "yes" and 84 per cent "no"). This discrepancy leads to a

noteworthy increase in the "don't know" category, which was initially at zero per cent based on the direct responses but rises to nine per cent when based on proxy answers.

Consistent with the results highlighted in the previous section, the influence of proxy interviewing appears to be even more significant among **dependent workers** in both Uganda and Peru (see graphs on the right of **Figure 3**). In both countries, proxy respondents encounter heightened challenges in providing information on whether the enterprise is registered compared to those who provide direct responses. Consequently, the occurrence of "don't know" responses surges from a mere five per cent in the case of direct interviews to 20 per cent in proxy interviews in Uganda. In Peru 13 per cent of dependent workers offered "don't know" responses during direct interviews, this figure increased to 29 per cent in proxy interviews.

In Uganda, among dependent workers the proportion of respondents answering "yes" to registration, as well as those answering "no", are lower when proxy interviews are used compared to the direct interviews. In Peru the effect is slightly different. Like Uganda, the percentage of respondents answering "yes" is lower in proxy interviews compared to direct interviews. However, the percentage of respondents answering "no" is higher in proxy interviews than in direct interviews. This discrepancy implies that some proxy respondents may incorrectly respond "no", but at a relatively low scale.

The results mentioned above show the overall impact of proxy responses on the marginal distributions of registration (the net or aggregate level effect or misreporting in multiple directions). To comprehensively understand the scale of misreporting, it becomes necessary to also analyze inconsistencies between answers at the micro level. This analysis is illustrated in **Figure 4** and **Figure 5** where the two bars show the conditional marginal distributions of proxy answers given the specific categories of direct answers ("yes" and "no"), hence showcasing the observed inconsistencies between direct and proxy responses.

The analysis of the inconsistencies between direct or proxy answers and of the gross effect on the estimates is also encapsulated in the different tables of Annex 3, whose structure and interpretation is explained in **Box A3. 1**.

Figure 4. Distribution of responses to registration question for independent employed, direct and proxy responses by country

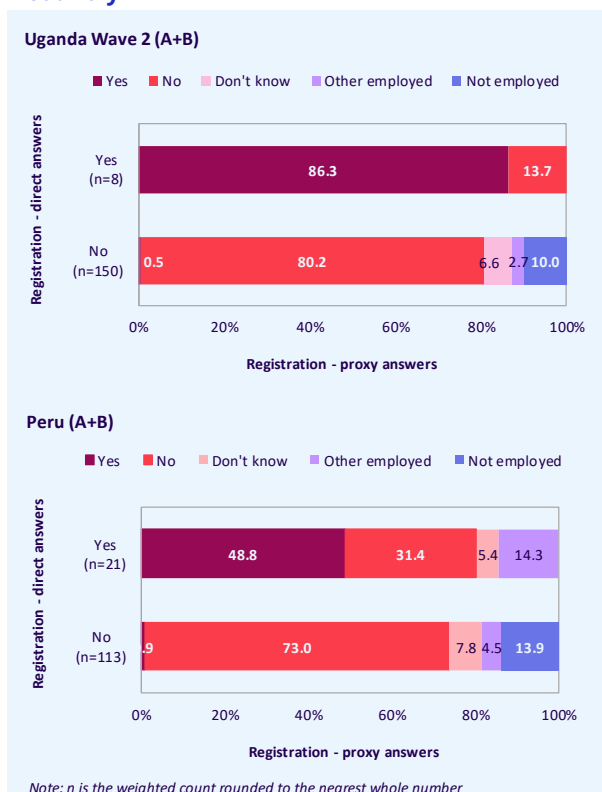
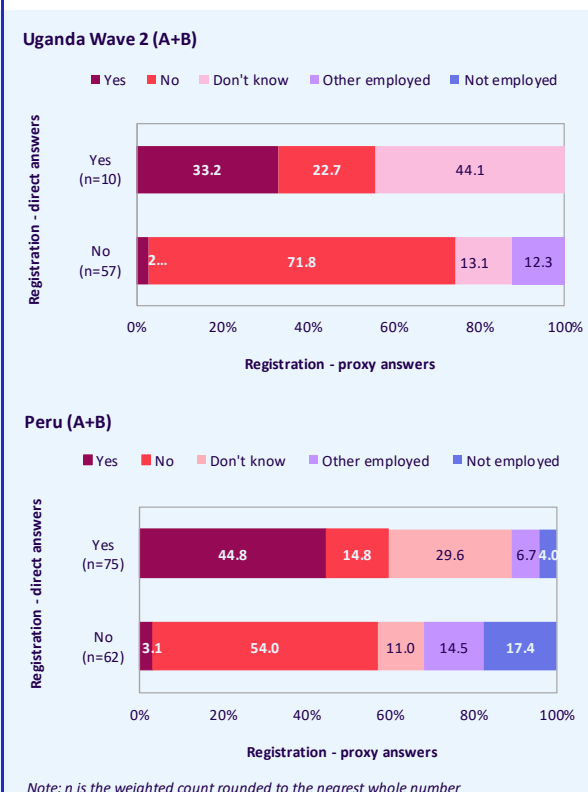


Figure 5. Distribution of responses to registration question for dependent employed, direct and proxy responses by country



In Uganda there was a high level of consistency between the answers to the question on registration given in the direct interview and the proxy interview among independent workers. In fact, 86 per cent of independent employed respondents working in registered businesses or farms (based on the direct response) – had a consistent response from the proxy interview (see graph on the top of **Figure 4**), while the remaining 14 per cent were reported on a proxy basis as working in an unregistered businesses (see also **Table A3. 3** in Annex 3).

In Uganda, consistency was slightly lower for independent employed respondents who directly replied “no” to the question on registration. For that group the same response was given on a proxy basis for 80 per cent of respondents. Less than one per cent of the cases (actually one case only) was misreported as “registered” while about 7 per cent were misclassified as “don’t know”. In this group, a small number of cases (3 per cent) were misreported by proxy respondents as “other employed”, more precisely as dependent workers, and an additional 10 per cent misreported as not employed.

In Peru, there was higher discrepancy between the direct interviews and proxy interviews for independent workers (see graph on the bottom of **Figure 4**). Consistency for independent employed respondents working in a registered business or farm was lower and with only about half of the proxy respondents also reporting that the business was registered, mainly due to misreporting as not registered (31 per cent) and “don’t know” (5 per cent). We also see 14 per cent of respondents misreported as “other employed” – i.e. not an independent worker.

Still in Peru, for those who did not directly report the business or farm as registered the level of consistency of proxy responses was 73 per cent, while about 1 per cent of proxy respondents misreported that the business was registered, and 8 per cent responded “don’t know”. Moreover, about 5 per cent were misreported as dependent workers and 14 per cent as not employed.

For dependent workers, the consistency of answers was generally lower than independent workers in both countries.

In Uganda (see graph on the top of **Figure 5**), 33 per cent of dependent employed respondents working in registered businesses or farms (based on the direct response) – had a consistent response from the proxy interview, while 23 per cent were reported on a proxy basis as working in an unregistered businesses, and 44 per cent were reported as “don’t know” by proxy respondents (see also **Table A3.4** in Annex 3).

In Uganda, consistency was slightly lower also for dependent employed respondents who directly replied “no” to the question on registration of their employer’s firm. For that group the same response was given on a proxy basis for 72 per cent of respondents. Less than three per cent of the cases misreported as “registered” while about 13 per cent were misclassified as “don’t know”. In this group 12 per cent of cases also were misreported by proxy respondents as “other employed”, more precisely as independent workers.

In Peru (see graph on the bottom of **Figure 5**), 45 per cent of dependent employed respondents working in registered businesses or farms (based on the direct response) – had a consistent response from the proxy interview, while 15 per cent were reported as working in an unregistered businesses by proxy respondents, and a further 30 was reported as “don’t know”. For this group, seven per cent of the cases were misclassified as independent employed and a further four per cent was misclassified as not employed.

As in Uganda, also in Peru consistency was lower for dependent employed respondents who directly replied “no”. For that group the same response was given on a proxy basis for 54 per cent of respondents. About three per cent of the cases were misreported as “registered” while about 11 per cent were misclassified as “don’t know”. In addition, there were much higher shares of respondents misclassified as “other employed” or “not employed” by proxy respondents, respectively 15 and 18 per cent.

Attempting to summarize these findings, based on the results from the cognitive and quantitative tests it seems **that the criterion of registration works well for independent workers particular in direct interviewing**. There was a high cognitive understanding of the question both among females and males and a low share of don't knows in the direct interviews. The share of don't know increases in proxy interviewing which primarily comes from respondents who would report "no" on a direct basis, but also potentially from "yes" in a limited number of cases with this latter misreporting changing the classification from formal to informal. **This suggests that, if this was repeated in other samples, on an aggregate level proxy interviewing could lead to a slight decrease of the formal sector and increase of the informal sector**. In addition, proxy interviewing might lead to some false positives and some false negatives. In Uganda the effect from this was marginal but in Peru it was more substantial. This reinforces a general message that response strategies should be designed to lessen proxy reporting, such as multiple visits at convenient or arranged times, to the extent allowed by available resources.

For **dependent workers** the evidence from the proxy text indicates that **the question on registration is more challenging than for independent workers**. The share of don't know increases and the impact of proxy interviews is more significant as **more false positives and negatives seems to be the outcome when a proxy interview is used**. This is expected to some extent as for dependent workers there is "an extra layer" as the question does not refer to the respondent's own enterprise (as in case of independent workers) but the enterprise of the employer of the respondent.

This inconsistency in net-levels is not, however, only a consequence from inconsistencies in answering the question of registration but also due to the fact that the proxy interview in some cases changes the status in employment category of the respondent or might result in a different labour status such as moving the respondent from being employed to unemployed or out of labour force.

2.1.2 Question on bookkeeping

The type of accounts kept in the business is also one of the criteria for defining the informal and formal sector of the economic unit and thereby also forms part of the definition of informal and formal jobs for independent workers. It is used in combination with the criterion of registration, that is, if the enterprise is registered **or** has accounts for tax purposes then the enterprise is defined as formal. In practice these two criteria would typically overlap as enterprises that keep accounts for tax purposes would, in most cases, also be registered enterprises. However, the use of both criteria can potentially be an important supplement if for example the respondent is not aware whether the enterprise is registered or not but might know the types of accounts that kept.

The operationalization of the criterion of bookkeeping also to some extent, needs to be adjusted to the national context. For example, in Peru there is the possibility for some registered enterprises (with a turnover below a given threshold) to keep a limited set accounts for tax purposes. Maintaining these accounts thereby becomes a strong indication in Peru that the enterprise is registered. In Uganda, no such option exists and the only relevant type of accounts to determine the formal or informal status of the enterprise would be a full set of accounts (i.e. balance sheets, assets, liabilities and flows of income and capital). The derivation of the criterion is thereby different for the two countries. In Uganda, only those enterprises where a full set of accounts for tax purposes is kept would be considered formal based on this criterion alone, while in Peru it would include those that have a full set of accounts as well as a limited set of accounts for tax purposes.

As with registration, the question on bookkeeping (see **Box A1.3** in Annex 1) was asked to all employed respondents following the independent path and the employed following the dependent path that worked for a private business or farm.

In the cognitive interviews the question seemed to work generally well, and respondents had a good level of understanding of the question and the different answer modalities. The inclusion of different types of accounts in the answer modalities ranging from “A full set of formal accounts for tax purposes” to “informal records of orders, sales, purchases” was deemed to be important as it contributes to a clearer identification of the boundary between official accounts for tax purposes and non-official accounts kept for internal use (for a distribution of the different types of accounts kept, see **Figure A2. 1** in Annex 2). Considering the experience in the cognitive testing no changes were made to the question for use during quantitative testing.

Table 4 below shows the result from the quantitative test. It shows the distribution between those that have answered that the enterprise kept accounts for tax purposes (either full or limited accounts for tax purposes in the case of Peru or full accounts in the case of Uganda), those that do not and the cases where the respondent did not know the type of accounts kept.

In Uganda, five per cent in wave 1 and three per cent in wave 2 stated that the enterprise they own and operate or work for (i.e. both independent and dependent workers combined) kept accounts for tax purposes. In Peru, 16 per cent stated that the enterprise kept accounts for tax purposes. In all pilots the occurrence is more frequent among dependent workers than among independent workers.

Table 4. Distribution of responses to questions relating to bookkeeping for tax purposes by country and type of workers in employment (independent and dependent)

	Book keeping for tax purposes								
	Yes	No	Don't know	Total	Yes	No	Don't know	Total	
Uganda Wave 1: Approach (A+B)		Weighted counts				% Distribution			
Total	76	1373	95	1544	4.9	88.9	6.2	100.0	
Independent	14	1052	35	1101	1.3	95.6	3.2	100.0	
Dependent	62	321	61	444	13.9	72.4	13.6	100.0	
Uganda Wave 2: Approach (A+B)		Weighted counts				% Distribution			
Total	52	1486	154	1692	3.1	87.8	9.1	100.0	
Independent	11	1126	67	1204	0.9	93.5	5.6	100.0	
Dependent	41	360	86	488	8.5	73.8	17.7	100.0	
Peru: Approach (A+B)		Weighted counts				% Distribution			
Total	174	727	181	1082	16.1	67.2	16.7	100.0	
Independent	37	547	11	595	6.2	91.9	1.9	100.0	
Dependent	137	181	169	488	28.2	37.1	34.7	100.0	

In Uganda, in both round 1 and round 2 approximately one per cent of independent workers stated that accounts for tax were kept, while it was 14 per cent of the dependent workers in round 1 and 9 per cent in round 2. Similarly, in Peru the keeping of accounts was reported by six per cent of the independent workers and 28 per cent of the dependent workers.

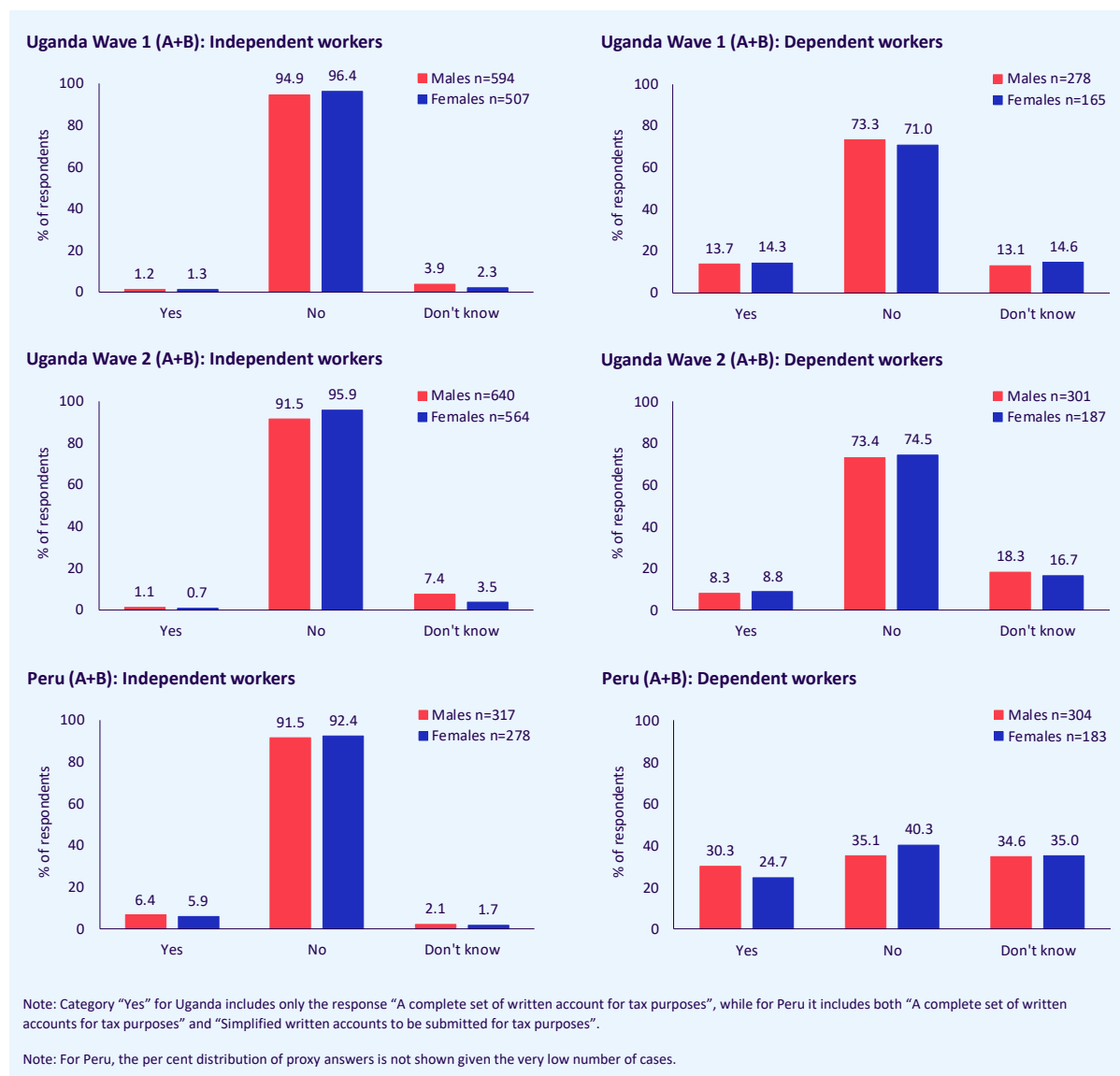
Figure 6 shows that in the majority of the studies a similar proportion of male and female respondents reported operating or working in an enterprise that keeps accounts (e.g. 1 per cent of male and female independent workers in Uganda wave 1). The most notable exception was in Peru among dependent workers where males were relatively more likely to report operating or working in an enterprise with accounts (30 per cent as compared with 25 per cent of female dependent workers) (see also **Table A2.3** in Annex 2).

The share of “don’t know” responses to the question on the type of accounts are slightly higher than, for example, the question on registration, indicating even bigger challenges among the respondents to provide this information. In Uganda six per cent in round 1 and nine per cent in round 2 answered “don’t know” and in Peru it was 17 per cent.

However, as with registration there are important differences between independent workers and dependent workers. Among the independent workers in Uganda three per cent in round 1 and six per cent in round 2 answered don’t know while the corresponding shares among dependent workers were 14 per cent in round 1 and 18 per cent in round 2. In Peru the

difference was even more significant as only two per cent of the dependent workers answered “don’t know” while it was 35 per cent of the dependent workers (See **Figure 6** below).

Figure 6. Distribution of bookkeeping practices relevant for the classification of the formal sector for independent workers (to the left) and dependent workers (to the right), by survey wave and country



Among the independent workers there were slightly higher share of don’t knows among independent male workers than among independent female workers which typically have the lowest share of “don’t know” among all groups (see **Figure 6**, graphs on the left). The situation for dependent workers seems to be slightly more mixed as “don’t know” was a more common response among dependent female workers than dependent male workers in Peru and Uganda round 1, but lower than dependent male workers in round 2 (see **Figure 6**, graphs on the right).

Like registration, the type of accounts has a greater significance for independent workers than for dependent workers, as it not only forms part of defining the formal and informal sector but also impacts on the definition of formal and informal employment for independent workers. The low share of “don’t know” among independent workers can therefore be viewed as pointing in the direction that the question is efficient to capture this aspect of formality. The higher share of “don’t know” responses among dependent workers can to some extent, result from less insight and knowledge around the type of accounts kept among employees and contribution family workers, which can only be expected to increase further as proxy interviews are used (as discussed below).

2.1.2.1 Effect of proxy answers on bookkeeping

Focusing on the proxy test subsample (see **Box 1** above), a total of 229 cases were asked the question on bookkeeping in Uganda Wave 2¹² and 291 in Peru¹³ - the same respondents asked the question on registration (See **Figure 7** below).

For **independent workers**, the share of “Yes” reported by direct respondents was less than one per cent in Uganda and around five per cent in Peru (**Figure 7**, graphs on the left, turquoise bars). The share of “don’t know” was only one per cent in Uganda and zero per cent in Peru, confirming that direct respondents who are independent workers are able to provide answers to the question. However, when looking at the distributions of the proxy responses, the shares of those able to provide an answer decrease and the share of “don’t know” increases significantly to 17 per cent in Uganda and 22 per cent in Peru (**Figure 7**, graphs on the left, yellow bars), hence highlighting difficulties for proxy respondents.

For **dependent workers**¹⁴, the share of those reporting that the enterprise they work for keeps accounts for tax purposes was nine per cent in Uganda and 35 per cent in Peru (**Figure 7**, graphs on the right). However, unlike independent worker the shares of “don’t know” are much higher among the dependent workers (six per cent in Uganda and 34 per cent in Peru) even when the interview is done directly. This again underlines that dependent workers naturally would have less information regarding the administration of the enterprise for which they work. The challenges with providing answers to the question on type of accounts increases further in the case the interview is based on a proxy response. In both countries the share of those able to provide an answer decreases significantly in the case of proxy responses while the share of “don’t know” increases to 36 per cent in Uganda and 56 per cent in Peru. In Uganda, the

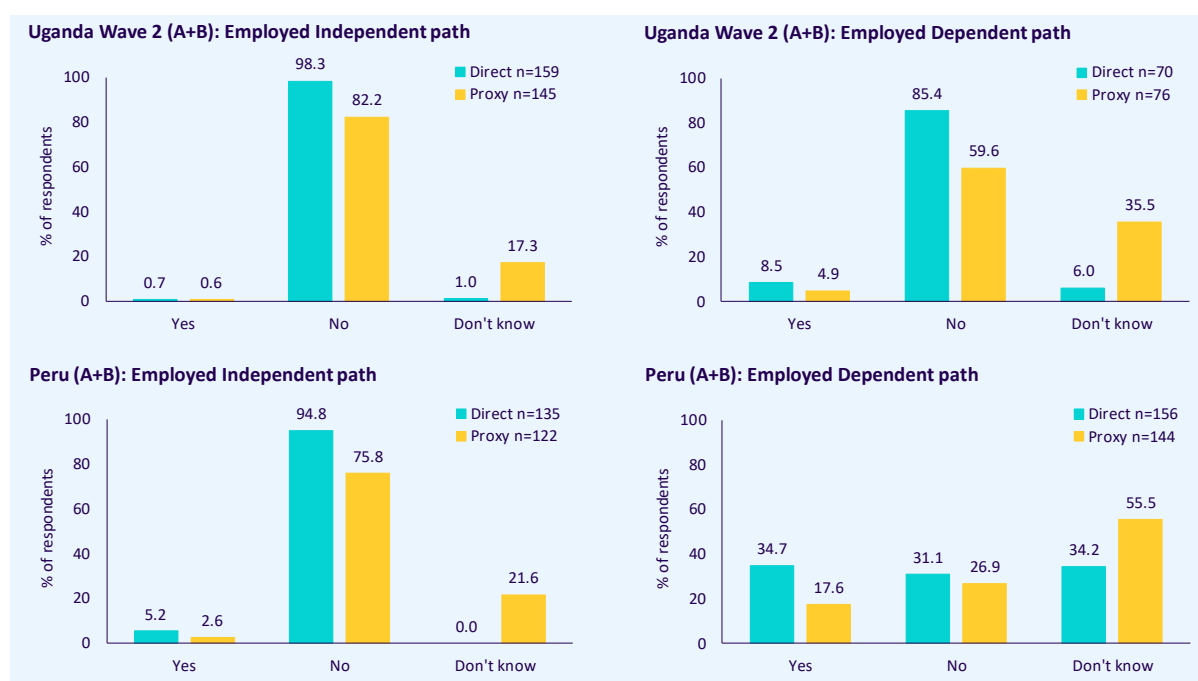
¹² 159 from the independent path and 70 from the dependent path

¹³ 135 from the independent path and 156 from the dependent path

¹⁴ As for registration, also for bookkeeping the question is only relevant for dependent workers that work for a private enterprise or farm.

majority of the increase in “don’t know” was accounted for by a decrease in “no” responses, while in Peru it reflected a larger decrease in “yes” responses – this shift being of particular concern as it can change the classification of the enterprise from the formal sector to the informal sector.

Figure 7. Distribution of responses to questions relating to bookkeeping by country, type of workers in employment and by type of response (direct or proxy)



Moving to the micro level differences, in Uganda, there was only one independent worker that answered “yes” to bookkeeping on a direct basis, and the proxy respondent in that case reported “no” (see graph on the top of **Figure 8**). For those directly responding “no” in Uganda, 71 per cent of the proxy respondents answered consistently. Less than one per cent of the proxy answers were misreported as “yes”, 16 per cent as “don’t know”, and about 13 per cent as “dependent employed” or “not employed”.

In Peru, there were seven independent workers that directly answered “yes” to keeping accounts for tax purposes (see graph on the bottom of **Figure 8**). When the proxy interview was carried out only two of these cases overlapped (i.e., “yes” in the direct interview as well as “yes” in the proxy interview). The remaining cases were either identified as “no” (12 per cent), “don’t know” (32 per cent) or ended up with a different status in employment category (29 per cent). For those in Peru directly responding “no”, 64 per cent of the proxy responses were consistent and 19 per cent were “don’t know”. About 18 per cent of the cases ended up with a different status in employment category or were identified as not in employment by proxy respondents.

As for registration, for **dependent workers** the level of consistency for bookkeeping is generally much lower in both countries (see **Figure 9**). The level of overlap among dependent workers for “yes” responses was 46 per cent in Uganda and 34 per cent in Peru, while the overlap for those answering “no” was 57 per cent in Uganda and 44 per cent in Peru.

Figure 8. Distribution of responses to bookkeeping question for independent employed, direct and proxy responses by country

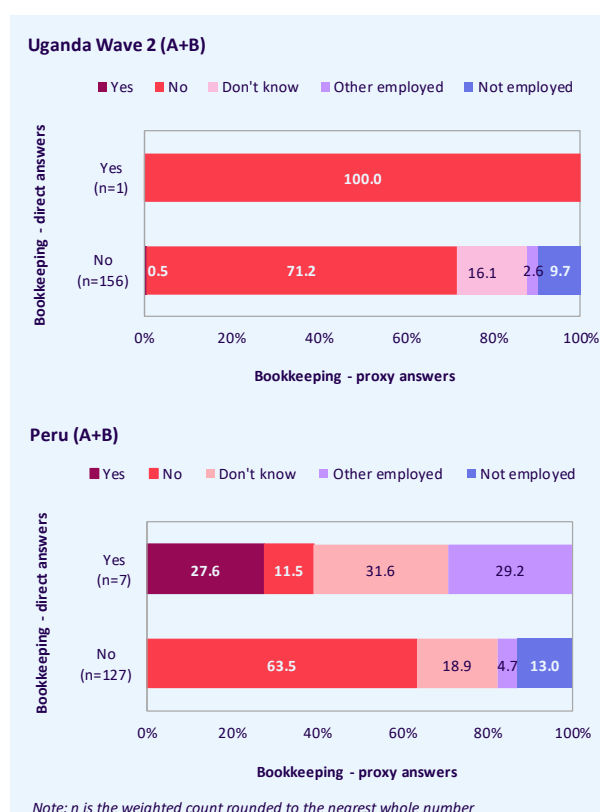
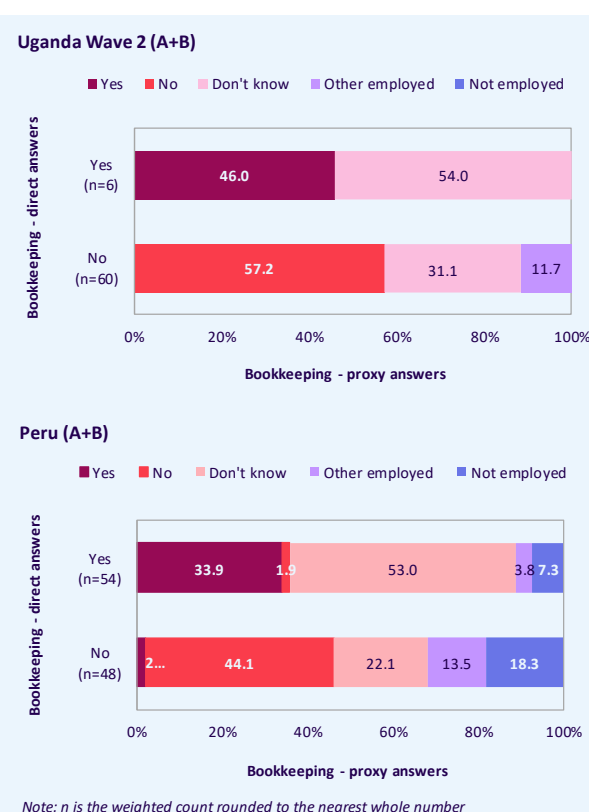


Figure 9. Distribution of responses to bookkeeping question for dependent employed, direct and proxy responses by country



There are, however, very few cases of reported false positives in the test whereby a proxy respondent reported “yes” to accounts for tax purposes, but the direct respondent did not. This is of particular note as this is the type of misreporting that would change the classification from informal to formal sector. In Uganda among the independent workers there was only one case (out of 156) where the respondent had answered that no accounts for tax purposes were kept but where the proxy respondent reported that accounts were kept, and in Peru there were no such case at all (see also **Table A3.5** in Annex 3). Among the dependent workers there were a few false positives in Peru (five out 101), but still at a very marginal level, while none appeared in Uganda (see also **Table A3.6** in Annex 3).

The proxy test clearly showed that **the share of “don’t know” in relation to the type of accounts kept, increased when proxy interviewing took place.** This causes a **movement from those identified as having accounts for tax purposes and from those answering that they do not, towards an increase of those answering “don’t know”.** In particular, this has an impact among dependent workers but to some extent also impacts the independent workers, where fewer would be identified as having a formal enterprise based on the criterion of bookkeeping when proxy interviews are used instead of direct interview. The final effect of this would, however, depend on several different factors, such as the overall share of proxy interviews or reporting of registration as discussed earlier.

2.1.2.2 Bookkeeping as a recovery question for registration

Bookkeeping as a criterion is intended to be used in combination with registration even if they typically in practice would overlap as enterprises with accounts for tax purposes also to a very large extent would be registered enterprises. The underlying assumption is therefore that the existence of accounts for tax purposes can be viewed as an indication that the enterprise is registered and therefore should be considered formal.

Figure 10 below shows the contribution to the identification of formal enterprises by the criterion of the type of accounts kept. As can be seen the significance of this contribution differs between the countries, whether the person is an independent worker or dependent worker and varies between women and men.

In Peru, the criterion of type of accounts would only have a very marginal impact. Among the independent workers only one per cent that would not be identified through the criterion of registration, would be identified as having a formal enterprise on the basis of the type of accounts. Among dependent workers the figure is slightly higher, but still relatively marginal (seven per cent). In addition, there were no particular differences between women and men in the impact of this criterion.

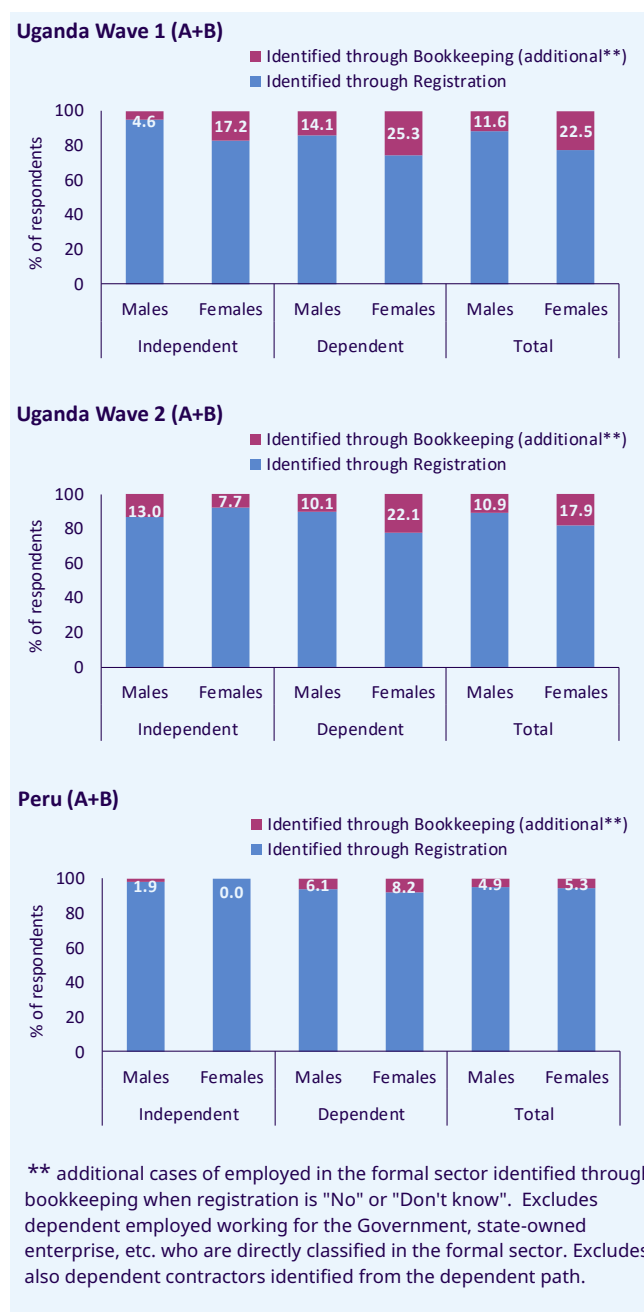
In Uganda, however, the significance of the criterion is more substantial in particular among dependent female workers. Among independent workers, around 10 per cent of all respondents identified as having a formal enterprise in both round 1 and 2 were identified through the bookkeeping criterion (but not reported as registered (see also **Table A2. 4** in Annex 2).

In round 1, a higher share of female independent workers was identified as having a formal enterprise than men (respectively 17 per cent female and five per cent male) through this criterion, while in round 2 it is reversed (respectively 13 per cent male and eight per cent female). Among the dependent workers in Uganda the contribution to the identification of formal enterprises is even more significant. In round 1, 18 per cent of the dependent workers working for a formal enterprise would be identified through the criterion of bookkeeping, and 15 per cent in round 2. There is also a significant difference between female and male dependent workers in round 1 as 25 per cent of the female dependent workers in formal enterprise were identified through the criterion of bookkeeping while this would be the case for 14 per cent of the males. In round 2 the corresponding figures are respectively 22 per cent for women and 10 per cent for men.

As already discussed, the question used for capturing the criterion of bookkeeping seems to work well in relation to direct interviews and when independent workers are the target group. When asked to dependent workers the “don’t know” increases which is expected due to limitations in knowledge of dependent workers in relation to the accounts kept in the employers’ enterprise, and this is further amplified when proxy interviewing takes place.

On balance taking all these findings into consideration they suggest that in some settings the criterion of bookkeeping can make a relatively substantial contribution to the identification of formal enterprises, not identified by the question on registration. However, this is not

Figure 10. Independent and dependent employed by criteria used to identify them as being in the formal sector, by country, survey round and sex.



universally true (e.g. limited impact in Peru) and on this basis countries could consider exclusion of the question if evidence suggests it has minimal impact or alternatively to only ask it to those answering no or don't know to registration. This should not be interpreted as saying the criterion is not relevant – rather that operationally it may have limited impact in some settings and thus response burden could be reduced without impacting estimates. However, by default it is recommended to include the criterion for all persons working in private enterprises or farms unless evidence (such as through testing at scale) indicates that its impact is low for both women and men.

There is also evidence of a differential impact of this criterion between males and females but not systematic in direction or size across the pilot studies. Taking the case of Uganda, the criterion was particularly important to identify formality among female dependent workers so in such a case its inclusion is critical to avoid gender biases in estimates of informal employment and employment in the informal sector.

The findings additionally indicate relatively greater difficulties for dependent workers and for proxy respondents suggesting that the approach to proxy interviewing can influence aggregate level results. This could lead to several possible variations to methodology such as asking independent workers only, particularly if the proportion of proxy interviewing is high.

It is strongly recommended that to the extent possible any decisions on the inclusion or exclusion of this question are based on evidence and takes into consideration its aggregate level impact, any differential impact between groups (such as women and men, dependent and independent workers and the intersections of both) and the proportion of proxy interviewing.

2.2 Dependent contractors and registration for tax on profits

One of the important changes taking place with the new resolution concerning statistics on the informal economy is the integration of dependent contractors in the framework of informality. According to the resolution dependent contractors will be categorized in the formal sector if they have either a formal enterprise (similar to independent workers) or is registered in relation to tax on the profits made. However, similar as for other dependent workers this is just a first step in defining the formal or informal status of their job. In order for the job to be formal the dependent contractor would need to be categorized in the formal sector **and** have an effective access to formal arrangements such as social protection. If this is not the case, then the dependent contractor would have an informal job in either the formal sector or the informal sector.

Registration in relation to tax on profits thereby forms part of the definition and was consequently tested in both Uganda and Peru. In both countries the possibility exists to register in relation to tax on profits without registering an enterprise. In Uganda such a registration would generate a so-called Taxpayer Identification Number (TIN number) while in Peru it would imply that the person is registered in the Registro Único de Contribuyente (RUC). The respective question was included and asked to all those identified as dependent contractors based on earlier questions in the questionnaire (see **Box A1.4** in Annex 1).

The question worked well in the cognitive tests. In general, there seemed to be a good awareness of respectively the TIN-number in Uganda and the RUC in Peru and the results did not indicate any significant problems that would lead to misreporting.

Based on the feedback received the questions also seemed to work well in the quantitative tests albeit with some reports of sensitivity. As can be seen in **Table 5**, in Uganda in both round 1 and 2, one per cent of the dependent contractors answered that they were registered and had a TIN-number. In Peru the share of those registered in RUC was more significant at 17 per cent. Considering the contexts and wider prevalence of informality, none of these findings are surprising.

The information presented in **Table 5** relates to respondents who initially reported themselves as operating an enterprise (i.e. the independent path) but were subsequently identified as dependent contractors based on questions about dependence and control on another entity.

The prevalence of “don’t know” responses was relatively low in Uganda while in Peru (where the proxy interview rate was very low) the “don’t know” responses were close to zero.

Table 5. Distribution of responses to questions on job and tax registration for Dependent contractors (independent path) by country and survey round

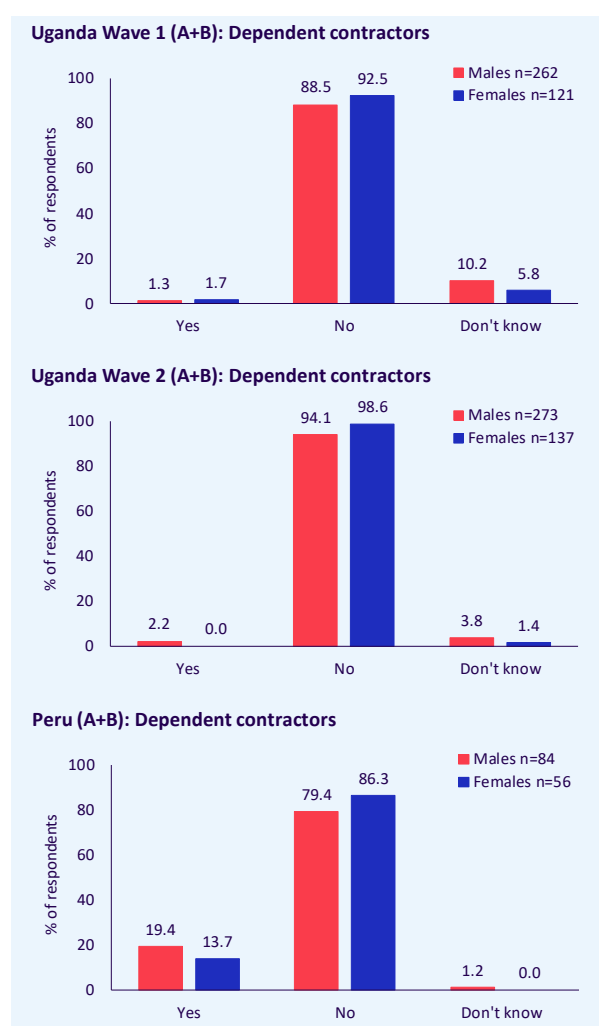
	Job and tax registration for Dependent contractors (independent path)							
	Yes	No	Don't know	Total	Yes	No	Don't know	Total
Uganda Wave 1: Approach (A+B)	Weighted counts				% Distribution			
Total	5	344	34	383	1.4	89.8	8.8	100.0
Uganda Wave 2: Approach (A+B)	Weighted counts				% Distribution			
Total	6	392	12	410	1.4	95.6	3.0	100.0
Peru: Approach (A+B)	Weighted counts				% Distribution			
Total	24	115	1	140	17.1	82.2	0.7	100.0

The results point at the differences between the level of informality in the two countries where very few dependent contractors (1-2 per cent) would end up being categorized in the formal sector as a result being registered for tax in Uganda while in Peru it would be 10-20 per cent of the dependent contractors (see also **Table A2. 5** in the Annex 2).

Some differences between women and men were found in Peru (see **Figure 11**) as more male dependent contractors were registered for tax (19 per cent for males as compared with 14 per cent for females) however, care should be taken in interpreting this difference due to the low number of dependent contractors in the sample in Peru. Nonetheless, it suggests that asking this question may highlight differences in the situation of male and female dependent contractors.

Not many differences between women and men were found in Uganda wave 1 and 2, other than a slightly higher share of “don’t know” for males compared to females.

Figure 11. Independent and dependent employed by criteria used to identify them as being in the formal sector, by country, survey round and sex.



2.2.1 Effect of proxy answers on job and tax registration

As for other similar questions, providing answers on registration in relation to tax on profits becomes more challenging in case of proxy response. In both countries, the shares of those able to provide a valid answer (“yes” or “no”) decrease, and the share of “don’t know” responses increase to 12 per cent in Uganda and 23 per cent in Peru (see **Figure 12**).

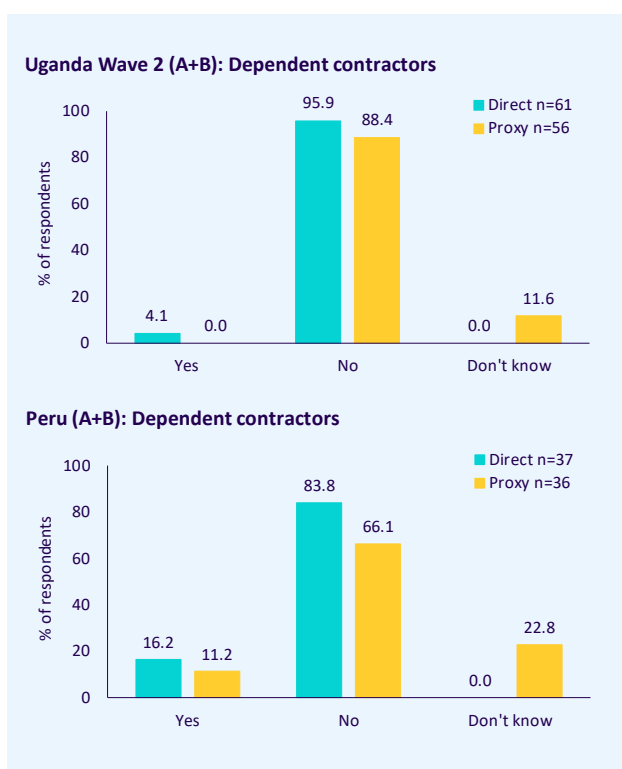
In both countries, the shares of “yes” responses decreases when proxy answers are given, hence potentially producing an increase of the informal sector among dependent contractors. While care should be taken due to the low number of dependent contractors responding to the dedicated proxy effect test, it can be noted that the level of consistency at the aggregate level in Uganda was relatively higher than in Peru.

The decrease of dependent contractors answering “yes” to registration in relation to profits in this case does not ultimately relate to inconsistent answers to that specific question at the individual level – rather that the people who answered yes through a direct interview were classified to a different status in employment category based on earlier questions provided by proxy respondents, as can be

seen in **Figure 13** below. In Peru the analysis also points to more inconsistent answers between proxy and direct responses, with a number of respondents moving from “yes” to “no” and from “no” to “don’t know” (see also **Table A3. 7** in Annex 3).

One of the points this analysis highlights is that issues related to informality and status in employment are closely inter-related touching on elements of working relationships and conditions that are often correlated. A consequence of this is that impacts on results due to proxy interviewing can arrive from different points in the questionnaire, including whether the respondent is classified as employed or not, or their reported status in employment.

Figure 12. Distribution of responses to questions relating to having a TIN or RUC number by type of workers in employment and by type of response (direct or proxy)

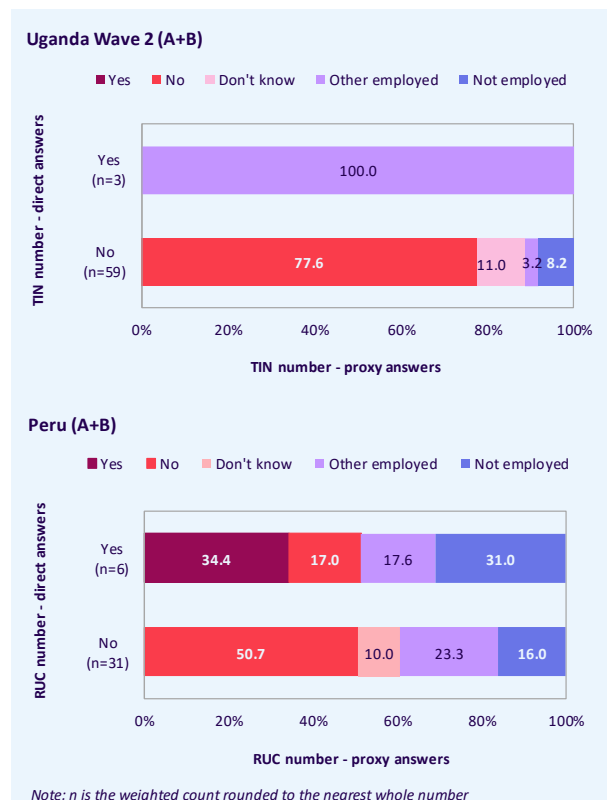


As reported in the previous section, the question on registration for tax appears to function relatively effectively, exhibiting a good comprehension among the target population i.e. dependent contractors. During direct interviews, respondents were able to provide an answer regarding their registration in relation to their profits.

However, in the context of proxy interviews, akin to the situation with other questions, respondents showed increased difficulty in providing a response, resulting in a notable increase in the proportion of respondents opting for the "don't know" response. There were no false positives on a proxy basis in either country, rather other movements. For example, in Uganda all three of the dependent contractors who directly reported "yes" to the registration question were not recorded as dependent contractors by the proxy respondent and thus not asked the question.

In Peru we see movements from "yes" to "no" (17 per cent) and from "no" to "don't know" (10 per cent), and also cases misreported on a proxy basis as "other employed" or "not employed".

Figure 13. Distribution of responses to taxation registration question for dependent contractors, direct and proxy responses by country



2.3 Job-related social insurance

Employers' contribution to social insurance on the behalf of the employee is a key criterion for defining **informal and formal jobs for employees**. It captures whether the employer in practice recognizes the job held by the employee in relation to the countries legal and administrative framework by ensuring access to formal arrangements that protect the employee. According to the resolution concerning statistics on the informal economy, *Employers' contribution to social insurance* is a prioritized criterion, i.e. if the employer in practice contributes to social insurance on the behalf of the employee, then the job held by the employee is to be defined as formal, without reference to other criteria. Thus a characteristic of informal jobs is an absence of such contributions.

The question used to apply the criterion needs to be adjusted to the national context and countries are recommended to operationalize it by making reference to the different relevant national types of job related statutory social insurances. In the pilot in Uganda the question asked specifically about contributions to National Social Security fund (NSSF) and in Peru the *Seguro Social de Salud* was referenced.

Depending on the country context job-related social insurance can also have a role in deciding if the employment of dependent contractors and contributing family workers is formal or informal. In countries where only very limited or no formal arrangement comes with being registered for tax in relation to the profits made, voluntarily contributions to social insurance by the dependent contractor can be used to ensure that a coverage of formal arrangements exists, thus indicating that the job is formal. In both, Uganda and Peru it would be relevant to use this additional criterion as dependent contractors registered for tax only would not be covered by any formal arrangements that contribute to the reduction of their economic risk.

The resolution concerning statistics on the informal economy, also includes the possibility to recognize that contributing family workers may have formal jobs in countries that offer the possibility for contributing family workers to register their job and to contribute (either on a mandatory or voluntary basis) to job-related social insurance. The jobs held by contributing family workers can, in these countries, be considered formal if they work for a formal family business, are registered and contributions are made to a social insurance. In countries where such a possibility does not exist the jobs of contributing family workers would be informal by default.

As job-related social insurance is relevant to determine formal and informal employment for employees, dependent contractors and contributing family workers in both Uganda and Peru questions were included targeting all three groups.

Cognitive testing indicated that, in Peru, there was good understanding of the question on contributions to job related social insurance (see **Box A1. 5** in Annex 1). One reason provided for this is that during the Covid-19 pandemic, awareness of social protection schemes was raised considerably. In Uganda, the cognitive interviews indicated that awareness of social insurance was low, and participants had difficulties understanding the concept. However, this did not seem to impact the use of this as a criterion for defining informal and formal jobs for employees. None of the participants answered yes to the question in Uganda and the probing did not indicate that there were any cases where a participant should have answered yes (no false negatives).

Amongst employees in Uganda approximately 15 per cent in round 1 and 12 per cent in round 2 indicated that the employer does contribute to social insurance on their behalf, thus defining their jobs as formal (see **Table 6** below). The share in Peru was higher, with 46 per cent of all employees reporting that their employers make such contributions.

The proportion of employees responding "don't know" to the question was relatively moderate in Uganda, accounting for 11 per cent in the first round and 14 per cent in the second round, consistent with the general low awareness of the social insurance system highlighted in the cognitive tests. In contrast, the incidence of "don't know" is significantly lower in Peru, where merely one per cent of employees were unable to provide an answer. This also validates the findings from the cognitive test, which emphasized the high awareness of the national social insurance system.

Table 6. Distribution of responses to questions on job related social insurance for different categories of dependent workers by country and survey round

	Job related social insurance for dependent workers							
	Yes	No	Don't know	Total	Yes	No	Don't know	Total
Uganda Wave 1: Approach (A+B)	Weighted counts				% Distribution			
Employees	82	399	59	539	15.2	73.9	10.9	100.0
Dependent contractors (dependent path)	0	270	22	292	0.0	92.5	7.5	100.0
Contributing family workers	0	110	2	111	0.0	98.4	1.6	100.0
Uganda Wave 2: Approach (A+B)	Weighted counts				% Distribution			
Employees	69	418	82	569	12.2	73.4	14.4	100.0
Dependent contractors (dependent path)	0	372	16	388	0.0	95.9	4.1	100.0
Contributing family workers	0	73	2	75	0.0	97.3	2.7	100.0
Peru: Approach (A+B)	Weighted counts				% Distribution			
Employees	238	272	4	513	46.3	53.0	0.8	100.0
Dependent contractors (dependent path)	0	106	2	108	0.0	98.1	1.9	100.0
Contributing family workers	0	32	2	34	0.0	94.2	5.8	100.0

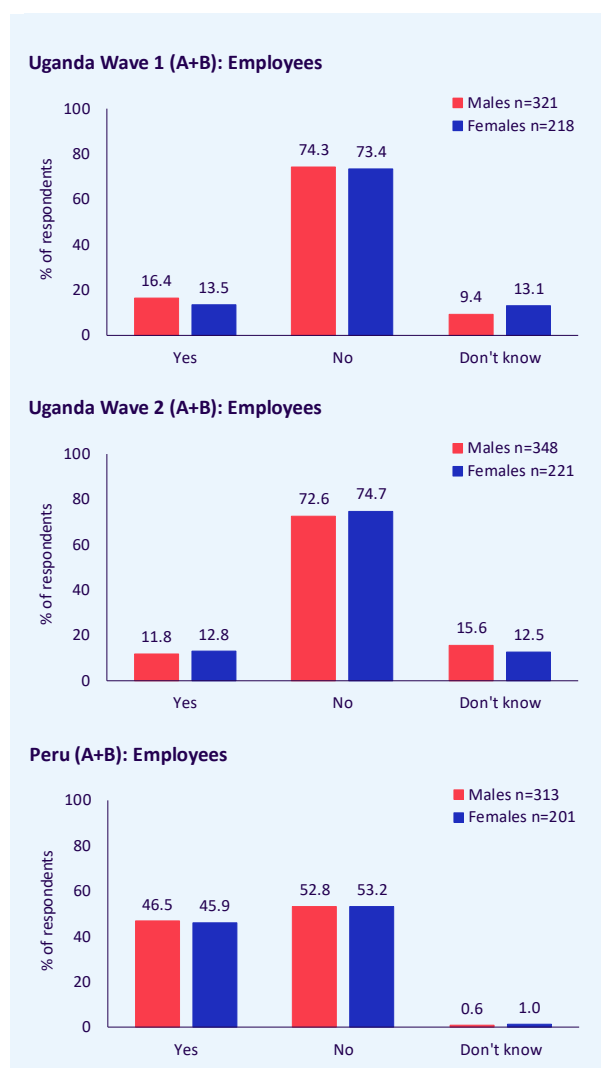
In both Uganda and Peru, there were no instances observed where dependent contractors or contributing family workers made contributions to the voluntary social insurance scheme. Consequently, this implies that none of the dependent contractors or contributing family workers would be categorized as having formal jobs.

Notably, respondents appeared capable of providing information regarding contribution to social insurance, as the proportion of "don't know" responses was lower among dependent contractors compared to employees, ranging from eight per cent in Uganda round 1 to just two per cent in Peru. Moreover, this percentage was even lower among contributing family workers, ranging from four per cent in Peru to two per cent in Uganda round 1.

In terms of contribution to social insurance by employers, there were no significant differences in the distribution of responses between women and men in any of the pilot studies (see **Table A2. 6**, **Table A2. 7** and **Table A2. 8** in Annex 2).

Notably, among employees (see **Figure 14**) no distinct patterns emerge upon disaggregating the "don't know" responses between women and men. For dependent contractors and contributing family workers there seemed to be a slightly higher proportion of "don't know" responses among men than women in Uganda. Conversely, in Peru, this pattern is reversed. However, it's important to note that the number of observations in Peru is limited and thus no strong conclusion can be reached on differences in likelihood of "don't know" responses between women and men.

Figure 14. Distribution of job-related social insurance for employees by country, survey round and sex



2.3.1 Effect of proxy answers on job-related social insurance

When assessing the proxy test sub-sample, it becomes evident that dependent workers appear to know well their situation in terms of social contribution despite the very different coverage in the two countries. The share of “don’t know” responses in the direct interviews are marginal in both Uganda and Peru (one and two per cent respectively, see **Figure 15**).

However, as for other questions previously discussed, providing answers to this question becomes more challenging in case of proxy response. In both countries, the share of those able to provide the information (i.e. answering “yes” or “no”) decrease, especially in Uganda where the share of “don’t know” increased significantly to 17 per cent.

In both countries, the shares of “yes” decrease when proxy answers are given, hence potentially producing a decrease of formal employment among dependent workers.

When looking at the inconsistency at the individual level between direct interviews and proxy interviews (see **Figure 16** below) it is clear that proxy respondents tend to provide more “no” and “don’t know” answers, in both countries (see also **Table A3. 8** in Annex 3).

For example, in Uganda, there were 10 dependent workers who answered “yes” when interviewed directly about payment of social contributions for their work. However, when the answer was provided by proxy respondents it was consistent only for six cases (62 per cent) and in the remaining cases the response was instead “don’t know”. By contrast, there was only one case (out of 138) that was misreported as “yes” by proxy respondents when in fact it was reported as “no” by the direct respondent (less than one per cent).

Figure 15. Distribution of responses to questions on job related social insurance for dependent employed, by country and type of response (direct or proxy)

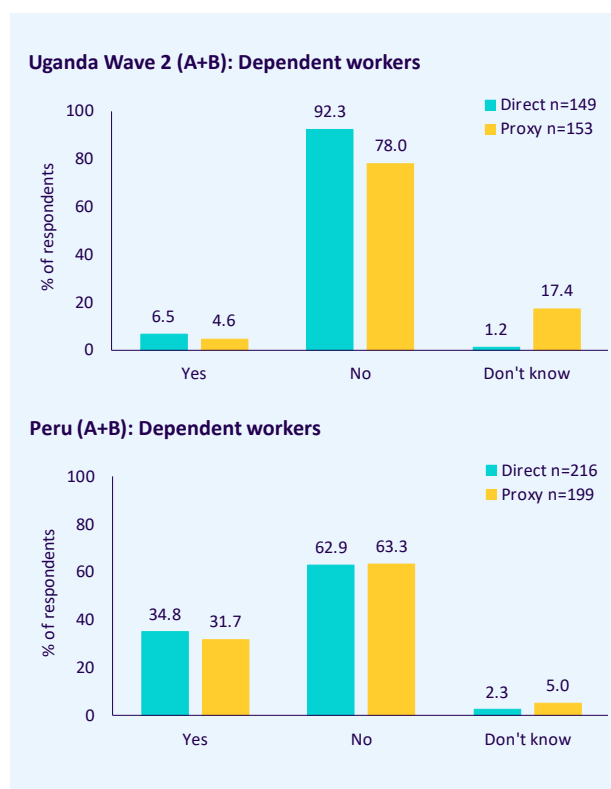
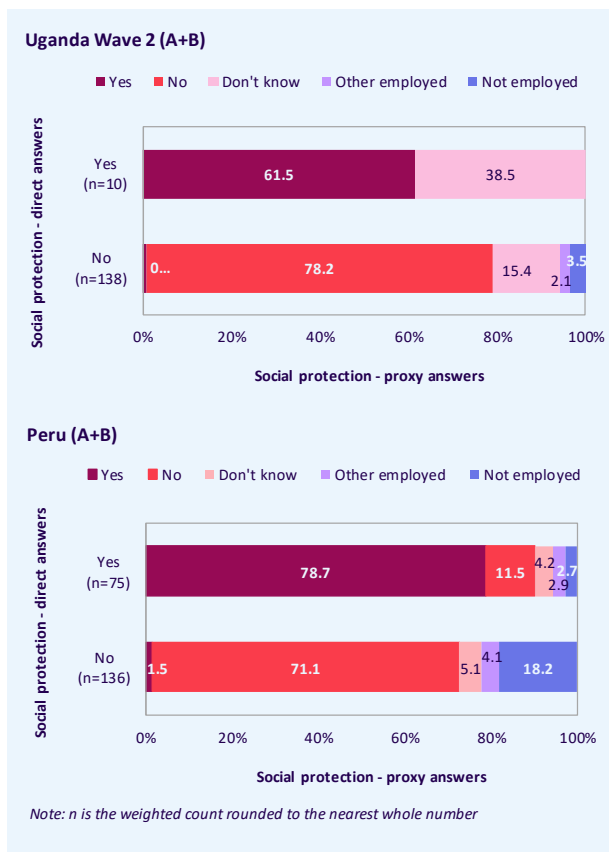


Figure 16. Distribution of responses to job-related social insurance question for dependent employed, direct and proxy responses by country



In Peru, false negatives (a “no” or “don’t know” proxy response when “yes” was reported directly) were more common (79 per cent) than false positives (less than two per cent).

The conclusion from the above is that in both countries, the overall impact of observed misreporting is a general decrease of the share of “yes” answers when proxy answers are used and a general increase of the share of “don’t know” potentially moving dependent workers from formal employment to informal employment.

The scale of this impact will depend on many factors such as the prevalence of informality in the country and the approach to proxy interviewing among other things, but in the case of the pilot studies this was not concluded to relate to the wording of the questions in particular, which were found to operate well in general.

2.4 Paid leave

Paid sick leave and paid annual leave are proposed within the resolution to be additional criteria that countries can use to identify and informal jobs for employees. Countries can either use those criteria in case there is no information regarding whether the employer contributes to social insurance on the behalf of the employee (as would be the situation in case the responded has replied don't know to this question) or, depending on the country context, it can also be used in case no contributions are made by the employer. In these situations, and if the employee has access to paid sick leave **and** paid annual leave then the standards state that the job can still be considered formal.

2.4.1 Paid sick leave

In the first round of cognitive tests in Uganda, access to paid sick leave was included through a standard question wording typically used by countries (see **Box 2**). Probing found this formulation did create false positives. Some participants who did not receive payment for the loss of work incorrectly still answered yes because their employer had paid their medical bills. This led to a re-formulation of the question in the second round (as well as in the first round in Peru) asking whether they would lose their pay in case of sickness.

This alternative formulation seemed to work well in subsequent cognitive testing and there were no indications of difficulties or false positives or negatives. However, when testing that question in quantitative tests the reverse negative logic of the new formulation (would you **lose** pay if you **could not** work due to illness or injury) was not found to work well, causing confusion, and the question was abandoned after the first wave of testing in Uganda (see also **Box A1.6** in Annex 1).

Furthermore, the cognitive tests also indicated that access to paid sick leave does occur in an informal context. Among informal employees, it's possible that they continue to receive their regular salary and/or compensation in kind, even when they are briefly absent due to illness. However, in none of these cases the person had access to paid annual leave as well. This underscores the importance of refraining from solely relying on access to paid sick leave when capturing formal and informal employment for employees.

Box 2. Questions tested about access to paid sick leave

Phase of testing	Question(s) tested Response options for all were Yes, No, or "Don't know" (not read out)	Findings
Cognitive testing Round 1	Would you get paid sick leave in case of illness or injury?	Some false positives with participants who did not receive payment for the loss of work still answered yes because their employer had paid their medical bills.
Cognitive testing Round 2	Would you lose pay if you could not work due to illness or injury?	Question was well understood and appeared to attain accurate responses.
Pilot testing Wave 1	A. Would (you/NAME) get paid sick leave in case of illness or injury? B. Would (you/NAME) lose pay if you could not work due to illness or injury?	Version A appeared to work reasonably well. The reverse logic of Version B did not lead to the anticipated reversal of responses with a similar distribution of YES/NO/"don't know", an indication that this question did not work.
Pilot testing Wave 2 and Peru	A. Would (you/NAME) get paid sick leave in case of illness or injury? B. If (you/NAME) could not work due to illness or injury would (your/his/her) employer still pay (you/NAME) for those days (you/NAME) could not work?	Some differences in the distribution of responses for Version A versus Version B. However, the direction of changes was different in Uganda versus Peru.

Based on the quantitative tests, 44 per cent of the employees in round 1 in Uganda and 36 per cent in round 2 reported having access to paid sick leave, while the level was 45 per cent in Peru (see [Table 7](#)). However, a direct comparison of results between the two rounds should be done with caution, given the issues discussed earlier—namely, that the formulation of the question in the first round led to both false positives and false negatives (see Uganda Wave 1, Approach A and B in [Table A2. 10](#) in Annex 2). The drop in prevalence between the rounds is likely due, at least in part, to the dropping of the alternative wording.

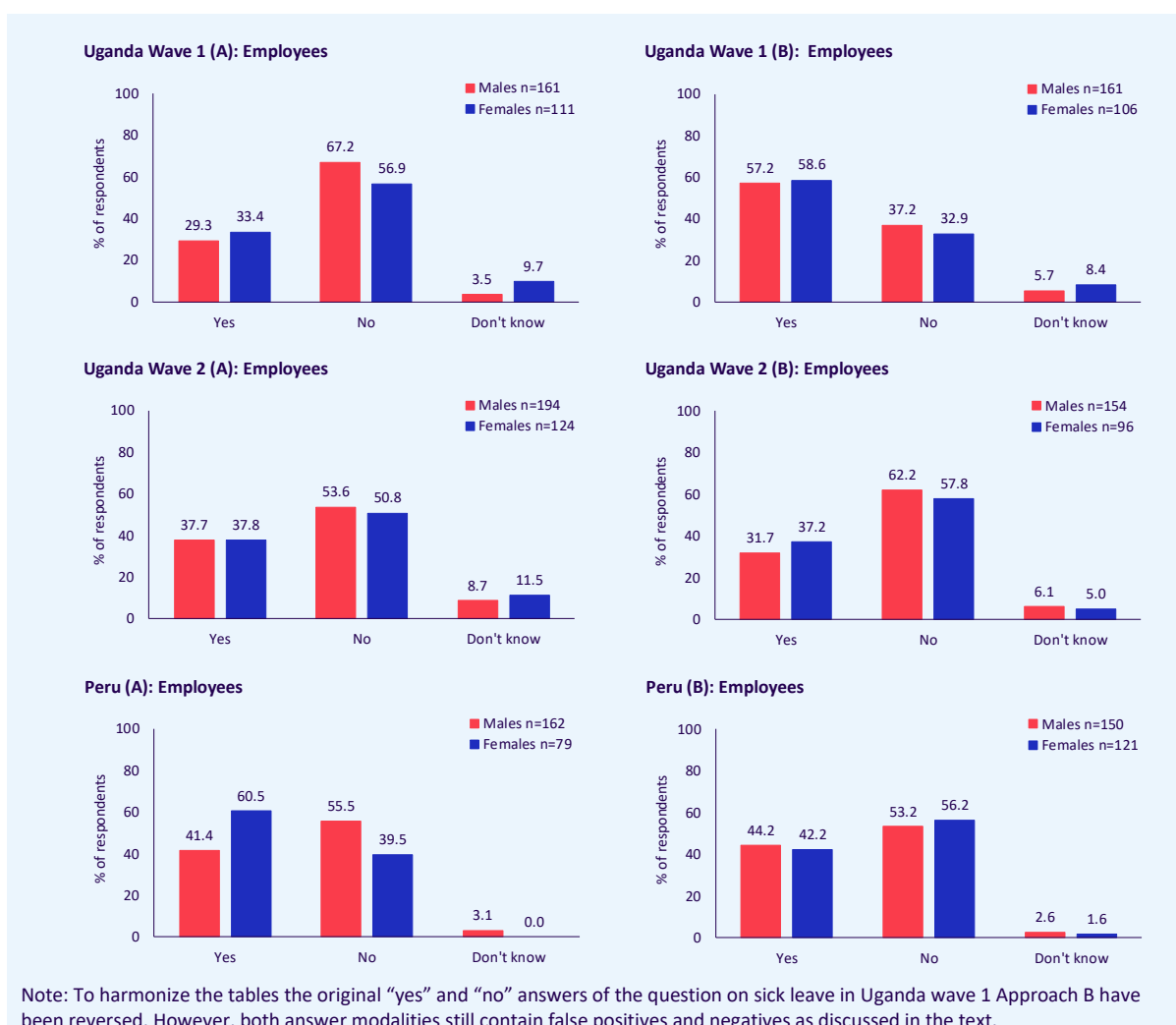
In addition, the different formulation used in Approach A and Approach B in Uganda Wave 1 also provided very different distributions of the responses for employees, with Approach B producing higher share of yes than approach A (see graphs on the top of [Figure 17](#)). As we can see, the distribution of answers between women and men were broadly similar in Uganda and in Peru Approach B. Some differences were instead observed for Peru Approach A.

Table 7. Distribution of responses to questions on paid sick leave for employees by country and survey round

	Paid sick leave							
	Yes	No	Don't know	Total	Yes	No	Don't know	Total
Uganda Wave 1: Approach (A+B)	Weighted counts				% Distribution			
Total	239	266	35	539	44.2	49.3	6.4	100.0
Uganda Wave 2: Approach (A+B)	Weighted counts				% Distribution			
Total	205	319	45	569	36.0	56.0	8.0	100.0
Peru: Approach (A+B)	Weighted counts				% Distribution			
Total	233	270	11	513	45.3	52.5	2.1	100.0

Note: To harmonize the tables the original “yes” and “no” answers of the question on sick leave in Uganda wave 1 Approach B have been reversed. However, both answer modalities still contain false positives and negatives as discussed in the text.

Figure 17. Distribution of responses to questions on paid sick leave for employees by country, survey round, type of approach and sex.



2.4.2 Paid annual leave

The question used for identifying access to **paid annual leave** was not found to be subject to any notable comprehension or reporting difficulties during cognitive testing and the term “paid annual leave” seemed to be well understood in general (see **Box A1.7** in Annex 1). The probing indicated some incidence among employees receiving some or all their remuneration in kind to answer “yes” as they continued to receive these payments, for example, meals, housing, also while on leave. While this is not conceptually problematic or wrong it would not indicate formality for this group, which underlines that paid annual leave as a criterion needs to be combined with other criteria such as access to paid sick leave.

In the quantitative tests in Uganda, 17 per cent of the employees in round 1 and 23 per cent in round 2 reported having access to paid annual leave (see **Table 8**). In comparison, this proportion was higher in Peru, where 36 per cent of the employees indicated having access.

Table 8. Distribution of responses to questions on paid annual leave for employees by country and survey round

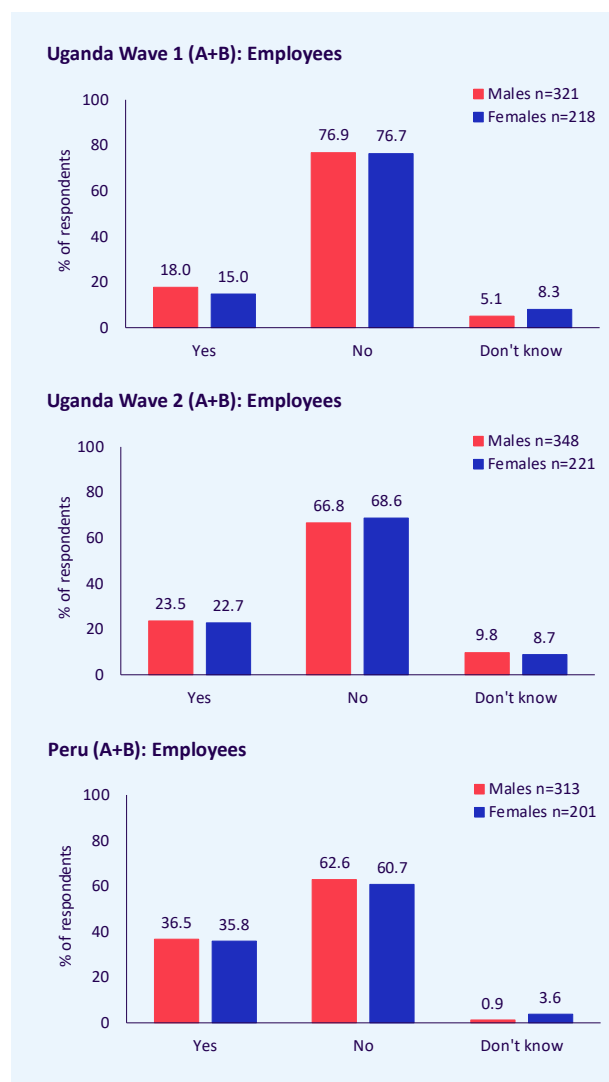
	Paid annual leave							
	Yes	No	Don't know	Total	Yes	No	Don't know	Total
Uganda Wave 1: Approach (A+B)	Weighted counts				% Distribution			
Total	90	414	35	539	16.7	76.8	6.4	100.0
Uganda Wave 2: Approach (A+B)	Weighted counts				% Distribution			
Total	132	384	53	569	23.2	67.5	9.4	100.0
Peru: Approach (A+B)	Weighted counts				% Distribution			
Total	186	318	10	513	36.2	61.8	2.0	100.0

Notably, across both rounds in Uganda and in Peru, the percentage of employees reporting access to paid annual leave remained lower than those who had access to paid sick leave. This could potentially be attributed to the findings from the cognitive interviews, which pointed towards the not infrequent occurrence of informal employees having access to informal paid sick leave but rarely in combination with paid annual leave. The proportion of employees unable to provide an answer and consequently responding "don't know" regarding paid annual leave is comparable to that of paid sick leave (six per cent in Uganda Round 1, nine per cent in Uganda Round 2, and two per cent in Peru).

In Uganda's first round and in Peru, more women than men indicated uncertainty about access to paid annual leave but still at a low prevalence (Uganda Round 1: five per cent males, eight per cent females; Peru: one per cent males, four per cent females) (see **Figure 18**).

In Uganda's second round, there appeared to be a slight increase in “don't know” reporting (10 per cent males and 9 per cent females) with no evident explanation given that the same questions were used in both cases (see also **Table A2. 11** in Annex 2).

Figure 18. Distribution of responses to questions on paid annual leave for employees by country, survey round and sex.



2.4.3 Effect of proxy answers on paid annual leave and sick leave

The higher share of those having access to paid sick leave as compared to paid annual leave can also be seen when comparing direct interviews and proxy interviews in the proxy-test subsamples. In both Uganda and Peru a higher share of employees reported access to paid sick leave both when the information is collected directly as well as by proxy (see **Figure 19**).

Like the question on payment of social contributions, the share of “don’t know” responses for paid sick leave and paid annual leave in both countries are very marginal (below two per cent) when the interview is conducted directly. In case of proxy responses, there is a decrease of those able to provide a valid answer (“yes” or “no”) and an increase of “don’t know” to a level of about 10 per cent in both countries and for both types of leave.

Figure 19. Distribution of responses to questions on paid sick leave (on the left) and paid annual leave (on the right) for employees, by country and type of response (direct or proxy)

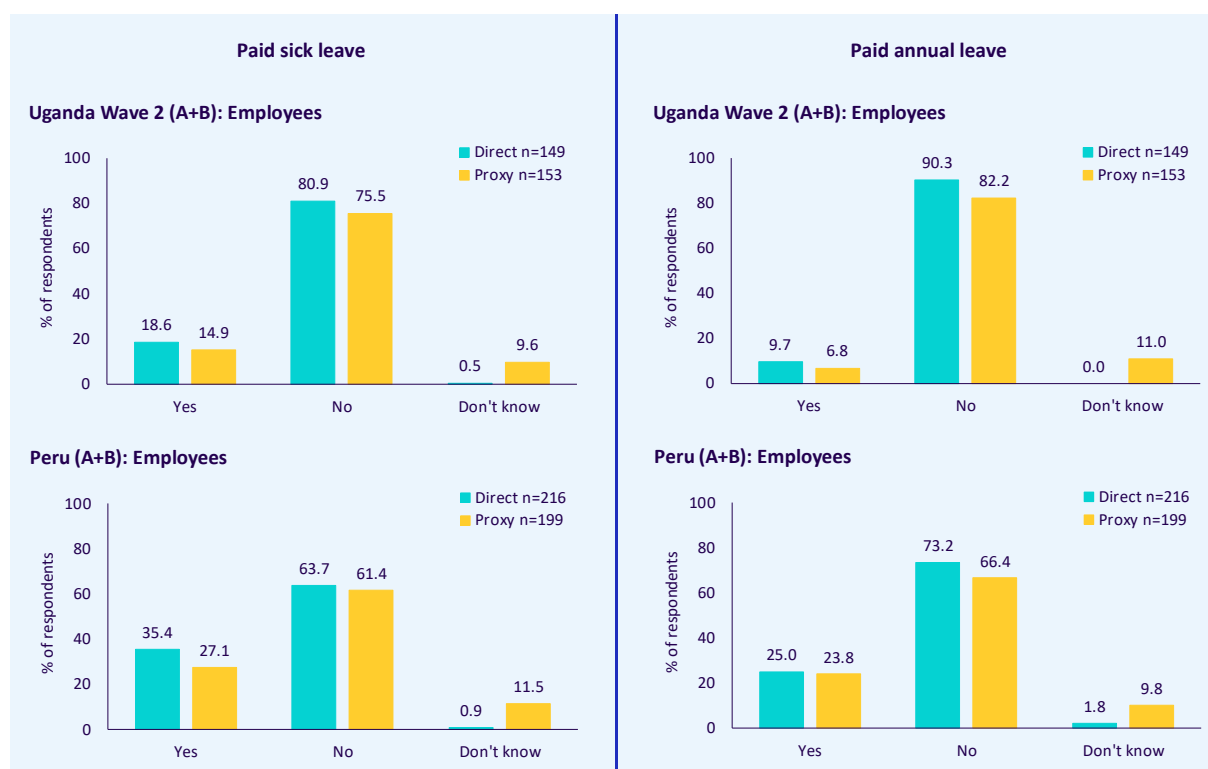


Figure 20 and **Figure 21** highlight the level of consistency between direct and proxy answers for paid sick leave and paid annual leave respectively and help to explain the differences in the marginal distributions highlighted by the figure above (see also **Table A3. 9** and **Table A3. 10** in Annex 3).

The level of consistency of responses seems to be lower than in the case of contribution to social insurance in both countries. In Uganda, the level of consistency of “yes” responses in relation to access to paid sick leave was 59 per cent, but 21 per cent of direct “yes” responses were misreported as “no” by proxy respondents, while a further 15 per cent were misreported as “don’t know”.

The level of consistency for those who directly responded “no” is higher (82 per cent), with four per cent misreported as “yes” (false positives), nine per cent reported as “don’t know” and four per cent not identified as employed by the proxy respondent. The same patterns were broadly repeated for the question on paid annual leave.

In Peru, in relation to paid sick leave, a similar result to Uganda was observed, with around 60 per cent consistency for those who directly answered “yes” to the question. Slightly higher consistency was observed for those who said “yes” to paid annual leave – being confirmed by nearly three quarters of proxy respondents (73 per cent).

For those who directly answered “no” to these questions in Peru, consistency was observed for 70 per cent for both paid sick and annual leave. The large source of inconsistency was misreporting that the respondent was not employed (16 per cent), rather than answering the questions on paid annual and sick leave differently.

Figure 20. Distribution of responses to paid sick leave question for employees, direct and proxy responses by country

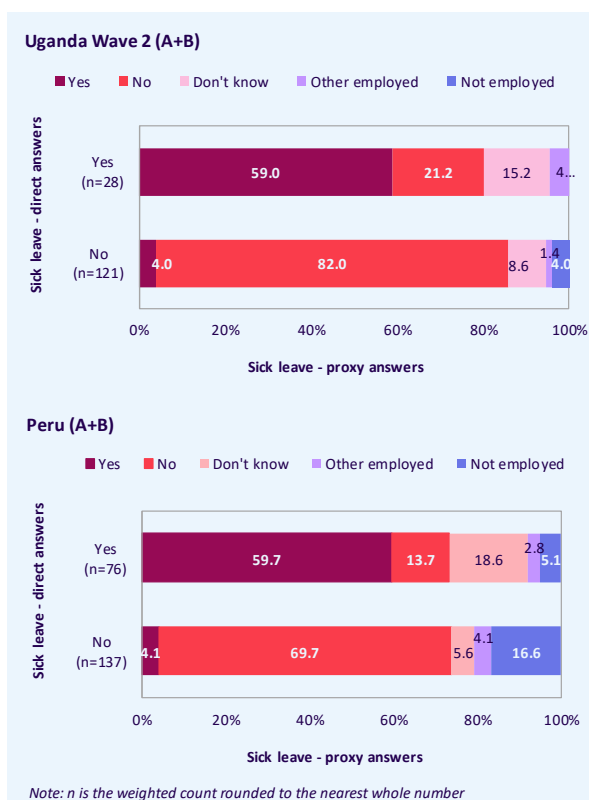
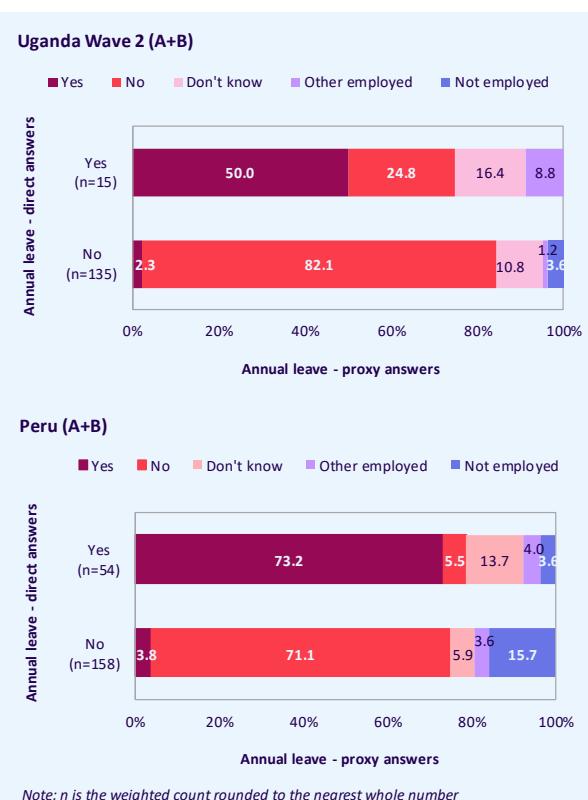


Figure 21. Distribution of responses to paid annual leave question for employees, direct and proxy responses by country



2.4.4 Paid sick leave and paid annual leave as recovery questions for job-related social insurance

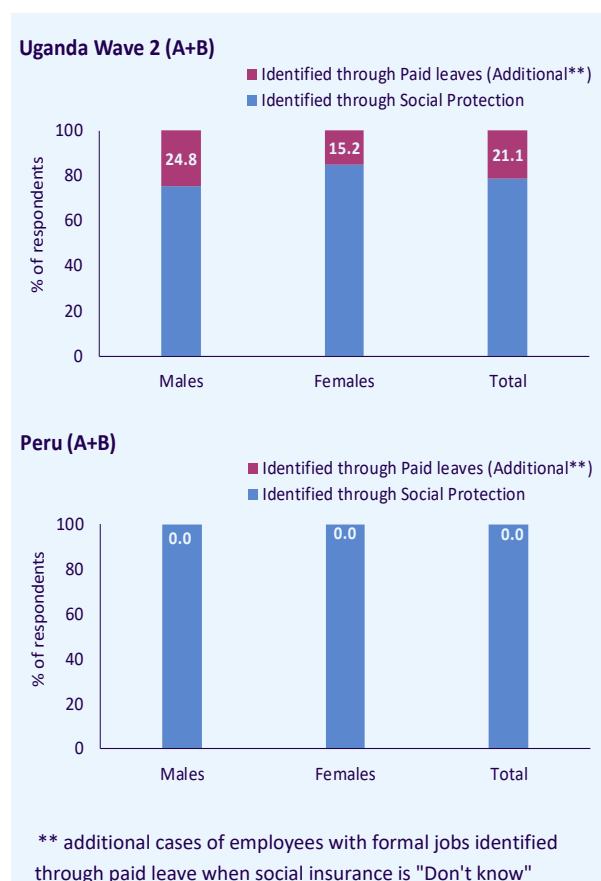
Information regarding employees' access to paid sick leave and paid annual leave is important in its own right to understand levels of effective protection among both formal and informal employees. Additionally, the information does form part of the identification of formal and informal jobs for employees as described earlier, i.e. when there is a lack of information regarding the prioritized criterion of employers' contribution to social insurance. In case this information is missing but the employee has access to paid sick leave and paid annual leave then there is a strong indication that the job is to be considered formal as there is evidence that the employer is complying with the labour laws in the country.

As can be seen in **Figure 22** using the two supporting criteria of paid annual leave and paid sick leave did not have any impact in the identification of formality in Peru as all employees with formal jobs can be identified on the basis of employer's contribution to social insurance. This is due to the very low share of "don't know" answers to the question on social insurance in Peru, (as previously discussed, see also **Table A2. 12** in Annex 2) for whom it would be relevant to use the two criteria of access to paid leave and sick leave to defining formal and informal jobs. However, in Uganda wave 2 the use of the two criteria of paid sick leave and paid annual leave was an important strategy to identify formal jobs among employees. Around one fifth (21 per cent) of all employees with formal jobs were cases where the response to the question on social contributions was "don't know" but the employee had access to both paid sick leave and paid annual leave. The two criteria seemed to have a greater importance among men than women as 25 per cent of the men with a formal job in Uganda wave 2 were recovered through the use of the two criteria while it was the case for 15 per cent of the women. Paid annual leave and paid sick leave thereby becomes an important strategy to deal with "don't know" answers and an important complement for the identification of formal and informal jobs among employees.

As already discussed above, the cognitive tests indicated that employees with clearly informal jobs still might have access to paid sick leave, as the employer might continue to pay the employee during short duration of sickness. However, this would rarely be combined with access to paid annual leave. This finding was supported by the results from the quantitative tests showing a higher share of employees having access to paid sick leave than paid annual leave - underlining the importance of combining the two criteria in order to identify the formal or informal status of the job. To identify the job held by the employee as formal only on the basis of access to paid sick leave could give a misleading result as it would classify clearly informal jobs as formal.

The questions used in the quantitative tests seemed to be effective in the case of direct interviews as evidenced by low shares of “don’t know” responses. Like other questions, in case of proxy interviewing the share of “don’t know” increases and some misclassifications might be introduced that in general have the tendency to shift jobs from formal to informal. Depending on the country and the share of “don’t know” answers in relation to the question on social insurance, the two criteria of access to paid sick leave and paid annual leave thus can become important for the identification of formal and informal jobs among employees and an essential strategy to deal with “don’t know” answers in relation to social insurance.

Figure 22. Employed by criteria used to identify them as having a formal job by country and sex.



▶ 3 Conclusions and recommendations

As a first overarching conclusion, the different stages of testing did allow an in-depth assessment of the questions used to identify informality in labour force surveys and broadly seems to confirm their suitability for use subject to careful wording as defined by the new standards concerning statistics on the informal economy, adaptation to reflect national systems and translation where relevant. This is ultimately the most important conclusion which can be drawn. Care is also warranted in the approach to managing proxy interviewing and it is generally recommended that efforts should be made to reduce proxy interviewing to the extent practical considering available resources (such as allowing for a limited number of revisits, making appointments, visiting at times convenient to the respondents etc.). However, this does not suggest proxy interviewing should necessarily be entirely avoided as it is an important strategy to improve efficiency of surveying and lower costs – relatively limited differences in the proportion of proxy interviews will have relatively limited impact on aggregate level results.

More specific conclusions are indicated below and are now reflected in published ILO model questionnaires.

Registration and bookkeeping are two essential criteria in distinguishing between the informal and formal sectors for both independent workers and dependent workers engaged in private enterprises or farming. For independent workers the two criteria also define the informal or formal status of their jobs thus making these two criteria essential for this group.

Based on the findings obtained from the cognitive and quantitative tests, it is concluded by the authors that registration and bookkeeping questions functioned effectively, particularly for independent workers, when direct interviewing is used. When proxy interviews are used, there is an increase in "don't know" responses, and some false positives and negatives are introduced, potentially impacting on aggregate level results on the formal status of the enterprises. The degree of false negatives and positives and hence the impact on determining the formal status differed between the two countries, being marginal in Uganda, while potentially more significant in Peru – possibly linked to the relatively greater prevalence of formality in that setting. This is taken to imply that in countries with very high prevalence of informality the questions functioned well to capture the informality of the enterprise, while in countries with a higher prevalence of formality, measurement may be more sensitive, particularly in the case of proxy response.

In contrast, for dependent workers, both registration and bookkeeping posed more challenges, especially when it came to proxy interviews. The criterion of bookkeeping exhibits indications of

quality issues, with relatively high occurrences of "don't know" responses and problems associated with false positives and negatives. This outcome can be partially attributed to the fact that, unlike independent workers, dependent workers face additional complexities, as the employee does not operate the enterprise in which they work.

However, the impact of these issues on dependent workers appears to be limited on aggregate level results on informal employment, since the criteria are used exclusively for categorizing the informal and formal sectors and not for defining informal and formal employment. On the other hand, it is crucial that the questions work effectively for independent workers, as they are used both for defining the informal and formal sector as well as for defining informal and formal employment.

Even though that the tests indicate that there are challenges with the criterion of bookkeeping, particular among dependent workers, the results also point to the potential importance of this criterion for certain groups, e.g. to highlight differences in the formality of businesses operated by women and men. In Uganda the results show that the criterion would be important to include as it identifies a significant share of dependent female workers in the formal sector. However, in Peru the impact of using the question is more marginal. The findings suggest that countries could carefully assess the value of including this criterion, especially for employees. If its usefulness is limited, meaning that it only marginally contributes to the identification of formal enterprises, it may be prudent to, for example, restrict the criterion to independent workers alone. However, great care should be taken to ensure that the differential impact between groups is taken into account in this assessment, and as a default the recommendation would be to include the criterion for all persons in employment working for a private enterprise or farms, unless evidence clearly shows it can be excluded without introducing important biases.

Furthermore, the findings highlight **the importance of applying alternative strategies to define the informal and formal sectors in cases where "don't know" responses are prevalent, particularly for employees.** The formal status of the employee's job becomes crucial information in this regard. The definition provided in the new resolution regarding statistics on the informal economy, which considers enterprises with formal employees as formal, introduces the possibility to apply more efficient questionnaire design, i.e. classifying the enterprise as formal if the employee has a formal job without having to ask additional questions on registration and bookkeeping. For example, this could mean that for a respondent who is an employee, and their employer pays social security contributions for them, this alone would be sufficient to identify that their employment is formal and the enterprise they work in is also formal. This aligns with the findings that indicate that the criteria used to determine the informal and formal status of the job can be more easily captured with high quality compared

to those used to determine the informal or formal status of the enterprise for employees (registration and bookkeeping).

The **new criterion on registration in relation to tax on profits** as a way to identify if **dependent contractors** are within the formal or informal sector was found to be effective in the cognitive tests as well as in the quantitative tests. In general, the respondents had a good comprehension of the question and respondents were able to provide valid answers when the interview was conducted directly. In common with other questions, when proxy interviews were conducted, there was an increase in the proportion of respondents unable to provide answers. Notably, while proxy interviews in Peru introduced some cases of misclassification, the level of consistency in Uganda was generally high, especially among those dependent contractors who were registered and thus categorized within the formal sector.

Job-related social insurance contribution is an essential criterion for defining informal and formal jobs for employees as it is a prioritized criterion in the resolution concerning statistics on the informal economy. In addition, it may, depending on the country, be part of defining informal and formal jobs for contributing family workers and dependent contractors. The question used in pilot surveys were concluded to work effectively when direct interviews were conducted. In the case of proxy interviewing, there is an increase in the frequency of respondents answering, "don't know.", reflecting the challenge for proxy respondents to answer the question on behalf of another person. Furthermore, there was some evidence suggesting that proxy interviews can result in potential misclassifications. In some instances, respondents in direct interviews reported that social insurance contributions were being made, while in the corresponding proxy interviews it was observed that either no contributions are being made or the proxy respondent was uncertain about the contributions. From the perspective of delineating job statuses as formal or informal, these findings point to a limited risk of misclassification of shifting some employees from a formal to an informal status.

Paid annual leave and paid sick leave are proposed to be two supplementary criteria to identify informal and formal jobs for employees. The proposal in the standards is that countries either can apply the criteria in case there is a lack of information regarding contribution to social insurance or alternatively, depending on country context if no contributions are made to social insurance or the criterion is not relevant in the country.

The cognitive tests indicated that access to paid sick leave can occur in clearly informal jobs when the employer continues to pay fully or partly in cash or in kind during, for example, short spells of sickness. This highlights the importance of not using access to paid sick leave on its own for determining the formal or informal status of the job - rather it needs to be combined

with a question on access to paid annual leave, as these informal employees would seldom have access to both. This affirms the proposed approach in the draft resolution.

Like the question regarding contributions to social insurance, the questions concerning paid sick leave and paid annual leave worked well in the quantitative tests, especially during direct interviews. When proxy interviews were used, there was an increase in the proportion of respondents unable to provide answers, and it generated some cases of misclassifications. These misclassifications, which were relatively more common than in the case of contributions to social insurance, primarily involved a shift from “no” to “don’t know,” which, in the context of defining formal and informal jobs for employees, would not impact the formal or informal status. However, there were also some instances where responses changed from “yes” to “no” and vice versa, which could potentially have an impact – shifting the status from formal to informal and the other way around. As such the risk of misclassifications, particularly due to proxy response should be considered in formulating the strategy for managing proxy interviewing.

Depending on the country, and the share of “don’t know” answers in relation to the question on employers’ contribution to social insurance, the two criteria can be essential for identifying formal and informal jobs in case there is insufficient information regarding social insurance contribution.

In general, when proxy interviews are used, several challenges emerge in collecting this information. There is a notable increase in the frequency of “don’t know” responses, and it introduces some level of inconsistency in the responses. These inconsistencies more commonly lead to persons moving from being recorded in the formal sector to the informal sector, and from formal jobs to informal jobs. Moreover, it may shift individuals from informal employment to categories such as unemployed or those outside the labour force. While there are occasional cases where the movement occurs in the opposite direction, the overall effect tends to some extent diminish the attachment to formal jobs within the formal sector.

It is essential to acknowledge that the impact of proxy interviews may vary between countries, as observed differences in the pilot studies of the two countries have shown. Additionally, the actual impact is directly linked to the overall share of proxy interviewing in a given country. Nonetheless, considering these findings, **countries are recommended to strive to manage the extent of the use of proxy interviewing, while recognizing its necessity in order to enable efficient survey operations to take place.**

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► Annex 1: Questions used in the pilot study

This annex illustrates the questions that have been used in the different countries, survey rounds and questionnaire approaches.

Box A1. 1 - Questions on business registration

Country and survey round	Approach	Question(s) and response options
Uganda Wave 1 Uganda Wave 2 Peru	Version A Version B	<p>MJL_REGI</p> <p><i>Asked to all employed self-declared as working in own business activity (MJJ_EMP_REL=2)</i></p> <p>Is (your/NAME's) business registered with [National Business Register] ?</p> <p><i>Asked to all employed self-declared as employees, trainees and AFM working in private businesses or farms (MJJ_EMP_REL=1,4,5 AND MJU_INS=2,3)</i></p> <p>Is the (business/farm) (you/NAME) (work/works) for registered with [National Business Register] ?</p> <p><i>Asked to all employed self-declared as « Helping in a family or household business » that do take decisions on own-family business/farm (MJJ_EMP_REL=3)</i></p> <p>Is the family business or farm registered with [National Business Register] ?</p> <p>1. YES 2. NO 97. DON'T KNOW</p>
Notes :		<p>The question was the same in all survey rounds and for both version A and B</p> <p>The question was asked in three slightly different ways depending on the respondents' profile</p> <p>The string (business/farm) depends on answers to the question on institutional sector</p> <p>In Uganda, the string [National Business Register] was substituted with [the Uganda Registration Services Bureau (URSB)]</p> <p>In Peru, the string [National Business Register] was substituted with Superintendencia Nacional de Registros Públicos (SUNARP)</p>

Box A1.2 - Questions on incorporation

Country and survey round	Approach	Question(s) and response options
Uganda Wave 1	Version A	<p>MJL_CORP</p> <p><i>Asked to all employed self-declared as working in own registered business activity (MJJ_EMP_REL=2 AND MJL_REGI=1)</i></p> <p>Is (your/NAME's) business registered as ?</p> <p><i>Asked to all employed self-declared as « Helping in a family or household business » that do take decisions on own-family registered business/farm, (MJJ_EMP_REL=3 AND MJJ_CFW_CHK=1,2 AND MJL_REGI=1)</i></p> <p>Is the (business/farm) (you/NAME) (work/works) for registered as ?</p> <p>READ AND MARK ALL THAT APPLY</p> <ol style="list-style-type: none"> 1. A limited company or partnership (i.e. incorporated enterprise) 2. Sole proprietor (i.e. not an incorporated enterprise) 3. OTHER (SPECIFY)
Uganda Wave 2	Version B	
Peru		
Notes :	<p>The question was the same in all survey rounds and for both version A and B</p> <p>The question was asked in two slightly different ways depending on the respondents' profile</p> <p>The string (business/farm) depends on answers to the question on institutional sector</p>	

Box A1.3 - Questions on keeping accounts (bookkeeping) for tax purposes

Country and survey round	Approach	Question(s) and response options
Uganda Wave 1 Uganda Wave 2 Peru	Version A Version B	<p>MIS_BOOK</p> <p><i>Asked to all employed self-declared as working in own registered business activity (MJJ_EMP_REL=2) and to all employed self-declared as « Helping in a family or household business » (MJJ_EMP_REL=3) and to all other employed working in private businesses or farms (MJU_INS=2,3))</i></p> <p>What kind of accounts or records does the (business/farm) keep?</p> <p>Are they...</p> <p>READ</p> <ol style="list-style-type: none"> 1. A complete set of written accounts for tax purposes 2. Simplified written accounts to be submitted for tax purposes 3. Simplified written accounts not for tax purposes 4. Informal records of orders, sales, purchases 5. No records are kept 97. DON'T KNOW
Notes :	<p>The question was the same in all survey rounds and for both version A and B</p> <p>The string (business/farm) depends on answers to the question on institutional sector</p>	

Box A1.4 - Questions on registration for tax on profits

Country and survey round	Approach	Question(s) and response options
Uganda Wave 1 Uganda Wave 2 Peru	Version A Version B	<p>MJL_TIN</p> <p><i>Asked to all employed</i></p> <p>Do (you/NAME) have a [Taxpayer Identification Number]?</p> <ol style="list-style-type: none"> 1. YES 2. NO 97. DON'T KNOW
Notes :	<p>The question was the same in all survey rounds and for both version A and B</p> <p>In Uganda, the string [Taxpayer Identification Number] was substituted with [TIN number (Taxpayer Identification Number)]</p>	

Box A1.5 - Questions on job-related social insurance

Country and survey round	Approach	Question(s) and response options
<p>Uganda Wave 1</p> <p>Uganda Wave 2</p> <p>Peru</p>	<p>Version A</p> <p>Version B</p>	<p>MIE_SOCPRO</p> <p><i>Asked to self-declared CFW and AFM receiving some form of payment different from tips (MJJ_EMP_REL=3,5 AND MJJ_REM_TYP= a,b,c,e,f,g,h)</i></p> <p>Are contributions paid to [the NSSF (National Social Security Fund)] for (you/NAME) for doing this work?</p> <p><i>Asked to self-declared employees and trainees (MJJ_EMP_REL= 1, 4)</i></p> <p>Does (your/NAME's) employer pay contributions to [the NSSF (National Social Security Fund)] for (you/NAME)?</p> <p>1. YES</p> <p>2. NO</p> <p>97. DON'T KNOW</p>
<p>Notes :</p>	<p>The question was the same in all survey rounds and for both version A and B</p> <p>The question was asked in two slightly different ways depending on the respondents' profile</p>	

Box A1.6 - Questions on paid sick leave

Country and survey round	Approach	Question(s) and response options
Uganda Wave 1	Version A	<p>MIE_PSCKLV</p> <p><i>Asked to self-declared employees and trainees (MJJ_EMP_REL= 1, 4) and to self-declared CFW and AFM receiving some form of payment different from tips (MJJ_EMP_REL=3,5 AND MJJ_REM_TYP= a,b,c,e,f,g,h)</i></p> <p>Would (you/NAME) get paid sick leave in case of illness or injury?</p> <p>1. YES 2. NO 97. DON'T KNOW</p>
	Version B	<p>MIE_PSCKLV</p> <p><i>Asked to self-declared employees and trainees (MJJ_EMP_REL= 1, 4) and to self-declared CFW and AFM receiving some form of payment different from tips (MJJ_EMP_REL=3,5 AND MJJ_REM_TYP= a,b,c,e,f,g,h)</i></p> <p>Would (you/NAME) lose pay if you could not work due to illness or injury?</p> <p>1. YES 2. NO 97. DON'T KNOW</p>
Uganda Wave 2 Peru	Version A	<p>MIE_PSCKLV</p> <p><i>Asked to self-declared employees and trainees (MJJ_EMP_REL= 1, 4) and to self-declared CFW and AFM receiving some form of payment different from tips (MJJ_EMP_REL=3,5 AND MJJ_REM_TYP= a,b,c,e,f,g,h)</i></p> <p>Would (you/NAME) get paid sick leave in case of illness or injury?</p> <p>1. YES 2. NO 97. DON'T KNOW</p>

	Version B	<p>MIE_PSCKLV</p> <p><i>Asked to self-declared employees and trainees (MJJ_EMP_REL= 1, 4) and to self-declared CFW and AFM receiving some form of payment different from tips (MJJ_EMP_REL=3,5 AND MJJ_REM_TYP= a,b,c,e,f,g,h)</i></p> <p>If (you/NAME) could not work due to illness or injury would (your/his/her) employer still pay (you/NAME) for those days (you/NAME) could not work?</p> <p>1. YES 2. NO 97. DON'T KNOW</p>
Notes :	<p>The question for version A was the same in all survey rounds</p> <p>Questions for version B were different in different survey rounds and different from version A.</p>	

Box A1.7 - Questions on paid annual leave

Country and survey round	Approach	Question(s) and response options
Uganda Wave 1	Version A	<p>MIE_PVACLV</p> <p><i>Asked to self-declared employees and trainees (MJJ_EMP_REL= 1, 4) and to self-declared CFW and AFM receiving some form of payment different from tips (MJJ_EMP_REL=3,5 AND MJJ_REM_TYP= a,b,c,e,f,g,h)</i></p> <p>Do/Does) (you/NAME) get paid annual leave?</p> <p>1. YES</p> <p>2. NO</p> <p>97. DON'T KNOW</p>
	Version B	
Uganda Wave 2	Version A	<p>MIE_PVACLV</p> <p><i>Asked to self-declared employees and trainees (MJJ_EMP_REL= 1, 4) and to self-declared CFW and AFM receiving some form of payment different from tips (MJJ_EMP_REL=3,5 AND MJJ_REM_TYP= a,b,c,e,f,g,h)</i></p> <p>Do/Does) (you/NAME) get paid annual leave?</p> <p>1. YES</p> <p>2. NO</p> <p>97. DON'T KNOW</p>
	Version B	
Peru	Version B	<p>MIE_PVACLV</p> <p><i>Asked to self-declared employees and trainees (MJJ_EMP_REL= 1, 4) and to self-declared CFW and AFM receiving some form of payment different from tips (MJJ_EMP_REL=3,5 AND MJJ_REM_TYP= a,b,c,e,f,g,h)</i></p> <p>If you took some days off work, would (your/their) employer pay (you/NAME) for those days?</p> <p>1. YES</p> <p>2. NO</p> <p>97. DON'T KNOW</p>
Notes :	<p>Questions for version A and B in Uganda wave 1 were the same, and identical to questions in version A of Uganda Wave 2 and Peru.</p> <p>The question for version B in Uganda Wave 2 and Peru was different from version A.</p>	

► Annex 2: Statistical tables and figures

Table A2. 1 Number and distribution of formal vs informal main jobs by ICSE18 status in employment, country, survey round and approach

	Employed						Employed			
	Total		Formal job		Informal job		Formal job		Informal job	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
Uganda Wave 1: Approach A	Weighted counts						% Distribution			
ICSE18: Employer	85	42	10	7	75	35	12.0	17.4	88.0	82.6
ICSE18: Independent worker without employees	207	217	7	5	200	212	3.2	2.1	96.8	97.9
ICSE18: Dependent contractor	161	69	0	0	161	69	0.0	0.0	100.0	100.0
ICSE18: Employee	161	111	30	18	131	94	18.7	15.8	81.3	84.2
ICSE18: Contributing family worker	23	34	0	0	23	34	0.0	0.0	100.0	100.0
Total Employed	637	473	47	30	590	443	7.4	6.3	92.6	93.7
Uganda Wave 1: Approach B	Weighted counts						% Distribution			
ICSE18: Employer	67	27	4	4	63	23	5.4	15.9	94.6	84.1
ICSE18: Independent worker without employees	234	221	1	1	233	220	0.4	0.4	99.6	99.6
ICSE18: Dependent contractor	102	52	0	0	102	52	0.0	0.0	100.0	100.0
ICSE18: Employee	161	106	24	12	137	95	14.8	11.1	85.2	88.9
ICSE18: Contributing family worker	27	34	0	0	27	34	0.0	0.0	100.0	100.0
Total Employed	591	441	28	17	563	424	4.8	3.9	95.2	96.1
Uganda Wave 2: Approach A	Weighted counts						% Distribution			
ICSE18: Employer	65	31	5	2	60	28	8.3	7.9	91.7	92.1
ICSE18: Independent worker without employees	278	244	1	2	277	242	0.4	0.9	99.6	99.1
ICSE18: Dependent contractor	118	51	0	0	118	51	0.0	0.0	100.0	100.0
ICSE18: Employee	194	124	22	10	172	114	11.4	8.4	88.6	91.6
ICSE18: Contributing family worker	16	32	0	0	16	32	0.0	0.0	100.0	100.0
Total Employed	671	483	29	15	643	468	4.3	3.1	95.7	96.9
Uganda Wave 2: Approach B	Weighted counts						% Distribution			
ICSE18: Employer	75	47	4	3	71	44	4.8	6.0	95.2	94.0
ICSE18: Independent worker without employees	222	242	7	5	215	237	3.1	2.1	96.9	97.9
ICSE18: Dependent contractor	155	87	0	0	155	87	0.0	0.0	100.0	100.0
ICSE18: Employee	154	96	33	23	122	73	21.0	23.7	79.0	76.3
ICSE18: Contributing family worker	12	17	0	0	12	17	0.0	0.0	100.0	100.0
Total Employed	618	489	43	31	575	458	7.0	6.3	93.0	93.7
Peru: Approach A	Weighted counts						% Distribution			
ICSE18: Employer	24	14	10	6	14	8	43.0	44.1	57.0	55.9
ICSE18: Independent worker without employees	132	129	16	17	116	113	11.9	12.9	88.1	87.1
ICSE18: Dependent contractor	51	31	1	1	50	30	2.0	3.6	98.0	96.4
ICSE18: Employee	162	79	77	41	85	38	47.4	51.6	52.6	48.4
ICSE18: Contributing family worker	12	24	0	0	12	24	0.0	0.0	100.0	100.0
Total Employed	382	277	104	65	278	213	27.3	23.4	72.7	76.6
Peru: Approach B	Weighted counts						% Distribution			
ICSE18: Employer	24	13	10	5	14	7	41.6	42.2	58.4	57.8
ICSE18: Independent worker without employees	137	122	23	12	114	110	16.5	9.7	83.5	90.3
ICSE18: Dependent contractor	33	25	0	0	33	25	0.0	0.0	100.0	100.0
ICSE18: Employee	150	121	69	51	82	70	45.7	42.1	54.3	57.9
ICSE18: Contributing family worker	15	22	0	0	15	22	0.0	0.0	100.0	100.0
Total Employed	359	303	101	68	258	235	28.2	22.5	71.8	77.5

Table A2. 2 Distribution of responses to questions relating to business registration by country, type of workers in employment (independent and dependent) and by sex

	Registration of own or employer's enterprises							
	Yes	No	Don't know	Total	Yes	No	Don't know	Total
Uganda Wave 1: Approach (A+B)								
	Weighted counts				% Distribution			
Total	110	1475	82	1666	6.6	88.5	4.9	100.0
Males	72	802	50	925	7.8	86.8	5.4	100.0
Females	38	672	32	742	5.1	90.7	4.3	100.0
Independent	35	1037	29	1101	3.1	94.2	2.6	100.0
Males	20	552	21	594	3.4	93.0	3.5	100.0
Females	14	485	8	507	2.8	95.7	1.5	100.0
Dependent	75	437	53	566	13.3	77.3	9.4	100.0
Males	52	250	29	331	15.6	75.5	8.8	100.0
Females	23	187	24	235	10.0	79.8	10.2	100.0
Uganda Wave 2: Approach (A+B)								
	Weighted counts				% Distribution			
Total	91	1499	102	1692	5.4	88.6	6.0	100.0
Males	56	819	66	941	6.0	87.0	7.0	100.0
Females	35	680	36	751	4.7	90.5	4.8	100.0
Independent	26	1130	48	1204	2.2	93.8	4.0	100.0
Males	15	592	33	640	2.3	92.5	5.2	100.0
Females	12	538	15	564	2.1	95.3	2.6	100.0
Dependent	65	369	54	488	13.3	75.7	11.0	100.0
Males	41	227	33	301	13.7	75.4	10.8	100.0
Females	23	142	21	187	12.5	76.1	11.4	100.0
Peru: Approach (A+B)								
	Weighted counts				% Distribution			
Total	309	697	80	1085	28.4	64.2	7.3	100.0
Males	200	380	43	623	32.1	61.0	6.9	100.0
Females	109	317	37	463	23.5	68.5	8.0	100.0
Independent	98	492	5	595	16.4	82.7	0.9	100.0
Males	57	256	3	317	18.2	80.9	1.0	100.0
Females	40	236	2	278	14.4	84.8	0.8	100.0
Dependent	211	205	75	491	43.0	41.8	15.2	100.0
Males	142	124	40	306	46.5	40.5	13.0	100.0
Females	69	81	35	184	37.2	44.0	18.9	100.0

Table A2.3 Distribution of responses to questions relating to bookkeeping for tax purposes by country, type of workers in employment (independent and dependent) and by sex

	Book keeping for tax purposes								
	Yes	No	Don't know	Total	Yes	No	Don't know	Total	
Uganda Wave 1: Approach (A+B)		Weighted counts				% Distribution			
Total	76	1373	95	1544	4.9	88.9	6.2	100.0	
Males	45	767	59	872	5.2	88.0	6.8	100.0	
Females	30	606	36	672	4.5	90.1	5.3	100.0	
Independent	14	1052	35	1101	1.3	95.6	3.2	100.0	
Males	7	563	23	594	1.2	94.9	3.9	100.0	
Females	7	489	12	507	1.3	96.4	2.3	100.0	
Dependent	62	321	61	444	13.9	72.4	13.6	100.0	
Males	38	204	36	278	13.7	73.3	13.1	100.0	
Females	24	117	24	165	14.3	71.0	14.6	100.0	
Uganda Wave 2: Approach (A+B)		Weighted counts				% Distribution			
Total	52	1486	154	1692	3.1	87.8	9.1	100.0	
Males	32	806	103	941	3.4	85.7	10.9	100.0	
Females	20	680	51	751	2.7	90.5	6.8	100.0	
Independent	11	1126	67	1204	0.9	93.5	5.6	100.0	
Males	7	586	48	640	1.1	91.5	7.4	100.0	
Females	4	541	19	564	0.7	95.9	3.5	100.0	
Dependent	41	360	86	488	8.5	73.8	17.7	100.0	
Males	25	221	55	301	8.3	73.4	18.3	100.0	
Females	16	139	31	187	8.8	74.5	16.7	100.0	
Peru: Approach (A+B)		Weighted counts				% Distribution			
Total	174	727	181	1082	16.1	67.2	16.7	100.0	
Males	112	397	112	621	18.1	63.9	18.0	100.0	
Females	62	331	69	462	13.4	71.7	14.9	100.0	
Independent	37	547	11	595	6.2	91.9	1.9	100.0	
Males	20	290	7	317	6.4	91.5	2.1	100.0	
Females	16	257	5	278	5.9	92.4	1.7	100.0	
Dependent	137	181	169	488	28.2	37.1	34.7	100.0	
Males	92	107	105	304	30.3	35.1	34.6	100.0	
Females	45	74	64	183	24.7	40.3	35.0	100.0	

Figure A2. 1 - Distribution of responses on bookkeeping practices of the enterprise for independent workers (to the left) and dependent workers (to the right) by country, survey round and sex.

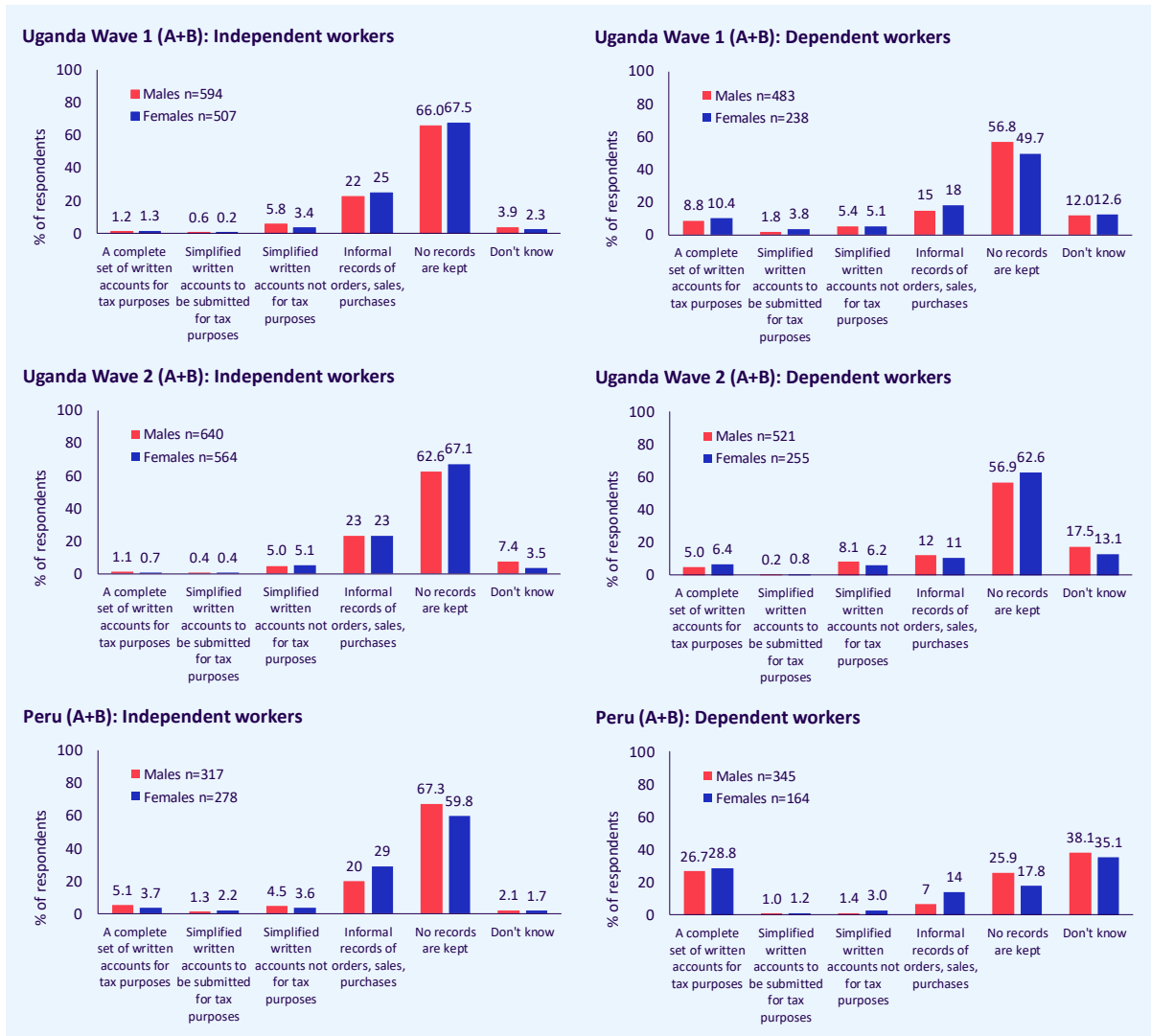


Table A2. 4 Independent and dependent employed by criteria used to identify them as being in the formal sector by country, survey round and sex

	Employed in the formal sector identified through registration and bookkeeping					
	Identified through Registration	Identified through Bookkeeping (additional**)	Total	Identified through Registration	Identified through Bookkeeping (additional**)	Total
Uganda Wave 1: Approach (A+B)	Weighted counts			% Distribution		
Total	109	20	129	84.3	15.7	100.0
Males	71	9	81	88.4	11.6	100.0
Females	38	11	49	77.5	22.5	100.0
Independent	35	4	39	89.8	10.2	100.0
Males	20	1	21	95.4	4.6	100.0
Females	14	3	17	82.8	17.2	100.0
Dependent	74	16	91	82.0	18.0	100.0
Males	51	8	59	85.9	14.1	100.0
Females	23	8	31	74.7	25.3	100.0
Uganda Wave 2: Approach (A+B)	Weighted counts			% Distribution		
Total	91	14	106	86.3	13.7	100.0
Males	56	7	63	89.1	10.9	100.0
Females	35	8	43	82.1	17.9	100.0
Independent	26	3	30	89.2	10.8	100.0
Males	15	2	17	87.0	13.0	100.0
Females	12	1	13	92.3	7.7	100.0
Dependent	65	11	76	85.1	14.9	100.0
Males	41	5	46	89.9	10.1	100.0
Females	23	7	30	77.9	22.1	100.0
Peru: Approach (A+B)	Weighted counts			% Distribution		
Total	309	16	325	94.9	5.1	100.0
Males	200	10	210	95.1	4.9	100.0
Females	109	6	115	94.7	5.3	100.0
Independent	98	1	99	98.9	1.1	100.0
Males	57	1	59	98.1	1.9	100.0
Females	40	0	40	100.0	0.0	100.0
Dependent	211	15	226	93.2	6.8	100.0
Males	142	9	152	93.9	6.1	100.0
Females	69	6	75	91.8	8.2	100.0

** additional cases of employed in the formal sector identified through bookkeeping when registration is "No" or "Don't know"

Table A2. 5 Distribution of responses to questions on job and tax registration for Dependent contractors (independent path) by country, survey round, approach and sex

	Job and tax registration for Dependent contractors (independent path)							
	Yes	No	Don't know	Total	Yes	No	Don't know	Total
Uganda Wave 1								
Approach A+B								
	Weighted counts				% Distribution			
Total	5	344	34	383	1.4	89.8	8.8	100.0
Males	3	232	27	262	1.3	88.5	10.2	100.0
Females	2	112	7	121	1.7	92.5	5.8	100.0
Approach A								
	Weighted counts				% Distribution			
Total	3	211	16	229	1.2	91.8	7.0	100.0
Males	2	143	15	161	1.2	89.3	9.5	100.0
Females	1	67	1	69	1.2	97.5	1.3	100.0
Approach B								
	Weighted counts				% Distribution			
Total	3	133	18	154	1.8	86.8	11.4	100.0
Males	2	89	11	102	1.5	87.2	11.2	100.0
Females	1	44	6	52	2.4	85.8	11.8	100.0
Uganda Wave 2								
Approach A+B								
	Weighted counts				% Distribution			
Total	6	392	12	410	1.4	95.6	3.0	100.0
Males	6	257	10	273	2.2	94.1	3.8	100.0
Females	0	135	2	137	0.0	98.6	1.4	100.0
Approach A								
	Weighted counts				% Distribution			
Total	2	160	6	169	1.4	94.8	3.8	100.0
Males	2	110	5	118	2.0	93.4	4.6	100.0
Females	0	50	1	51	0.0	98.0	2.0	100.0
Approach B								
	Weighted counts				% Distribution			
Total	4	232	6	241	1.5	96.1	2.4	100.0
Males	4	146	5	155	2.3	94.6	3.1	100.0
Females	0	86	1	87	0.0	98.9	1.1	100.0
Peru								
Approach A+B								
	Weighted counts				% Distribution			
Total	24	115	1	140	17.1	82.2	0.7	100.0
Males	16	67	1	84	19.4	79.4	1.2	100.0
Females	8	48	0	56	13.7	86.3	0.0	100.0
Approach A								
	Weighted counts				% Distribution			
Total	9	71	1	82	11.3	87.5	1.2	100.0
Males	6	43	1	51	12.4	85.6	2.0	100.0
Females	3	28	0	31	9.5	90.5	0.0	100.0
Approach B								
	Weighted counts				% Distribution			
Total	15	44	0	58	25.3	74.7	0.0	100.0
Males	10	23	0	33	30.0	70.0	0.0	100.0
Females	5	20	0	25	19.0	81.0	0.0	100.0

Table A2.6 Distribution of responses to questions on job related social insurance for Employees by country, survey round, approach and sex

	Job related social insurance for Employees							
	Yes	No	Don't know	Total	Yes	No	Don't know	Total
Uganda Wave 1								
Approach A+B								
	Weighted counts				% Distribution			
Total	82	399	59	539	15.2	73.9	10.9	100.0
Males	53	239	30	321	16.4	74.3	9.4	100.0
Females	29	160	28	218	13.5	73.4	13.1	100.0
Approach A								
	Weighted counts				% Distribution			
Total	47	199	27	272	17.1	73.0	9.9	100.0
Males	29	118	14	161	18.0	73.3	8.7	100.0
Females	18	81	13	111	15.8	72.4	11.8	100.0
Approach B								
	Weighted counts				% Distribution			
Total	36	200	31	267	13.3	74.9	11.8	100.0
Males	24	121	16	161	14.8	75.2	10.1	100.0
Females	12	79	15	106	11.1	74.4	14.4	100.0
Uganda Wave 2								
Approach A+B								
	Weighted counts				% Distribution			
Total	69	418	82	569	12.2	73.4	14.4	100.0
Males	41	253	54	348	11.8	72.6	15.6	100.0
Females	28	165	28	221	12.8	74.7	12.5	100.0
Approach A								
	Weighted counts				% Distribution			
Total	22	243	53	318	6.9	76.5	16.6	100.0
Males	15	145	34	194	7.6	75.0	17.4	100.0
Females	7	98	19	124	5.9	78.7	15.3	100.0
Approach B								
	Weighted counts				% Distribution			
Total	47	174	29	250	18.8	69.6	11.6	100.0
Males	26	108	20	154	17.1	69.7	13.3	100.0
Females	21	67	9	96	21.7	69.4	8.9	100.0
Peru								
Approach A+B								
	Weighted counts				% Distribution			
Total	238	272	4	513	46.3	53.0	0.8	100.0
Males	146	165	2	313	46.5	52.8	0.6	100.0
Females	92	107	2	201	45.9	53.2	1.0	100.0
Approach A								
	Weighted counts				% Distribution			
Total	118	121	3	242	48.8	50.1	1.2	100.0
Males	77	84	2	162	47.4	51.5	1.2	100.0
Females	41	37	1	79	51.6	47.2	1.2	100.0
Approach B								
	Weighted counts				% Distribution			
Total	120	151	1	272	44.1	55.6	0.4	100.0
Males	69	82	0	150	45.7	54.3	0.0	100.0
Females	51	69	1	121	42.1	57.1	0.8	100.0

Table A2. 7 Distribution of responses to questions on job-related social insurance for Dependent contractors (dependent path) by country, survey round, approach and sex

	Job related social insurance for Dependent contractors (dependent path)							
	Yes	No	Don't know	Total	Yes	No	Don't know	Total
Uganda Wave 1								
Approach A+B								
	Weighted counts				% Distribution			
Total	0	270	22	292	0.0	92.5	7.5	100.0
Males	0	197	17	214	0.0	91.9	8.1	100.0
Females	0	73	4	78	0.0	94.2	5.8	100.0
Approach A								
	Weighted counts				% Distribution			
Total	0	162	8	171	0.0	95.1	4.9	100.0
Males	0	120	8	128	0.0	94.0	6.0	100.0
Females	0	42	1	43	0.0	98.2	1.8	100.0
Approach B								
	Weighted counts				% Distribution			
Total	0	107	13	121	0.0	88.9	11.1	100.0
Males	0	77	10	86	0.0	88.8	11.2	100.0
Females	0	31	4	34	0.0	89.2	10.8	100.0
Uganda Wave 2								
Approach A+B								
	Weighted counts				% Distribution			
Total	0	372	16	388	0.0	95.9	4.1	100.0
Males	0	243	15	258	0.0	94.3	5.7	100.0
Females	0	129	1	130	0.0	99.3	0.7	100.0
Approach A								
	Weighted counts				% Distribution			
Total	0	149	9	158	0.0	94.6	5.4	100.0
Males	0	104	9	112	0.0	92.4	7.6	100.0
Females	0	45	0	45	0.0	100.0	0.0	100.0
Approach B								
	Weighted counts				% Distribution			
Total	0	223	7	230	0.0	96.8	3.2	100.0
Males	0	140	6	146	0.0	95.7	4.3	100.0
Females	0	83	1	84	0.0	98.8	1.2	100.0
Peru								
Approach A+B								
	Weighted counts				% Distribution			
Total	0	106	2	108	0.0	98.1	1.9	100.0
Males	0	68	1	69	0.0	98.4	1.6	100.0
Females	0	38	1	39	0.0	97.4	2.6	100.0
Approach A								
	Weighted counts				% Distribution			
Total	0	66	1	67	0.0	98.4	1.6	100.0
Males	0	43	1	44	0.0	97.5	2.5	100.0
Females	0	23	0	23	0.0	100.0	0.0	100.0
Approach B								
	Weighted counts				% Distribution			
Total	0	40	1	41	0.0	97.5	2.5	100.0
Males	0	26	0	26	0.0	100.0	0.0	100.0
Females	0	15	1	16	0.0	93.5	6.5	100.0

Table A2. 8 Distribution of responses to questions on job-related social insurance for Contributing family workers by country, survey round, approach and sex

	Job related social insurance for Contributing family workers							
	Yes	No	Don't know	Total	Yes	No	Don't know	Total
Uganda Wave 1								
Approach A+B	Weighted counts				% Distribution			
Total	0	110	2	111	0.0	98.4	1.6	100.0
Males	0	45	2	47	0.0	96.1	3.9	100.0
Females	0	65	0	65	0.0	100.0	0.0	100.0
Approach A	Weighted counts				% Distribution			
Total	0	52	0	52	0.0	100.0	0.0	100.0
Males	0	21	0	21	0.0	100.0	0.0	100.0
Females	0	31	0	31	0.0	100.0	0.0	100.0
Approach B	Weighted counts				% Distribution			
Total	0	58	2	59	0.0	96.9	3.1	100.0
Males	0	23	2	25	0.0	92.7	7.3	100.0
Females	0	34	0	34	0.0	100.0	0.0	100.0
Uganda Wave 2								
Approach A+B	Weighted counts				% Distribution			
Total	0	73	2	75	0.0	97.3	2.7	100.0
Males	0	26	1	27	0.0	96.1	3.9	100.0
Females	0	47	1	48	0.0	98.0	2.0	100.0
Approach A	Weighted counts				% Distribution			
Total	0	48	0	48	0.0	100.0	0.0	100.0
Males	0	16	0	16	0.0	100.0	0.0	100.0
Females	0	32	0	32	0.0	100.0	0.0	100.0
Approach B	Weighted counts				% Distribution			
Total	0	25	2	27	0.0	92.4	7.6	100.0
Males	0	10	1	11	0.0	90.3	9.7	100.0
Females	0	15	1	16	0.0	93.8	6.2	100.0
Peru								
Approach A+B	Weighted counts				% Distribution			
Total	0	54	2	56	0.0	96.4	3.6	100.0
Males	0	21	0	21	0.0	100.0	0.0	100.0
Females	0	32	2	34	0.0	94.2	5.8	100.0
Approach A	Weighted counts				% Distribution			
Total	0	23	2	25	0.0	91.9	8.1	100.0
Males	0	9	0	9	0.0	100.0	0.0	100.0
Females	0	14	2	16	0.0	87.6	12.4	100.0
Approach B	Weighted counts				% Distribution			
Total	0	31	0	31	0.0	100.0	0.0	100.0
Males	0	13	0	13	0.0	100.0	0.0	100.0
Females	0	18	0	18	0.0	100.0	0.0	100.0

Table A2. 9 Distribution of responses to questions on job-related social insurance for Dependent contractors (independent path) by country, survey round, approach and sex

	Job related social insurance for Dependent contractors (independent path)							
	Yes	No	Don't know	Total	Yes	No	Don't know	Total
Uganda Wave 1								
Approach A+B	Weighted counts				% Distribution			
Total	0	91	1	91	0.0	99.2	0.8	100.0
Males	0	48	1	48	0.0	98.5	1.5	100.0
Females	0	43	0	43	0.0	100.0	0.0	100.0
Approach A	Weighted counts				% Distribution			
Total	0	59	0	59	0.0	100.0	0.0	100.0
Males	0	33	0	33	0.0	100.0	0.0	100.0
Females	0	26	0	26	0.0	100.0	0.0	100.0
Approach B	Weighted counts				% Distribution			
Total	0	32	1	33	0.0	97.8	2.2	100.0
Males	0	15	1	15	0.0	95.3	4.7	100.0
Females	0	17	0	17	0.0	100.0	0.0	100.0
Uganda Wave 2								
Approach A+B	Weighted counts				% Distribution			
Total	0	22	0	22	0.0	100.0	0.0	100.0
Males	0	15	0	15	0.0	100.0	0.0	100.0
Females	0	8	0	8	0.0	100.0	0.0	100.0
Approach A	Weighted counts				% Distribution			
Total	0	11	0	11	0.0	100.0	0.0	100.0
Males	0	6	0	6	0.0	100.0	0.0	100.0
Females	0	5	0	5	0.0	100.0	0.0	100.0
Approach B	Weighted counts				% Distribution			
Total	0	11	0	11	0.0	100.0	0.0	100.0
Males	0	9	0	9	0.0	100.0	0.0	100.0
Females	0	2	0	2	0.0	100.0	0.0	100.0
Peru								
Approach A+B	Weighted counts				% Distribution			
Total	1	31	0	31	3.0	97.0	0.0	100.0
Males	0	14	0	14	0.0	100.0	0.0	100.0
Females	1	16	0	17	5.4	94.6	0.0	100.0
Approach A	Weighted counts				% Distribution			
Total	0	15	0	15	0.0	100.0	0.0	100.0
Males	0	7	0	7	0.0	100.0	0.0	100.0
Females	0	8	0	8	0.0	100.0	0.0	100.0
Approach B	Weighted counts				% Distribution			
Total	1	16	0	17	5.5	94.5	0.0	100.0
Males	0	7	0	7	0.0	100.0	0.0	100.0
Females	1	8	0	9	9.9	90.1	0.0	100.0

Table A2. 10 Distribution of responses to questions on paid sick leave for employees by country by sex, country and survey round

	Paid sick leave							
	Yes	No	Don't know	Total	Yes	No	Don't know	Total
Uganda Wave 1								
Approach A+B								
	Weighted counts				% Distribution			
Total	239	266	35	539	44.2	49.3	6.4	100.0
Males	139	168	15	321	43.2	52.2	4.6	100.0
Females	100	98	20	218	45.7	45.2	9.1	100.0
Approach A								
	Weighted counts				% Distribution			
Total	84	171	17	272	31.0	63.0	6.1	100.0
Males	47	108	6	161	29.3	67.2	3.5	100.0
Females	37	63	11	111	33.4	56.9	9.7	100.0
Approach B								
	Weighted counts				% Distribution			
Total	154	95	18	267	35.5	57.8	6.8	100.0
Males	92	60	9	161	57.2	37.2	5.7	100.0
Females	62	35	9	106	58.6	32.9	8.4	100.0
Uganda Wave 2								
Approach A+B								
	Weighted counts				% Distribution			
Total	205	319	45	569	36.0	56.0	8.0	100.0
Males	122	200	26	348	35.0	57.4	7.5	100.0
Females	83	119	19	221	37.5	53.8	8.6	100.0
Approach A								
	Weighted counts				% Distribution			
Total	120	167	31	318	37.7	52.5	9.8	100.0
Males	73	104	17	194	37.7	53.6	8.7	100.0
Females	47	63	14	124	37.8	50.8	11.5	100.0
Approach B								
	Weighted counts				% Distribution			
Total	85	152	14	250	33.8	60.5	5.7	100.0
Males	49	96	9	154	31.7	62.2	6.1	100.0
Females	36	56	5	96	37.2	57.8	5.0	100.0
Peru								
Approach A+B								
	Weighted counts				% Distribution			
Total	233	270	11	513	45.3	52.5	2.1	100.0
Males	134	170	9	313	42.7	54.4	2.8	100.0
Females	99	100	2	201	49.4	49.6	1.0	100.0
Approach A								
	Weighted counts				% Distribution			
Total	115	122	5	242	47.7	50.3	2.1	100.0
Males	67	90	5	162	41.4	55.5	3.1	100.0
Females	48	31	0	79	60.5	39.5	0.0	100.0
Approach B								
	Weighted counts				% Distribution			
Total	118	148	6	272	43.3	54.5	2.2	100.0
Males	66	80	4	150	44.2	53.2	2.6	100.0
Females	51	68	2	121	42.2	56.2	1.6	100.0

Note: To harmonize the tables the original “yes” and “no” answers of the question on sick leave in Uganda wave 1 Approach B have been reversed. However, both answer modalities still contain false positives and negatives as discussed in the text.

Table A2. 11 Distribution of responses to questions on paid annual leave for employees by country by sex, country and survey round

	Paid annual leave							
	Yes	No	Don't know	Total	Yes	No	Don't know	Total
Uganda Wave 1								
Approach A+B	Weighted counts				% Distribution			
Total	90	414	35	539	16.7	76.8	6.4	100.0
Males	58	247	16	321	18.0	76.9	5.1	100.0
Females	33	167	18	218	15.0	76.7	8.3	100.0
Approach A	Weighted counts				% Distribution			
Total	46	208	19	272	16.7	76.2	7.1	100.0
Males	27	126	7	161	17.1	78.4	4.5	100.0
Females	18	81	12	111	16.2	73.0	10.8	100.0
Approach B	Weighted counts				% Distribution			
Total	45	207	15	267	16.8	77.5	5.7	100.0
Males	30	121	9	161	18.8	75.4	5.7	100.0
Females	15	86	6	106	13.6	80.6	5.8	100.0
Uganda Wave 2								
Approach A+B	Weighted counts				% Distribution			
Total	132	384	53	569	23.2	67.5	9.4	100.0
Males	82	232	34	348	23.5	66.8	9.8	100.0
Females	50	151	19	221	22.7	68.6	8.7	100.0
Approach A	Weighted counts				% Distribution			
Total	60	221	38	318	18.7	69.4	11.9	100.0
Males	41	129	23	194	21.3	66.6	12.1	100.0
Females	18	92	14	124	14.7	73.7	11.6	100.0
Approach B	Weighted counts				% Distribution			
Total	72	163	15	250	28.8	65.0	6.2	100.0
Males	40	103	11	154	26.2	66.9	6.9	100.0
Females	32	60	5	96	33.0	62.0	5.0	100.0
Peru								
Approach A+B	Weighted counts				% Distribution			
Total	186	318	10	513	36.2	61.8	2.0	100.0
Males	114	196	3	313	36.5	62.6	0.9	100.0
Females	72	122	7	201	35.8	60.7	3.6	100.0
Approach A	Weighted counts				% Distribution			
Total	91	146	4	242	37.8	60.6	1.7	100.0
Males	55	106	1	162	34.2	65.3	0.6	100.0
Females	36	40	3	79	45.2	50.9	3.9	100.0
Approach B	Weighted counts				% Distribution			
Total	95	171	6	272	34.8	63.0	2.2	100.0
Males	59	90	2	150	39.0	59.7	1.3	100.0
Females	36	81	4	121	29.6	67.0	3.3	100.0

Table A2. 12 - Employees by criteria used to identify them as having a formal job by country, survey round and sex

	Employees identified as having a formal jobs through social insurance and paid leaves						
	Answered "Yes" to social insurance (a)	Answered "Don't know" to social insurance		Total (d)	Answered "Yes" to social insurance (a/d)	Recovered through paid leaves (c/d)	Total
		Total (b)	Recovered through paid leaves (c)				
Uganda Wave 2							
Approach A+B	Weighted counts				% Distribution		
Total	69	82	19	88	78.9	21.1	100.0
Males	41	54	14	55	75.2	24.8	100.0
Females	28	28	5	33	84.8	15.2	100.0
Approach A	Weighted counts				% Distribution		
Total	22	53	10	32	68.0	32.0	100.0
Males	15	34	7	22	66.7	33.3	100.0
Females	7	19	3	10	70.6	29.4	100.0
Approach B	Weighted counts				% Distribution		
Total	47	29	8	55	85.3	14.7	100.0
Males	26	20	6	33	81.0	19.0	100.0
Females	21	9	2	23	91.3	8.7	100.0
Peru							
Approach A+B	Weighted counts				% Distribution		
Total	238	4	0	238	100.0	0.0	100.0
Males	146	2	0	146	100.0	0.0	100.0
Females	92	2	0	92	100.0	0.0	100.0
Approach A	Weighted counts				% Distribution		
Total	118	3	0	118	100.0	0.0	100.0
Males	77	2	0	77	100.0	0.0	100.0
Females	41	1	0	41	100.0	0.0	100.0
Approach B	Weighted counts				% Distribution		
Total	120	1	0	120	100.0	0.0	100.0
Males	69	0	0	69	100.0	0.0	100.0
Females	51	1	0	51	100.0	0.0	100.0

** additional cases of employees with formal jobs identified through paid leaves when social insurance is "Don't know"

► Annex 3: Proxy test

Tables in this annex show the marginal and joint distributions of proxy and direct answers observed on the subsamples involved in the specific proxy test in Uganda Wave 2 and Peru.

The Box below provides some context to allow proper interpretation of the results taking as example **Table A3. 1** for Uganda wave 2.

Box A3. 1 - How to read the tables showing the marginal and conditional effect of proxy answers

The first part of the table **Table A3. 2**, i.e. the two blocks on the left in blue, shows the weighted joint distribution (counts) obtained cross-classifying the answers to the question on registration obtained using direct responses (rows) and the answers obtained using proxy responses (columns).

For example, in Uganda it is possible to see that - out of 159 who participated in the explicit proxy test and were asked the question on registration – when the answers are provided by direct respondents, 8 answers were “yes”, 150 “no” and 1 “don’t know” (see last column of the blue part of the table). The 8 cases correspond to 4.8% of the total, while the share of “no” and “don’t know” are respectively 94.7% and 0.6% (see last column to the right in turquoise that contains the % marginal distribution of the direct answers).

When proxy answers are used, the cases of consistent answers are on the diagonal of the blue part and are highlighted in bold red. For example, for the “yes” category the consistency is observed for 7 out of 8 cases (or 86% of the total - see the block of green cells with percent conditional distributions of proxy answers given specific categories of direct answers). For the “no” category the consistency is observed for 121 cases out of 150 (80.2%).

Regarding inconsistent answers, the table shows also that in 10 cases out of the 150 independent workers that responded “no”, when interviewed directly (corresponding to a share of 6.6%) proxy respondents responded instead “don’t know”.

Moreover, the table shows that when proxy responses are used, a certain number of independent employed persons could be classified as dependent employed (4 cases) or even as not in employment (15 cases). On the other hand, in one case, a respondent that was not classified as employed with a direct response was instead identified as independent worker by the proxy responses and the answer to registration was « Don’t know ». These misclassifications have impacts on the marginal distributions of the direct and proxy answers, for example they brought the number of “don’t know” from 1 for direct answers to 11 (10+1)

for proxy answers.

In an ideal world the outcome would be complete (or almost complete) consistency at the individual level between the proxy and direct answers. This would indicate minimal possibility of misclassifications at the individual level, and by extension minimal expected impact on aggregate level results. The results of the dedicated proxy effect test ultimately suggest that this cannot be assumed to be the case with differing results depending on the questions involved. For example, proxy respondents are more likely to report don't know to some key questions but for the most part the additional don't knows come from cases where the direct respondent said 'no'. Due to the way the questionnaire and variable derivations are designed this type of misreport has no impact on aggregate results as 'no' and 'don't know' are treated in the same way meaning the greater concern would be a 'no' or 'don't know' instead of a 'yes'. However, in other cases misreporting did impact classifications at the individual and aggregate level more substantially.

Table A3. 3 - Consistency of direct and proxy answers to question on business registration for independent workers, by country

Uganda Wave 2 (A+B)				Registration of own business/farm - Proxy Answers (weighted counts)				Other employed	Not employed	Total direct answers	Registration of own business/farm - Proxy Answers (% distribution)				Other employed	Not employed	Total direct answers	Total direct answers % distrib.	
Employed independent path				Employed independent path							Employed independent path								
Yes	No	Don't know	Total	Yes	No	Don't know	Total				Yes	No	Don't know	Total					
Registration of own business/farm - Direct Answers	Employed independent path	Yes	7	1			8				8	86.3	13.7		100.0			100.0	4.8
		No	1	121	10	131		4	15	150	0.5	80.2	6.6	87.3	2.7	10.0	100.0	94.7	
		Don't know			1	1				1		100.0		100.0			100.0	0.6	
		Total		7	123	10	140		4	15	159	4.6	77.2	6.2	87.9	2.5	9.5	100.0	100.0
		Other employed			3	3													
		Not employed			2	1	3												
	Total proxy answers		7	127	11	145						5.0	87.5	7.5	100.0				
Peru (A+B)				Registration of own business/farm - Proxy Answers (weighted counts)				Other employed	Not employed	Total direct answers	Registration of own business/farm - Proxy Answers (% distribution)				Other employed	Not employed	Total direct answers	Total direct answers % distrib.	
Employed independent path				Employed independent path							Employed independent path								
Yes	No	Don't know	Total	Yes	No	Don't know	Total				Yes	No	Don't know	Total					
Registration of own business/farm - Direct Answers	Employed independent path	Yes	10	7	1	18		3		21	48.8	31.4	5.4	85.7	14.3		100.0	15.4	
		No	1	82	9	92		5	16	113	0.9	73.0	7.8	81.7	4.5	13.9	100.0	83.9	
		Don't know							1	1					100.0	100.0		0.7	
		Total		11	89	10	110		8	17	135	8.3	66.1	7.4	81.7	6.0	12.3	100.0	100.0
		Other employed			8	1	9												
		Not employed			3	3													
	Total proxy answers		11	99	11	122						9.1	81.7	9.2	100.0				

Table A3. 4 - Consistency of direct and proxy answers to question on business registration for dependent workers, by country

Uganda Wave 2 (A+B)				Registration of employer's business/farm - Proxy Answers (weighted counts)				Other employed	Not employed	Total direct answers	Registration of employer's business/farm - Proxy Answers (% distribution)				Other employed	Not employed	Total direct answers	Total direct answers % distrib.	
Employed dependent path				Employed dependent path							Employed dependent path								
Yes	No	Don't know	Total	Yes	No	Don't know	Total				Yes	No	Don't know	Total					
Registration of employer's business/farm - Direct Answers	Employed dependent path	Yes	3	2	4	10		0	0	10	33.2	22.7	44.1	100.0			100.0	14.3	
		No	2	41	7	50		7	0	57	2.7	71.8	13.1	87.7	12.3		100.0	81.1	
		Don't know	0	0	3	3		0	0	3			100.0	100.0			100.0	4.6	
		Total		5	43	15	63		7	0	70	6.9	61.5	21.6	90.0	10.0		100.0	100.0
		Other employed			0	6	0	6											
		Not employed			0	7	0	7											
	Total proxy answers		5	56	15	76						6.4	73.8	19.8	100.0				
Peru (A+B)				Registration of employer's business/farm - Proxy Answers (weighted counts)				Other employed	Not employed	Total direct answers	Registration of employer's business/farm - Proxy Answers (% distribution)				Other employed	Not employed	Total direct answers	Total direct answers % distrib.	
Employed dependent path				Employed dependent path							Employed dependent path								
Yes	No	Don't know	Total	Yes	No	Don't know	Total				Yes	No	Don't know	Total					
Registration of employer's business/farm - Direct Answers	Employed dependent path	Yes	33	11	22	67		5	3	75	44.8	14.8	29.6	89.3	6.7	4.0	100.0	47.9	
		No	2	33	7	42		9	11	61	3.1	54.0	11.0	68.1	14.5	17.4	100.0	39.6	
		Don't know	1	6	6	14		2	4	19	6.1	31.5	31.9	69.5	9.6	20.8	100.0	12.5	
		Total		37	51	35	122		16	18	156	23.5	32.4	22.5	78.4	10.2	11.4	100.0	100.0
		Other employed			4	4	3	11											
		Not employed			0	7	3	10											
	Total proxy answers		41	62	41	144						28.4	43.1	28.5	100.0				

Table A3. 5 - Consistency of direct and proxy answers to question on bookkeeping for independent workers, by country

Uganda Wave 2 (A+B)		Book keeping of own business/farm - Proxy Answers (weighted counts)				Other employed	Not employed	Total direct answers	Book keeping of own business/farm - Proxy Answers (% distribution)				Other employed	Not employed	Total direct answers	Total direct answers % distrib.	
		Employed independent path							Employed independent path								
		Yes	No	Don't know	Total				Yes	No	Don't know	Total					
Book keeping of own business/farm - Direct Answers	Employed independent path	Yes	0	1	0	1	0	0	1	100.0				100.0	0.7		
		No	1	111	25	137	4	15	156	0.5	71.2	16.1	87.7	2.6	9.7	100.0	98.3
		Don't know	0	2	0	2	0	0	2		100.0					100.0	1.0
		Total	1	114	25	140	4	15	159	0.5	71.6	15.8	87.9	2.5	9.5	100.0	100.0
	Other employed		0	3	0	3											
	Not employed		0	3	0	3											
	Total proxy answers		1	119	25	145				0.6	82.2	17.3	100.0				
Peru (A+B)		Book keeping of own business/farm - Proxy Answers (weighted counts)				Other employed	Not employed	Total direct answers	Book keeping of own business/farm - Proxy Answers (% distribution)				Other employed	Not employed	Total direct answers	Total direct answers % distrib.	
		Employed independent path							Employed independent path								
		Yes	No	Don't know	Total				Yes	No	Don't know	Total					
Book keeping of own business/farm - Direct Answers	Employed independent path	Yes	2	1	2	5	2	0	7	27.6	11.5	31.6	70.8	29.2		100.0	5.2
		No	0	81	24	105	6	17	127		63.5	18.9	82.3	4.7	13.0	100.0	94.8
		Don't know															0.0
		Total	2	82	26	110	8	17	135	1.4	60.7	19.5	81.7	6.0	12.3	100.0	100.0
	Other employed		1	8	0	9											
	Not employed		0	3	0	3											
	Total proxy answers		3	92	26	122				2.6	75.8	21.6	100.0				

Table A3. 6 - Consistency of direct and proxy answers to question on bookkeeping for dependent workers, by country

Uganda Wave 2 (A+B)		Book keeping of employer's business/farm - Proxy Answers (weighted counts)				Other employed	Not employed	Total direct answers	Book keeping of employer's business/farm - Proxy Answers (% distribution)				Other employed	Not employed	Total direct answers	Total direct answers % distrib.	
		Employed dependent path							Employed dependent path								
		Yes	No	Don't know	Total				Yes	No	Don't know	Total					
Book keeping of employer's business/farm - Direct Answers	Employed dependent path	Yes	3	0	3	6	0	0	6	46.0		54.0	100.0			100.0	8.5
		No	0	34	19	53	7	0	60		57.2	31.1	88.3	11.7		100.0	85.4
		Don't know	0	2	2	4	0	0	4			56.3	43.7	100.0			6.0
		Total	3	37	24	63	7	0	70	3.9	52.3	33.8	90.0	10.0		100.0	100.0
	Other employed		0	3	3	6											
	Not employed		1	6	0	7											
	Total proxy answers		4	46	27	76				4.9	59.6	35.5	100.0				
Peru (A+B)		Book keeping of employer's business/farm - Proxy Answers (weighted counts)				Other employed	Not employed	Total direct answers	Book keeping of employer's business/farm - Proxy Answers (% distribution)				Other employed	Not employed	Total direct answers	Total direct answers % distrib.	
		Employed dependent path							Employed dependent path								
		Yes	No	Don't know	Total				Yes	No	Don't know	Total					
Book keeping of employer's business/farm - Direct Answers	Employed dependent path	Yes	18	1	29	48	2	4	54	33.9	1.9	53.0	88.8	3.8	7.3	100.0	34.7
		No	1	21	11	33	7	9	48	2.1	44.1	22.1	68.3	13.5	18.3	100.0	31.1
		Don't know	4	4	33	41	7	5	53	7.3	7.4	62.4	77.1	13.5	9.4	100.0	34.2
		Total	23	26	73	122	16	18	156	14.9	16.9	46.6	78.4	10.2	11.4	100.0	100.0
	Other employed		2	5	4	11											
	Not employed		0	7	3	10											
	Total proxy answers		25	39	80	144				17.6	26.9	55.5	100.0				

Table A3. 7 - Consistency of direct and proxy answers to question relating to dependent contractors having a TIN or RUC number by country

Uganda Wave 2 (A+B)		Registered with a TIN number - Proxy Answers (weighted counts)				Other employed	Not employed	Total direct answers	Registered with a TIN number - Proxy Answers (% distribution)				Other employed	Not employed	Total direct answers	Total direct answers % distrib.
		Dependent contractors							Yes	No	Don't know	Total				
		Yes	No	Don't know	Total											
Registered with a TIN number - Direct Answers	Dependent contractors	Yes				3		3				100.0			100.0	4.1
		No	46	6	52	2	5	59	77.6	11.0	88.6	3.2	8.2	100.0	95.9	
		Don't know														
		Total	0	46	6	52	4	5	61	74.4	10.6	85.0	7.2	7.9	100.0	100.0
	Other employed		3		3											
	Not employed		1		1											
	Total proxy answers		50	6	56				88.4	11.6	100.0					

Peru (A+B)		Registered with a RUC number - Proxy Answers (weighted counts)				Other employed	Not employed	Total direct answers	Registered with a RUC number - Proxy Answers (% distribution)				Other employed	Not employed	Total direct answers	Total direct answers % distrib.
		Dependent contractors							Yes	No	Don't know	Total				
		Yes	No	Don't know	Total											
Registered with a RUC number - Direct Answers	Dependent contractors	Yes	2	1	3	1	2	6	34.4	17.0	51.4	17.6	31.0	100.0	16.2	
		No		16	3	19	7	5	31	50.7	10.0	60.7	23.3	16.0	100.0	83.8
		Don't know														
		Total	2	17	3	22	8	7	37	5.6	45.2	8.4	59.2	22.3	18.5	100.0
	Other employed		2	5	5	12										
	Not employed		2		2											
	Total proxy answers		4	24	8	36			11.2	66.1	22.8	100.0				

Table A3. 8 - Consistency of direct and proxy answers to question on job related social insurance for dependent workers.

Uganda Wave 2 (A+B)		Social protection - Proxy Answers (weighted counts)				Other employed	Not employed	Total direct answers	Social protection - Proxy Answers (% distribution)				Other employed	Not employed	Total direct answers	Total direct answers % distrib.	
		Path dependent							Yes	No	Don't know	Total					
		Yes	No	Don't know	Total												
Social protection - Direct Answers	Path dependent	Yes	6		4	10	0	0	10	61.5		38.5			100.0	6.5	
		No	1	108	21	130	3	5	138	0.8	78.2	15.4	94.4	2.1	3.5	100.0	92.3
		Don't know			2	2	0	0	2			100.0			100.0	1.2	
		Total	7	108	27	141	3	5	149	4.7	72.1	17.9	94.8	2.0	3.2	100.0	100.0
	Other employed		0	4	0	4											
	Not employed		0	8	0	8											
	Total proxy answers		7	120	27	153			4.6	78.0	17.4	100.0					

Peru (A+B)		Social protection - Proxy Answers (weighted counts)				Other employed	Not employed	Total direct answers	Social protection - Proxy Answers (% distribution)				Other employed	Not employed	Total direct answers	Total direct answers % distrib.	
		Path dependent							Yes	No	Don't know	Total					
		Yes	No	Don't know	Total												
Social protection - Direct Answers	Path dependent	Yes	59	9	3	71	2	2	75	78.7	11.5	4.2	94.4	2.9	2.7	100.0	34.8
		No	2	97	7	105	6	25	136	1.5	71.1	5.1	77.7	4.1	18.2	100.0	62.9
		Don't know			5	5	0		5			100.0			100.0	2.3	
		Total	61	110	10	181	8	27	216	28.4	51.0	4.6	84.0	3.6	12.4	100.0	100.0
	Other employed		1	6	0	7											
	Not employed		1	10	0	11											
	Total proxy answers		63	126	10	199			31.7	63.3	5.0	100.0					

Table A3. 9 - Consistency of direct and proxy answers to question on paid sick leave for employees by country.

Uganda Wave 2 (A+B)		Paid sick leaves - Proxy Answers (weighted counts)				Other employed	Not employed	Total direct answers	Paid sick leaves - Proxy Answers (% distribution)				Other employed	Not employed	Total direct answers	Total direct answers % distrib.	
		Employees							Employees								
		Yes	No	Don't know	Total				Yes	No	Don't know	Total					
Paid sick leaves - Direct Answers	Employees	Yes	16	6	4	26	1		28	59.0	21.2	15.2	95.4	4.6	0.0	100.0	18.6
		No	5	99	10	114	2	5	121	4.0	82.0	8.6	94.6	1.4	4.0	100.0	80.9
		Don't know	1	0	0	1			1	100.0			100.0			100.0	0.5
		Total	22	105	15	141	3	5	149	14.6	70.3	9.8	94.8	2.0	3.2	100.0	100.0
	Other employed	1	3	0	4												
	Not employed	0	8	0	8												
Total proxy answers		23	116	15	153				14.9	75.5	9.6	100.0					

Peru (A+B)		Paid sick leaves - Proxy Answers (weighted counts)				Other employed	Not employed	Total direct answers	Paid sick leaves - Proxy Answers (% distribution)				Other employed	Not employed	Total direct answers	Total direct answers % distrib.	
		Employees							Employees								
		Yes	No	Don't know	Total				Yes	No	Don't know	Total					
Paid sick leaves - Direct Answers	Employees	Yes	46	10	14	70	2	4	76	59.7	13.7	18.6	92.0	2.8	5.1	100.0	35.4
		No	6	96	8	109	6	23	137	4.1	69.7	5.6	79.3	4.1	16.6	100.0	63.7
		Don't know	1	0	1	2	0	0	2	47.2		52.8	100.0			100.0	0.9
		Total	52	106	23	181	8	27	216	24.2	49.2	10.6	84.0	3.6	12.4	100.0	100.0
	Other employed	0	2	0	2												
	Not employed	2	14	0	16												
Total proxy answers		54	122	23	199				27.1	61.4	11.5	100.0					

Table A3. 10 - Consistency of direct and proxy answers to question on paid annual leave for employees by country.

Uganda Wave 2 (A+B)		Paid annual leaves - Proxy Answers (weighted counts)				Other employed	Not employed	Total direct answers	Paid annual leaves - Proxy Answers (% distribution)				Other employed	Not employed	Total direct answers	Total direct answers % distrib.	
		Employees							Employees								
		Yes	No	Don't know	Total				Yes	No	Don't know	Total					
Paid annual leaves - Direct Answers	Employees	Yes	7	4	2	13	1	0	15	50.0	24.8	16.4	91.2	8.8	0.0	100.0	9.7
		No	3	110	15	128	2	5	135	2.3	82.1	10.8	95.2	1.2	3.6	100.0	90.3
		Don't know	0	0	0	0	0	0	0							100.0	0.0
		Total	10	114	17	141	3	5	149	7.0	76.5	11.3	94.8	2.0	3.2	100.0	100.0
	Other employed	0	4	0	4												
	Not employed	0	8	0	8												
Total proxy answers		10	126	17	153				6.8	82.2	11.0	100.0					

Peru (A+B)		Paid annual leaves - Proxy Answers (weighted counts)				Other employed	Not employed	Total direct answers	Paid annual leaves - Proxy Answers (% distribution)				Other employed	Not employed	Total direct answers	Total direct answers % distrib.	
		Employees							Employees								
		Yes	No	Don't know	Total				Yes	No	Don't know	Total					
Paid annual leaves - Direct Answers	Employees	Yes	39	3	7	50	2	2	54	73.2	5.5	13.7	92.3	4.0	3.6	100.0	25.0
		No	6	112	9	127	6	25	158	3.8	71.1	5.9	80.8	3.6	15.7	100.0	73.2
		Don't know	0	1	3	4			4		26.0	74.0	100.0			100.0	1.8
		Total	45	116	20	181	8	27	216	21.1	53.9	9.1	84.0	3.6	12.4	100.0	100.0
	Other employed	1	6	0	7												
	Not employed	1	10	0	11												
Total proxy answers		47	132	20	199				23.8	66.4	9.8	100.0					