International Labour Organization

4 STATISTICAL METHODOLOGY SERIES

MEASURING EMPLOYMENT IN LABOUR FORCE SURVEYS

Main findings from the ILO LFS pilot studies

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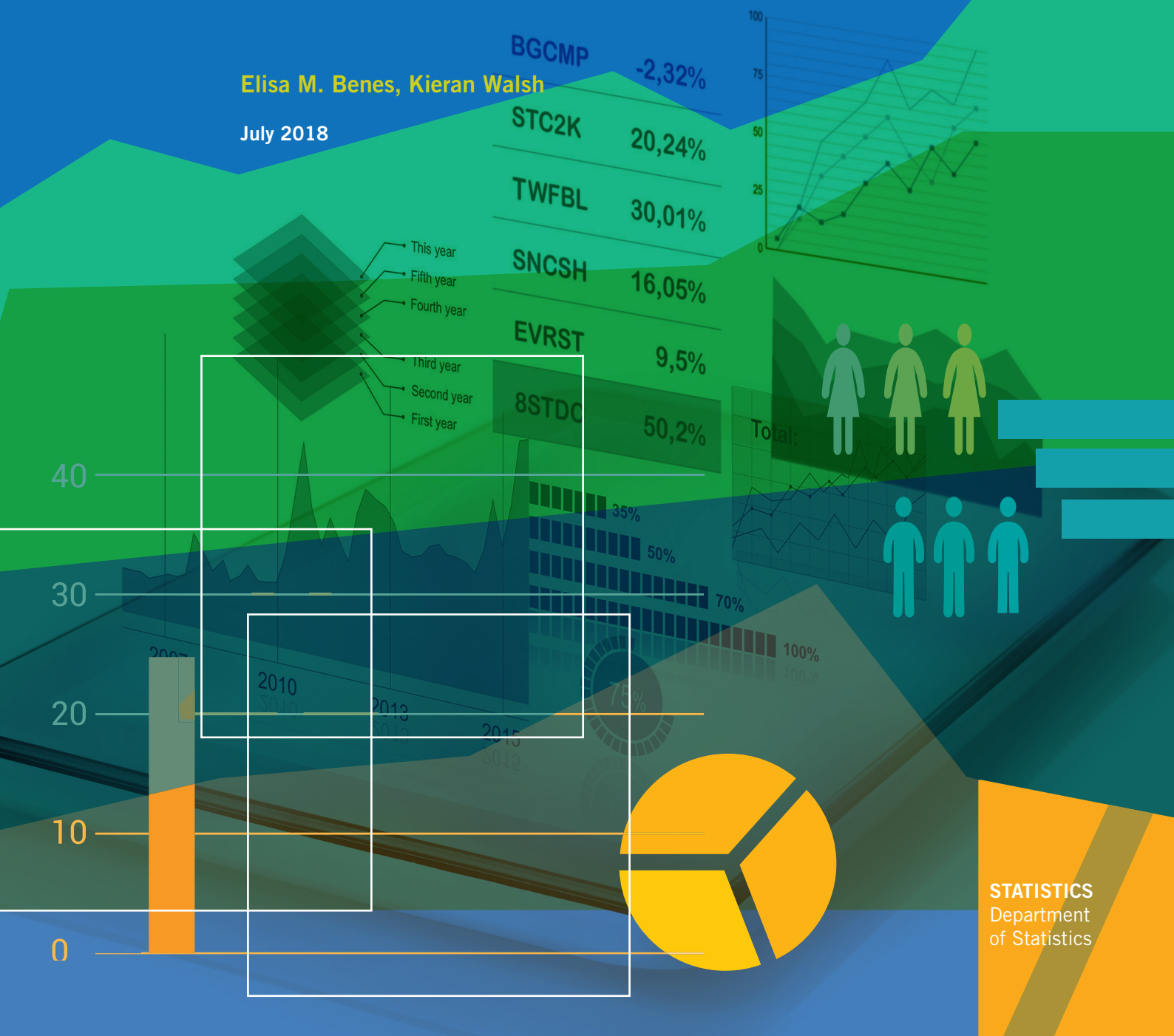

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Measuring Employment in Labour Force Surveys:

Main findings from the ILO LFS pilot studies[1]

ILO Department of Statistics –Geneva, Switzerland

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Measuring employment in labour force surveys: Main findings from the ILO LFS pilot studies

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ACRONYMS

ICLS	International Conference of Labour Statisticians
LFS	Labour Force Surveys
CI	Cognitive interviewing
CMR	Cameroon
ECU	Ecuador
CIV	Ivory Coast
KGZ	Kyrgyzstan
MDA	Moldova
NAM	Namibia
PER	Peru
PHL	Philippines
TUN	Tunisia
VNM	Vietnam

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I. BACKGROUND

1. The latest international recommendations on how to measure some of the key headline labour market indicators, including the labour force participation rate, employment-to-population ratio and unemployment rate, are contained in the *Resolution I concerning statistics of work, employment and labour underutilization* adopted in 2013 by the 19th International Conference of Labour Statisticians (ICLS). These standards introduced a number of important advances that will impact the way work and labour force statistics are collected and disseminated by countries around the world in the years to come. To support their wide implementation, the 19th ICLS called on the ILO to *"conduct further conceptual and methodological work including testing"* and develop *"technical manuals and model data collection instruments"* aligned with the latest standards (ILO, 2013a).

2. As follow-up, in 2015, the ILO launched a global project of labour force survey (LFS) pilot studies. The Project had as main aim to develop and test alternative survey questionnaires to collect statistics on high priority topics such as employment, labour underutilization (comprising time-related underemployment, unemployment and the potential labour force), and own-use production work, in line with the 19th ICLS standards. The ultimate objective is to develop evidence-based guidance on LFS questionnaire design to support countries in adopting the new standards.

3. This report, presents the main findings on the measurement of **employment** drawn from the ILO LFS pilot study project. The report is part of the ILO statistical methodology series that describe in detail the findings of the Project. The full series is available in the website of the ILO Department of Statistics (ILO, 2018)[2].

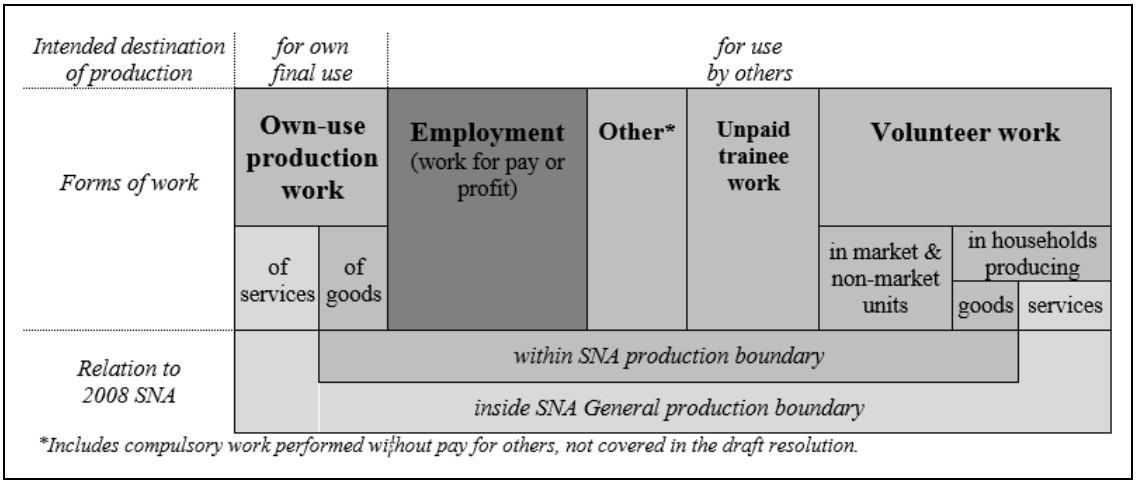
4. The report is structured as follows. The remainder of this section provides a short overview of the latest international recommendations on the measurement of employment included in the Resolution I adopted by the 19th ICLS. Section II describes the testing strategy and the alternative questionnaire approaches to identify persons employed developed for testing. Section III details the first stage of testing (cognitive interviewing), including the issues evaluated, the main findings and changes introduced to the alternative survey questionnaires as a result. Section IV describes the second stage of testing (experimental field tests), including the issues assessed and findings. The final section (V) provides a summary of the main conclusions and recommendations drawn from the pilot studies.

A. Employment in the international statistical standards

5. Resolution I *concerning statistics of work, employment and labour underutilization,* adopted by the 19th ICLS, updated the previous standards from 1982 that had played a critical role as reference for national systems of labour force statistics and the design of labour force surveys (ILO, 1982). The new standards greatly expanded the scope of labour statistics by recognizing the need to collect data on different forms of work, paid and unpaid, on a regular basis. To this end, the new standards introduced the first internationally agreed statistical definition of *"work"* which is aligned with the general production boundary, as well as a framework that distinguishes different forms of work to support their separate measurement (see Figure 1).

[2] http://www.ilo.org/stat/Areasofwork/Standards/lfs/WCMS_484981/lang--en/index.htm

Figure 1: Forms of Work framework



6. The introduction of the Forms of Work framework has important implications for the production of statistics on employment and, more generally, the labour force. This is because *"employment"* in the new framework is more narrowly defined as *"work performed in the context of transactions for pay or profit"*. In contrast with the previous standards, work activities that contribute to production but are not done in exchange for remuneration, such as own-use production work, volunteer work and unpaid trainee work, are no longer included within the concept of employment.

7. The narrower definition of employment as *"work for pay or profit"* aims to meet the demand for more targeted indicators to monitor access to employment opportunities that generate an income and to inform the design and evaluation of policies aimed at job creation, promoting entrepreneurship, reducing gaps in labour market participation between population groups, etc.

8. In the case of forms of work that are not done in exchange for remuneration, the updated standards introduced new definitions and guidelines for their comprehensive measurement as separate forms of work. This change also aims to provide greater flexibility to meet a growing demand for data to inform a wide range of social and economic policies. For example, in the particular case of own-use producers of foodstuff (previously subsumed under traditional employment indicators), the standards introduced a new headline indicator, the *"rate of subsistence foodstuff producers"*, to support more targeted monitoring and policymaking.

9. For data collection purposes, this change in the definition of employment means that there is a need to revise existing survey questionnaire sequences to establish a boundary with work activities that are not done in exchange for remuneration. In the case of own-use production of goods, in particular, the new standards recommend using the *"main intended destination of the output"* as key criterion. Thus, an activity is considered as *"employment"* if done for pay or if the main intended destination of the output is for sale or barter (i.e. market-oriented production). By contrast, the activity is considered as *"own-use production work"* (and thus excluded from employment) if the main intended destination of the output is for final use by the producer or by family members. A separate report in this series will discuss the new concept of own-use production work introduced by the 19th ICLS and the findings from the ILO LFS pilot studies on its measurement through labour force surveys.

10. To support frequent data collection and following the changes in the concept of *"employment"*, the 19th ICLS introduced a revised operational definition of *employed persons* as *"all those of working age who, during a short reference period, were engaged in any activity to produce goods or provide services in exchange for pay or profit"*[3].

11. The phrase *"in exchange for pay or profit"* is meant to be interpreted as work done in expectation of obtaining a remuneration in the form of wages or salaries for time worked or work done, or in the form of profits from the sale or exchange of goods and services. This includes remuneration in cash or in kind, whether paid directly to the person performing the work or indirectly to a household or family member (as can occur in family-run businesses). This means that contributing family workers, who help in a business or market-oriented farm operated by a family member, continue to be counted as employed.

12. The short reference period recommended to identify employed persons is now specified as *"seven days or one week"*. This short reference period aims to support monitoring of short-term changes in employment levels over time through repeated measurement. It is based on the observed convergence in national LFS practices (ILO, 2013b) and takes account of good practice in survey design as a way to minimize reporting errors due to memory recall problems when using retrospective questions (i.e. *In the last week, did you do any work for pay…?*). The two options *"seven days"* and *"one week"* are meant to support different survey implementation practices, in particular, a rolling seven days (i.e. seven days prior to the interview day), rolling calendar week (i.e. calendar week prior to the interview date) and fixed calendar week (i.e. specified calendar week independent from the interview date).

13. To ensure comprehensive identification of persons employed in the short reference period, two groups continue to be identified:
    a. Employed persons "at work," i.e., who worked in a job for at least one hour; and
    b. Employed persons "not at work" due to short absence from a job, or to working-time arrangements (such as shift work, flexi-time and compensatory leave for overtime).

14. As in the past, the *"one-hour criterion"* remains central to the identification of employed persons. This ensures coverage of persons engaged in all types of jobs, including part-time, small or casual and also ensures that all labour input from employment is taken into account in macroeconomic estimates of national production and productivity. It is also needed to ensure that indicators on unemployment and the potential labour force refer to persons not engaged in any type of paid job, business or own-account market-oriented activity.

15. To identify employed persons "not at work" in the short reference period, the new standards include guidance that has been simplified based on accumulated practice. The guidance is no longer based on the status in employment of the person (i.e. employee or self-employed); rather it is based on the reason for absence. Persons with a job or business absent in the reference period due to working time arrangements (e.g. shift work), public holidays, vacation or annual leave, sick leave due to own illness or injury, or maternity and paternity leave are directly treated as employed, "not at work". For other cases, additional criteria are needed to establish that the person continues to have a link to the job during the absence, and that it is of short duration. These include the duration of

[3] Paragraph 27.

absence which should be, in general, not greater than three months and/or continued receipt of remuneration.

16. A few special cases are also mentioned, in particular, seasonal workers during the off-season are now to be classified as employed only if they continue to perform some of the tasks and duties related to their seasonal job or business. In the case of contributing family workers absent from work, the new standards recommend they be treated in the same way as other workers; that is based on the reason for absence.

II. METHODOLOGY

A. Testing strategy

17. One of the main issues driving the design of the ILO LFS pilot studies was precisely how to best implement the new definition of employment as *"work for pay or profit"* and as part of this, how to operationalize the boundary between employment and own-use production work based on the *"main intended destination of the production"*. Given that many countries around the world have a long established LFS for the collection of statistics on employment and the labour force, a main interest was to develop approaches based on the existing questionnaire sequences but aligned with the new definitions.

18. An ILO review of country practices in LFS and population censuses revealed a few approaches that are commonly used across countries (ILO, 2013b). These were used as basis to design five alternative question sequences, each with a different starting point to identify persons employed in the short reference period. Table 1 shows the five models developed for testing by type of approach and their allocation among the 10 pilot countries and across regions. As illustrated, beyond the regional comparisons, each country was assigned to test two approaches to allow for direct comparisons to be made within the same context.

Table 1. Model questionnaire assignment by approach, region and country

Model approach		**Region / Country**									
		Africa				Americas		Asia-Pacific		Eastern Europe & Central Asia	
		CMR	CIV	NAM	TUN	ECU	PER	PHL	VNM	MDA	KGZ
M1	Industry-based	X	X	X							
M2	Main activity				X			X			X
M3	Work for pay or profit		X		X	X	X	X	X	X	X
M4	Employment type			X			X		X		
M5	Job-based	X				X				X	

19. The five approaches were tested using both qualitative and quantitative methods. Detailed descriptions of the Project objectives and design, as well as the methodology used during the qualitative and quantitative phases of testing are available in three separate reports in this series.

20. During the qualitative phase, cognitive interviewing (CI) was used to identify potential sources of response error in the identification of persons employed due to questionnaire design issues. Based on the findings from the cognitive tests, the five model questionnaires were revised in preparation for the quantitative phase of testing. The specific issues evaluated during the cognitive tests, main findings and revisions introduced to the model approaches are described in detail in Section III.

21. During the quantitative phase, the revised model questionnaires were further evaluated using small-scale survey field tests. The main emphasis of the field tests was to evaluate how consistent the alternative question sequences were in classifying persons as employed as well as the relative importance of key questions for comprehensive identification. Similarly, there was interest in assessing the possibility of mis- or over-identification of persons as employed who should not be classified as such under the latest standards.

22. Given the particular interest in assessing the boundary between employment and own-use production of goods, the field tests were conducted in target geographic areas selected by pilot countries where mixed agriculture and other primary activities prevailed. The samples, while not representative of the country or area, were designed and selected using standard survey sampling procedures that oversampled rural areas compared to urban areas.

B. Approaches to identify persons employed tested

23. The five approaches were all designed with the same objective, to capture persons employed using as basis the revised concept of *"work for pay or profit"*. Following the typical logic used in LFS around the world, in all approaches, the main aim is to identify persons employed in the short reference period with as minimal overall respondent burden as possible. Nevertheless, each approach has a different starting point and, as a result, different basic structure, question formulation and flow. Figures 2 and 3 show the basic structure that each approach used to identify persons employed as developed in preparation for the first stage of testing (i.e. cognitive interviews).

24. In line with LFS practice, the sequences do not initially attempt to identify the multiple jobs or businesses, nor the type of job(s) held by persons. This is assessed as a separate step in subsequent modules on the characteristics of the main and secondary jobs. In practice, this means that the moment there is confirmation that the respondent fulfils the criteria to be considered "employed" (regardless of the number of jobs held), he/she is routed to a section on the characteristics of the main job. In all approaches, those who go through the full sequence and are not identified as employed (i.e. "not employed") are instead routed to the module on job search and availability.

Model sequences differences

25. The "Industry-based" model (M1) was developed for use in contexts where an important share of the population is engaged in mixed or subsistence agriculture and/or fishing. It was based on survey approaches used by some countries in West Africa and extended to be aligned with the new standards. As shown in Figure 2, in its initial design, M1 started with a section on "own-use production work" that aimed at capturing activities to produce goods and services mainly intended for final use by the household or family. This section was then followed by a section aimed at capturing "work for pay or profit" using the same approach as the start of M3 (see Figure 3). The rationale underlying this approach was to allow people engaged in subsistence activities to report that work initially, thus reducing the likelihood of misreporting such work as work for pay or profit.

26. The "Main activity" model (M2) used an approach that allowed participants initially to report their main activity as self-perceived. This starting point is very different from a typical LFS. It is assumed by some to fit more closely with participants' subjective view of their own status and thus be more participant friendly. Follow-up questions are used to establish the labour force status of the participant in line with the latest standards. For example, persons who do not initially self-identify as employed are asked follow-up questions to find out if they did any work for pay or profit, using the same approach as the start of M3 (see Figure 3). The approach was based on sequences commonly applied in population censuses as well as in multi-topic surveys used by Pacific island countries and a few other countries around the world. It was the shortest sequence tested and was developed for use in questionnaires where space is an important constraint.

Figure 2: Model sequences to identify persons employed used in the CI tests (M1 and M2).

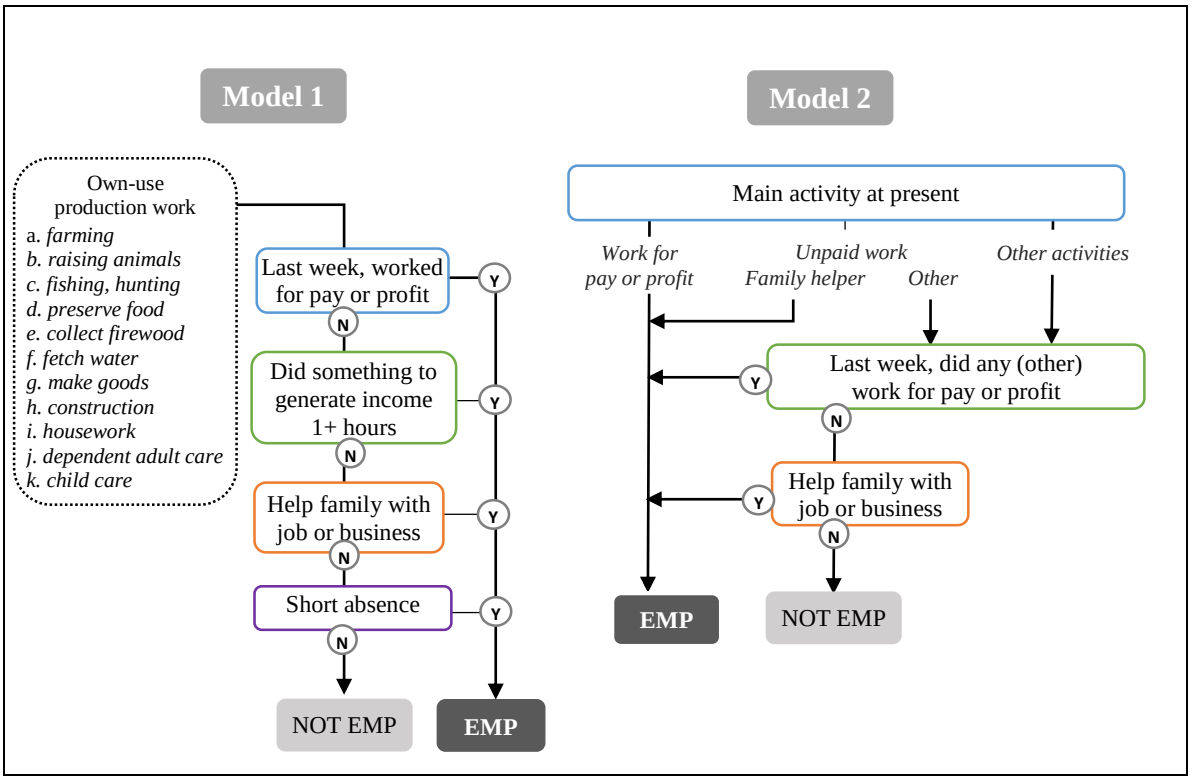
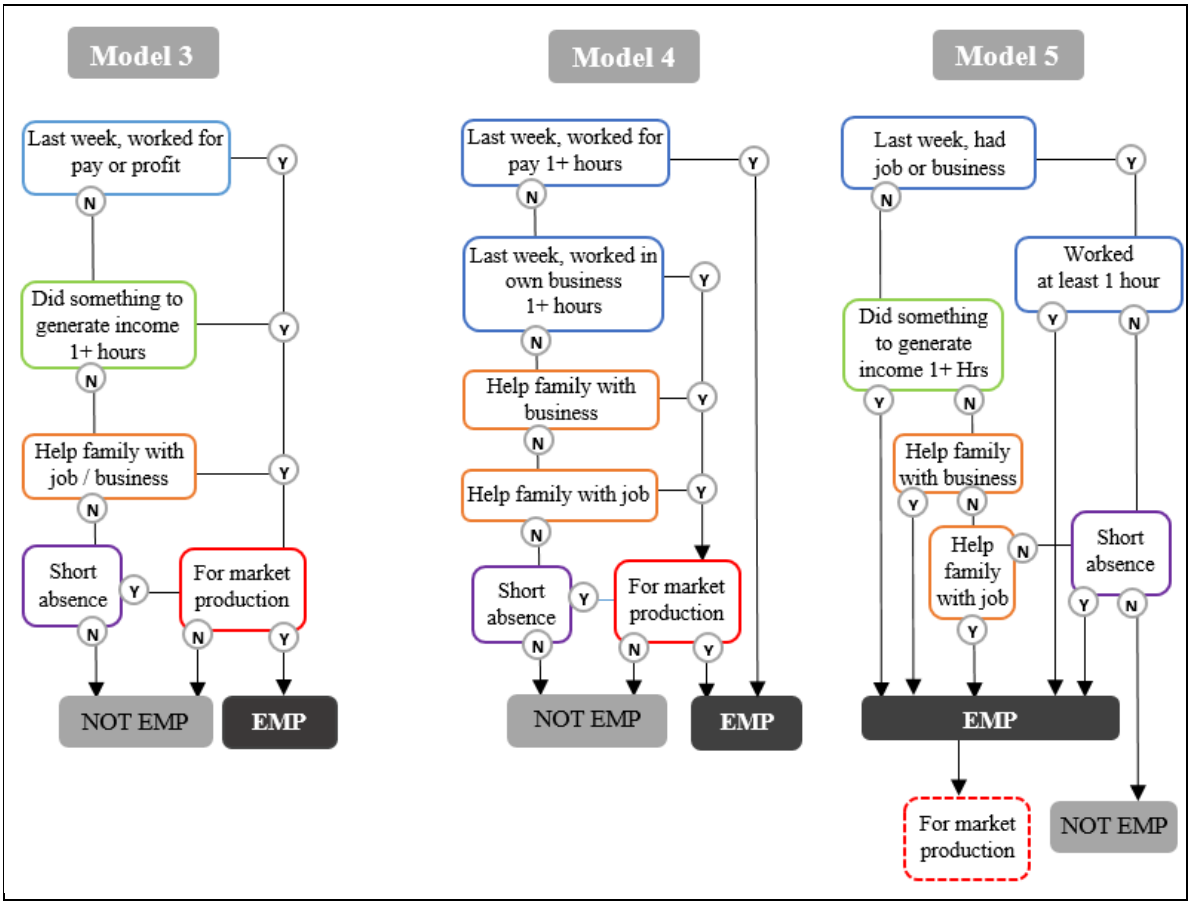


Figure 3: Model sequences to identify persons employed used in the CI tests (M3, M4 and M5).



27. The "Work for pay or profit" model (M3) was based on the most common sequence used by countries in LFS across different regions of the world, particularly among high- and middle-income countries. It starts with a core question that asks participants if they did any work for pay or profit in the short reference period (see Figure 3). To align this approach with the 19th ICLS standards, a new module of questions ("for market production") was introduced to establish the main intended destination of the production for persons who indicated working in agriculture or fishing. Given its widespread use, M3 served as a reference during the analysis phase.

28. The "Employment type" model (M4) draws from sequences used in LFS by some countries, particularly in Southern Africa and Asia. This approach uses a similar overall structure as M3. The main differences are that the starting question is split into two, as shown in Figure 3. The first question in M4 focuses on "work for pay" aimed at capturing persons working for someone else (i.e. employees, paid apprentices) and the second on "work for profit" aimed at capturing persons working in their own business (i.e. employers, own-account workers). As with M3, M4 also included a new module ("for market production") to establish the main intended destination of the production for persons who indicated working in agriculture or fishing.

29. The "Job-based" model (M5) was developed to address some concerns raised with the complex language used in the traditional "Work for pay or profit" model (M3). Instead, as shown in Figure 3, M5 starts with a core question that ask participants if they "had a paid job or a business." Given the emphasis on "having" a job (as opposed to "doing" any work), a follow-up question on the "1-hour criterion" was introduced to distinguish between persons employed, at work and those absent

in the reference period. In addition, given the wording used in the starting approach (paid job or business), no dedicated module to establish the main intended destination of the production was included in M5. Nevertheless, a single confirmation question on the main intended destination of production was included in the section on main job characteristics for persons employed in farming or fishing to assess the possible misclassification of cases not matching the narrower concept of employment as "work for pay or profit".

Common question blocks

30. Despite the differences in structure and flow, the five approaches are built from key *question blocks* that accumulated LFS practice have shown to be integral to comprehensive identification of persons employed. These *question blocks* are essentially parts of the sequence that share a common purpose and are combined in different ways in the five different models, as appropriate to the logic of the model. The blocks are indicated with different colours as a way of illustration in Figures 2 and 3 and comprise:

    a. **Core block:** Starting question block aimed at identifying most of the employed with as minimal response burden as possible. This block usually comprises one or two essential questions asked to all persons of working age (blue box);
    b. **Small jobs recovery:** Recovery question(s) asked *only* to persons not reporting employment in the core block. Its purpose is to "recover" (i.e. identify) persons with jobs likely not recognized as such (e.g. casual, informal, atypical jobs; small business activities; etc.) and thus not initially reported in the core block (green box);
    c. **Family helper recovery:** Recovery question(s) asked *only* to persons not identified as employed in the core and/or small jobs recovery blocks. Its purpose is to improve identification of persons working without pay in a family-run business or helping a family member with their paid job (e.g. helping a parent who works as a clothes factory outworker to sew part of the merchandise) but who may not recognize their "help" as work for pay (orange box)[4];
    d. **Short absence block:** Questions to identify or confirm cases of persons with a job or business but on a short absence during the reference period (purple box);
    e. **For market block:** New block of questions introduced to confirm the main intended destination of the output (i.e. for sale / for family consumption) for persons working in agriculture or fishing, and including a recovery for work in agriculture that may have not been reported in the previous blocks (red box).

31. In some cases, an identical question block was used across the different model approaches. This is the case of the "short absence" block, for example. In other cases, a given question block is very different across models, sometimes comprising only one question and other times multiple questions, yet sharing the same purpose. This is the case of the "core" block. Finally, as evident in Figures 2 and 3 above, depending on the logic of each approach, certain blocks were altogether excluded, such as the "for market" block. These differences were precisely the focus of the tests.

[4] Herein after referred to as "family helpers."

III. COGNITIVE INTERVIEWING TESTS

A. Issues selected for CI testing

32. The five alternative approaches to identify persons employed were first evaluated using CI techniques to identify potential sources of response error that could be due to their different design elements. The CI tests focused in particular on assessing how selected questions in the core and recovery blocks were understood by different respondents, how they recalled the information, and how they decided and formulated their answers. This included an assessment of how respondents understood the underlying intention of the questions as well as how they interpreted specific phrases and terms typically used in LFS and directly linked to the operational definition recommended in the international standards such as "worked for at least 1 hour", "pay in cash or in kind", "for profit" and "business".

33. Interpretation of two alternative short reference periods "the last week" and "the last 7 days" was also evaluated. The main concern here was whether any differences could be observed in how respondents understood each and how they compared in facilitating recall of different employment activities (i.e. self-employed, employees) in different contexts, in particular in urban and rural areas. In addition, there was interest in assessing the purported usefulness of a moving "last 7 days" period to assist with recall among respondents whose daily life is not structured in terms of a work week followed by a rest period. The fixed calendar week approach (e.g. the week starting on 15th May) was not considered for testing given the variability in fieldwork duration periods across pilot countries.

34. Special emphasis was also placed on assessing the interpretation of questions targeting persons working without payment in a family-run business (contributing family workers) as well as persons helping with a paid job held by a family member. A primary concern was to identify effective question formulations to improve the reporting of these activities as part of the identification of employed persons.

35. Given its recent introduction in the international standards, central attention was placed on assessing the new "for market" question block introduced to establish the boundary between employment and own-use production of goods based on the criterion of "main intended destination of the production". Issues of interest were how respondents interpreted key terms such as: "agriculture", "mainly", "family consumption", "sale or barter"; whether they had a formed idea about the intended use of the products, regardless of the timing when the interview took place (i.e. during planting, harvesting, etc.), and the process by which respondents decided on their answer. Closely related to this was an assessment of how well the overall structure and logic of each approach served to establish the boundary between employment and own-use production of goods.

36. Cross-country evaluation of the findings from the cognitive interviews were also made to assess possible issues with the translation of key phrases into multiple languages and the extent of construct overlap and overall instrument equivalence (Miller et.al, 2011). That is, whether the approaches as translated were interpreted in a similar way by respondents across different, languages, countries and regions and whether the alternative approaches could overall be considered as being equivalent in terms of capturing the same underlying concept of employment as "work for pay or profit".

B. Main findings from the CI tests

Core block

37. In general, the CI results documented that participants across countries consistently understood the general aim of the core block questions in the alternative approaches as referring to working activities which were done to generate an income. This was particularly the case for models M1, M3, M4 and M5. Nevertheless, some issues were observed as described below that could impact identification of employed persons, either leading to under- or over-identification of certain working situations as employment.

38. One of the issues documented related to problems of interpretation of selected key phrases or terms commonly used in LFS. For example, the phrase "for profit" (M1, M2, M3) appeared to be misunderstood in a number of cases across different countries and languages. Some of the misinterpretations documented were linked to the terms used in translation. For example, use of a technical translation in Spanish as "*a cambio de beneficios*" led some participants in Peru to interpret the phrase as referring to "*government benefits*." A similar issue with the translation into Arabic resulted in its interpretation as "*god given benefits*" in Tunisia.

39. More generally, pilot countries reported that the phrase "for profit" tended to be interpreted as referring to significant financial gains, excluding losses or small income. This impacted identification as employed of some participants working on their own-account. Similarly, the term "business" (M4, M5) was understood more narrowly than intended in cases. For example, Ecuador indicated that self-employed farmers and fishers, in particular, tended not to self-identify as having a business but as working in their "independent activity".

40. The phrase payment "in kind" (M1, M3) was interpreted in different ways, but often as having negative connotations, including as referring to "*illegal activities*" for example in Ecuador, or to payment with "*personal services*" in Kyrgyzstan and Moldova. In Namibia, respondents referred to it as work done out of sympathy, with one saying: "*in kind means doing something and not getting paid*".

41. Likewise, reference to specific types of pay was reported to cause some confusion. For example, in Moldova and the Philippines not all respondents knew what 'tips' and 'commissions' referred to. In Moldova, several respondents said: "*it is not payment (tips), it is like a gift*" and "*it is unofficial money*". Nevertheless, evidence from Namibia (M4) suggested that respondents, while not necessarily knowing the precise meaning of selected words interpreted the question more generally as asking about work to generate an income. Indeed, the reports by countries indicate that use of more general terms such as "for pay" or "to generate income" appeared to be more consistently understood by respondents as intended.

42. Use of the phrase "for at least 1 hour" in the core question block (M4, M5) appeared to cause some problems of interpretation. Countries reported some respondents that misunderstood this as referring to "additional work", "overtime", "secondary activities" or to "small jobs". For example, in Vietnam (M4) one respondent said: "*made me think that the question refers to a second job, not the main job*". Other cases were observed in Ecuador (M5) and Peru (M4) where, for example, a

respondent indicated "*no, last week I worked my usual hours, no overtime*". Further, Cameroon (M4) indicated that the inclusion of this phrase led some respondents to consider only activities with low numbers of hours. Additionally, countries testing M5 reported that some respondents appeared surprised when asked if they had worked at least one hour in their job or business. As illustration, showing some discomfort, one participant in Ecuador noted: "*One hour is not enough, I worked many hours".*

43. In the case of M2, the original approach started with the question "*What is your main activity at present?"* and asked for spontaneous responses. This approach showed some problems with translation as well as comprehension. The phrase "main activity" was not easily translated into some of the languages covered, including Russian, French and Spanish. Rather than attempting direct translation, in this case, it was particularly important to find equivalent phrases in the selected language. Given that an open-ended response to the question was sought, the comprehension difficulties created clear reporting problems for a large number of respondents in some countries. In Ecuador respondents tended to focus on their health or psychological status, for example. In Tunisia, the term "activity" was sometimes interpreted as referring to volunteering or leisure activities, as evidenced by a respondent who answered "*I do not have any voluntary or charitable activity.*" A separate report in this series explores in more detail the findings from the pilot studies on the measurement of main activity.

Short reference periods

44. The cognitive interviews indicated that use of a short reference period, "last week" or "last 7 days", appeared to work well in anchoring responses regarding working activities. However, the 10 pilot countries reported some evidence of uneven interpretations across respondents. This issue was reported for all five approaches. The most problematic appeared to be the "last 7 days" which tended to be interpreted as "Monday to Friday" and "Monday to Sunday" regardless of the day when the interview took place, or whether the respondent was working as self-employed or as employee. No concrete evidence was obtained of this approach serving to improve recall among persons not following a structured working week followed by a rest period. In addition, some degree of interviewer burden was observed when using this reference period. When needing to confirm responses, interviewers had to count back the days in order to establish the correct starting point.

45. The reference period "last week" was more consistently interpreted as a calendar week. Some variation in interpretation was found such as respondents considering "Monday to Friday", "Sunday to Saturday", "Monday to Saturday". In some cases further probing showed these interpretations to be linked to the respondents own situation or routine, e.g. considering Monday to Friday as that was their regular working schedule. A few cases of respondents seeking clarification were also reported. For example, a case in Cameroon was reported where a respondent asked: "*The reference period refers to last week or this week?*" as it had implications for his responses to the questions on employment.

46. On balance, it was not evident that the diverse interpretations of the reference periods observed, would lead to misreporting employment activity in the reference period. Nevertheless, the CI findings documented lower interpretation problems with the "last week" compared to the "last 7 days".

Small job(s) recovery

47. The use of recovery questions for small, atypical or casual jobs worked well across the different approaches in getting respondents to understand that a broad range of jobs were covered. For example, Moldova reported a participant who had answered "No" to the core question, but "Yes" to the small job recovery question because she had done occasional work in the reference week. Further probing indicated that she did not consider herself as having a job and thus had not initially reported the activity. Peru further reported several cases of own-account workers that only reported their activity in the small jobs recovery question. A young woman, for example, reported selling beauty products to pay for her studies. In Tunisia, a young man reported having worked as a paid apprentice in an auto-mechanic shop. He had not reported it in the core question because he did not consider his apprenticeship as work but rather as a learning opportunity.

48. Listing examples of employment activities likely to go underreported as per the national context seemed to help improve interpretation of the question. However, listing too many or too specific examples tended to confuse respondents, who then interpreted the question to be asking specifically about those examples. Most helpful was including colloquial words used locally to refer to casual employment, as well as descriptions such as "making things for sale", "buying and reselling things" etc. rather than listing of specific kinds of jobs.

49. Inclusion of the phrase "at least for 1 hour" in the small job recovery block (M1, M3, M5) tended to be interpreted as intended. Indeed, countries reported interpretations linked to "doing something for money", "working occasionally", "providing some small paid services", etc. For example, in Ivory Coast a respondent indicated the phrase referred to "*doing anything for money, like a small business*".

Family helper recovery

50. Recovery questions specifically targeting family helpers were also found to be necessary to improve reporting of these types of activities. For example, in Peru (M3), one young woman who had answered "No" to the previous core and small jobs recovery questions, indicated "*I helped my mother to prepare soda drinks to sell*". Another participant reported "*I helped my daughter to sell products at her convenience shop*". Likewise, in Vietnam (M3), a participant reported helping her husband in his business by answering calls from customers and ordering supplies. In all cases, the family helper recovery question was understood as intended. Responses by participants further documented that they themselves perceived this work as "help" or "support" and not as a job, hence not reported earlier.

51. Among participants not working as contributing family workers, the CI tests indicated the questions were similarly understood as intended in most cases. As illustration, in Cameroon (M1), a young man when asked for an example of the type of work the question referred to, indicated: "*For example, helping my mother in the field without expecting a pay.*" Nevertheless, a few cases were reported of respondents interpreting the question as also covering help in providing unpaid household services. For example, in Tunisia (M3), a middle-aged respondent replied to this question that it was only her who helped in the house. The same participant indicated that the question was rather long and complicated, hinting at possible problems with the question length and its translation into Arabic.

52. The alternative of using two questions to capture family helpers, as done in models 4 and 5, nevertheless was shown to cause some confusion among respondents (see Figure 3). This two-question approach appeared to add little value and instead cause some confusion as participants did not seem to see a distinction between the two questions. Beyond this there was no clear pattern of respondents considering non-employment activities when asked these recovery questions with respondents listing relevant activities when asked to paraphrase.

For market block

53. Cognitive testing of alternative approaches to establish the boundary between employment and own-use production of goods proved very useful. In particular, the initial approach used in M1 was found to be too complex for understanding, while those tested in M3 and M4 showed more promise.

54. In M1, the notion of "main intended destination of the products" was initially integrated directly into the core questions asking about participation in specific types of activities (e.g. *Did you do any farm work or work in a [food garden] to produce food mainly for consumption by the household or family*?). This approach made the questions too long and complex for clear understanding by participants. Indeed, a number of interviews were observed where participants requested the question to be repeated before answering. In addition, countries reported that some participants tended to report work in the stated activity regardless of the intended destination of the production. This led to double reporting of farming and fishing as both own-use production and employment in different modules of the M1 instrument.

55. By contrast, the approach in M3 and M4 used a dedicated "for market" block where respondents identified as employed by the initial questions were routed (see Figure 3). The "for market" block included an initial screening question (*Was this work in agriculture or fishing?*) to identify those working in agriculture or fishing who were subsequently asked a direct question on the "main intended destination of the products". Overall, results from the CI tests indicated that such an approach was clearer to respondents compared to M1, as respondents tended to think first about the activity, and separately about its main intended use. Thus, using a series of questions better matching the cognitive process respondents go through allowed a more consistent separation of persons engaged in market-oriented activities from those engaged in own-use production work. Nevertheless, a number of cognitive issues were identified with the M3 and M4 sequences tested.

56. In particular, the initial screening question appeared to cause some burden among respondents employed in non-agricultural activities who found the question not relevant to them and were left feeling that an option to report their non-agricultural work was missing. In addition, among participants engaged in agriculture or fishing, some interpretation issues with the terms for "agriculture" and "fishing" were reported. Francophone and Spanish-speaking countries noted that some participants interpreted the term "agriculture" as only referring to land cultivation and generally not including animal husbandry. A similar issue was also reported by the Philippines, where one participant was not sure if "agriculture" included her work raising pigs. In addition, Cameroon and Moldova each reported a participant that reported commercial food processing activities as "agriculture" (e.g. making fruit jams). In the case of "fishing," Ecuador indicated that participants generally did not consider the term as including "growing fish in ponds or tanks."

57. Regarding the questions on main intended destination of the products included in approaches M3 and M4 (see Figure 4), countries reported that participants were generally able to answer quickly and with confidence. In cases, countries reported that some participants took a moment to reflect

before providing an answer. Nevertheless, no cases were reported by any of the pilot countries where a participant could not state a principal intended use of the products. Respondents generally understood the question as asking about the plans they had for the products they reported working on, and responses were generally provided in the present tense, as further elaborated below.

58. The phrase "mainly intended for sale/barter" was generally understood as intended. In the case of M3, where the question was asked in reference to any one product (see Figure 4), responses given served to confirm that participants thought about a specific product and decided on their answer in terms of quantity. In Peru (M3), for example, one participant stated "*The yams are for sale. We keep the ugly ones for us, but they are mostly for sale.*" Another one said, "*I milk the cows and sell the milk. You are asking if I produce something to sell. The milk.*"

Figure 4: Questions to assess the "main intended destination of the products" evaluated during the CI (M3 and M4).

Model M3	MKT03. Thinking about the different products you worked on, were any of them mainly intended for sale/barter? 01 YES 02 NO
Model M4	MKTA02. Are the products obtained from this activity mainly intended for sale/barter or for family use? 01 ONLY FOR SALE/BARTER 02 MAINLY FOR SALE/BARTER 03 MAINLY FOR FAMILY USE 04 ONLY FOR FAMILY USE

59. Among respondents who answered "No" the CI tests further documented that participants generally thought about the products and their intended final use by the family when answering. For example, in Peru, a respondent who answered "No" explained: "*You want to know if I raise animals to sell. No. They are for my consumption. I raise guinea pigs, chicken, rabbits.*" In addition, some participants who answered "No" indicated that while the products were mainly intended for the family, if there was a surplus they would sell. For example, in the Philippines, a participant who answered "No" in reference to the rice she was growing, when further probed stated "*That's for consumption, but if we have extra, it can be sold*". Similar cases were documented in Moldova (M3), where a number of participants indicated that the vegetables they were growing were for the family, but that if they had an excess then it could be sold.

60. Overall, the range of answers documented in the CI tests indicate that participants focus on their intentions for working on those products when providing an answer and that a principal intention can be identified, regardless of whether some of the products are eventually consumed, or sold in cases where a surplus becomes available.

61. One case was nevertheless documented in the Philippines that indicated a potential interpretation problem. The case involved a respondent who worked as an employee managing land plot allotments and received a part of the production (rice) as in-kind payment. When asked the question (MKT03), she replied "No". Subsequent probing revealed she had interpreted the question as referring to the rice she had received as payment, thus resulting in her misclassification as not employed. Additionally, the probes further revealed that she also kept an allotment for growing

produce for her family. This case evidenced possible sources of ambiguity for workers in agriculture paid in-kind with a part of the production, as well as for persons with multiple agricultural activities (for market and for family use).

62. In the case of M4, the question made reference to the range of products obtained from the farming activity (see Figure 4). Evidence from the CI indicates that participants interpreted the question as referring to "most of the products being for sale." However, the CI tests in this case did not provide sufficient detail to confirm the range of products that participants considered when answering and whether this differed from the question included in model 3. One participant in Peru, for example, said: "*They are mostly for sale. You want to know what is my source of income, because if I do not work, do not have a fixed income. In what respects to family use, yes, we take some milk, but the products are to sell.*" In Cameroon, several respondents interpreted the question as asking whether the products were *essentially* to sell or for the family. Answers included "*the harvest is only for the family*", "*the harvest is essentially for the family*", "*I sell everything, all the products I grow*."

63. Evidence from Moldova and the Philippines further indicated that participants thought "sale" referred to "exchange for money or for other products", suggesting that barter was taken into account. However, explicit use of the term "barter" in the question formulation was, in some cases, found to introduce confusion among a few participants. For example, in Ecuador, several participants considered the translated term "trueque" referred to illegal activities, while Cameroon reported that some participants could not explain the meaning of "barter" (troquer) when probed.

64. The phrase "mainly for family use" was generally understood as intended; that is, for consumption or use by the family. For example, in Namibia a respondent stated: "*It means that the purpose is to be consumed by the household members.*" Another participant in Vietnam added, "*They are for the family, the purpose is to have sanitary vegetables for the household*". Although not well documented in the CI tests, some examples suggested that participants considered use of the products by family members living in the household, as well as family living in other households. However, the CI tests did not provide in-depth details regarding who respondents considered to be a part of the family.

C. Revisions introduced based on the CI findings

65. Overall, a number of revisions were introduced to the five approaches based on the findings from the cognitive interviews.

Short reference periods

66. To reduce the observed problems with uneven interpretations, the reference period "last 7 days" was replaced with the "last week" in all model approaches. In addition, as a general rule, the reference periods were made explicit by indicating the days or dates to be considered in the first question of each sequence (M1, M3, M4 and M5), as illustrated in Figure 5. This clarification, however, was not introduced in subsequent questions (e.g. small jobs recovery, family helper recovery) to avoid the sequence sounding too repetitive to respondents.

Figure 5: Revisions introduced to improve interpretation of the core question block and reference periods for employment (models M3 and M4)

Model	Question wording *before* the CI tests	Question wording *after* the CI tests
M3	EMP01. In the last (week/7days), did you do any work for pay or profit, in cash or in kind? 01 YES 02 NO	B04. In the last week, that is from [DAY] up to [DAY], did you do any work for pay or profit? 01 YES 02 NO
M4	EMP01. In the last (week/7days), did you do any work for a wage, salary, commission, tips or any other pay, even if only for 1 hour? 01 YES 02 NO	B04. In the last (week/7days), did you do any work for a wage, salary or any other pay, even if only for 1 hour? 01 YES 02 NO

Core question blocks

67. While still retaining the logic of each approach, the core blocks were simplified to the extent possible to reduce the observed problems of misinterpretation. Terms identified as causing confusion, especially those documented as having negative connotations were replaced. For example, as shown in Figure 5, reference to payment "in cash or in kind" was removed from the initial question formulation in M3. Instead, alternative wording referring to in kind pay was included in the small jobs recovery question as an example, i.e. "work in exchange for products, food, housing" (see Figure 7). In the case of M4, the terms "commission" and "tips" were dropped to simplify the question formulation.

68. In M2, to address the problems of interpretation observed with the initial question on "main activity" based on spontaneous self-declaration, the core block was turned into a close-ended question with pre-defined response options to be read aloud (see Figure 6). In addition, the phrase "main activity" was removed and instead the question was re-formulated to place emphasis on what the person is mainly doing: "*Which of the following best describes what (NAME) is mainly doing at present?*".

Figure 6: Revisions introduced to improve reporting of main activity as part of the identification of employed persons in model M2

Wording *before* the CI tests	Wording *after* the CI tests
ACT01. What is your main activity at present? *Work for pay or profit* 01 PAID EMPLOYEE 02 PAID APPRENTICE 03 EMPLOYER 05 OWN-ACCOUNT WORKER 06 FARMING, FISHING MAINLY FOR SALE *Work without pay* 07 FARMING, FISHING MAINLY FOR FAMILY USE 08 HELPING IN A FAMILY BUSINESS 09 HELPING A FAMILY MEMBER WHO WORKS FOR SOMEONE ELSE 10 VOLUNTARY / COMMUNITY WORK *Other activities* 11STUDENT 12 HOUSEHOLD DUTIES 13 HELPING WITH HOUSEHOLD DUTIES 14 SELF-CARE (DUE TO DISABILITY, INJURY, ILLNESS) 15 CULTURAL / SPORTS / OTHER RECREATIONAL ACTIVITIES 16 RETIRED, PENSIONER 17 NONE/ DOES NOT DO ANYTHING	C01. Which of the following best describes what (NAME) is mainly doing at present? *READ* 01 Studying or training 02 Work in farming or fishing 03 Work in a sector other than farming or fishing 04 Look for work 05 Engaged in household or family responsibilities 06 Long-term illness, injury or disability 07 Retired or pensioner 08 OTHER (specify)

Small job(s) recovery

69. The small jobs recovery questions were kept in all approaches but the wording was revised to improve its interpretation as referring to any work done to generate an income. The examples were made more descriptive, instead of listing specific jobs and, as indicated earlier, work done in exchange for in-kind pay was added as an example (see Figure 7).

70. The phrase "for at least one hour" was, in most approaches, retained as part of the small jobs recovery question (see Figure 7), following its common interpretation by respondents as referring to casual, atypical, small-hour jobs, secondary activities and better matching its intended use in the sequence.

Figure 7: Revisions introduced to improve interpretation of the small jobs recovery (M3)

Question wording *before* the CI tests	Question wording *after* the CI tests
EMP02. Or, did you do any of the following activities for pay or to generate an income, even if only for 1 hour? *READ* a. Running your own business such as [examples…] b. Work for pay as an apprentice, intern or trainee c. Any other activity for pay	B05. Or, did you do any activity for pay or to generate an income, even if only for 1 hour? For example… *READ* a. Making things for sale, buying and reselling things, providing a service for pay; b. Work in exchange for products, food, housing; c. Work for pay as an apprentice, intern or trainee; d. Any other activity for pay

71. In the case of M5, the question making reference to the 1-hour criterion was replaced with a question that more directly addressed it's intended use in the sequence; that is, to separately identify those absent from work in the reference week (see Figure 8).

Figure 8: Revisions introduced to improve interpretation of the 1-hour criterion in M5.

Question wording *before* the CI tests	Question wording *after* the CI tests
EMP01. In the last (week/7days), did you have a job or a business? 1. YES 2. NO → EMP02. Did you work in that job or business for at least 1 hours during the last week? 1. YES 2. NO	B01. Do you have a job? 1. YES → 2. NO B02. Do you have a business? 1. YES 2. NO → ::: B04. In the last week, that is from [DAY] up to [DAY], did you work in (any of) your job(s)/business(es) or were you absent? 1. WORKED 2. ABSENT

Family helpers' recovery

72. To reduce the observed confusion documented with the family helpers recovery block, the two-part recovery question included in M4 and M5 was simplified and combined into a single question, matching the approach used in the other models (see Figure 9).

Figure 9: Revisions introduced to improve interpretation of the question to identify family helpers (example based on model M4)

Wording *before* the CI tests	Wording *after* the CI tests
EMP03. In the last (week/7days), did you help unpaid in a business owned by a household or family member, even if only for one hour? 01 YES 02 NO	B06. In the last week, did (NAME) help a member of the household or family with his/her paid job or business? 01 YES 02 NO
EMP04. In the last (week/7 days), did you help a member of your household or family in his/her paid job, even if only for one hour? 01 YES 02 NO	

For market block

73. The "for market" block in models M3 and M4 were revised to address the main issues documented. First, the screening question to identify persons engaged in agriculture or fishing was reformulated to improve understanding of the indented activity scope. This was achieved by replacing the term "agriculture" with "farming or rearing animals." Likewise, the question format and response options were revised to include reference to work activities outside agriculture and fishing, as a way to reduce the burden observed among participants working in non-agricultural activities. In addition, the term "barter" was removed from the questions and response options to capture the "intended main destination of the products" (see Figure 10).

Figure 10: Revisions introduced to improve interpretation of questions on "main intended destination of products (example based on model M4)

Wording *before* the CI tests	Wording *after* the CI tests
MKT01. Was this work in agriculture or fishing? 01 YES 02 NO :::	D01a. Was this work that you mentioned in… *READ* 01 farming or rearing animals 02 fishing 03 other type of activity :::
MKT03. Are the products obtained from this activity mainly intended for sale/barter or for family use? 01 ONLY FOR SALE/BARTER 02 MAINLY FOR SALE/BARTER 03 MAINLY FOR FAMILY USE 04 ONLY FOR FAMILY USE	D02. Thinking about the products (NAME) worked on, are they mainly intended for sale or for family use? 01 ONLY FOR SALE 02 MAINLY FOR SALE 03 MAINLY FOR FAMILY USE 04 ONLY FOR FAMILY USE

74. More significant revisions were introduced to M1 and M2 to improve the approach used to establish the boundary between employment and own-use production of goods. In both cases, the process of identifying persons working in agriculture and/or fishing and the main intended destination of the production was split into a set of questions, following the cognitive process observed when responding to these questions during the CI tests.

75. In the case of M1, the initial section on "Own-use production work" was replaced with a section covering all work in agriculture and fishing (see Figure 11). This new section was designed to identify all persons having done any work in farming, animal husbandry and fishing in the reference week, *regardless* of intended destination of the production. Follow-up questions were further introduced to establish the main intended destination of the products, similar to the "for market block" used in approaches M3 and M4.

76. In addition, two new questions were introduced to address possible problems of interpretation among employees paid in kind (B09) and for work done in the context of a labour exchange (B10). Thus, overall, the new section on "Work in agriculture and fishing", was designed to capture own-use production work and employment in agriculture and fishing, while at the same time reducing the potential for double reporting the same activity as both employment and own-use production.

Figure 11: Revisions introduced to improve separate identification of employment in agriculture and own-use production of agricultural goods in model M1

Wording *before* the CI tests	Wording *after* the CI tests
In the last (month/4 weeks), OPW01. Did you do any farm work or work in a [food garden] to produce foodstuff mainly for consumption by the household or family? 01 YES 02 NO ::: OPW03. Did you grow fodder, raise or tend animals such as [chicken, oxen, cattle] mainly for the household or family? 01 YES 02 NO ::: OPW05. Did you do any [fishing, hunting or gather foodstuff] mainly for the household or family? 01 YES 02 NO :::	B04. In the last week; that is from [DAY] up to [DAY], did (NAME) do or help with any of the following activities? a. Working on a farm or land plot to produce foodstuff b. Raising or tending animals c. Fishing or collecting shellfish ::: B06. Are the (products/animals) (NAME) worked on…? 01. All intended for sale → 02. Some intended for sale and some for use by the family 03. All intended for use by the family → B07. Thinking about those (products/animals), is it intended to sell…? 01. More than half 02. About half 03. Less than half 04 CANNOT SAY ::: B09. Was (NAME) hired by someone else to do this work? 01 YES 02 NO B10. Did (NAME) do this work as an exchange of labour? 01 YES 02 NO

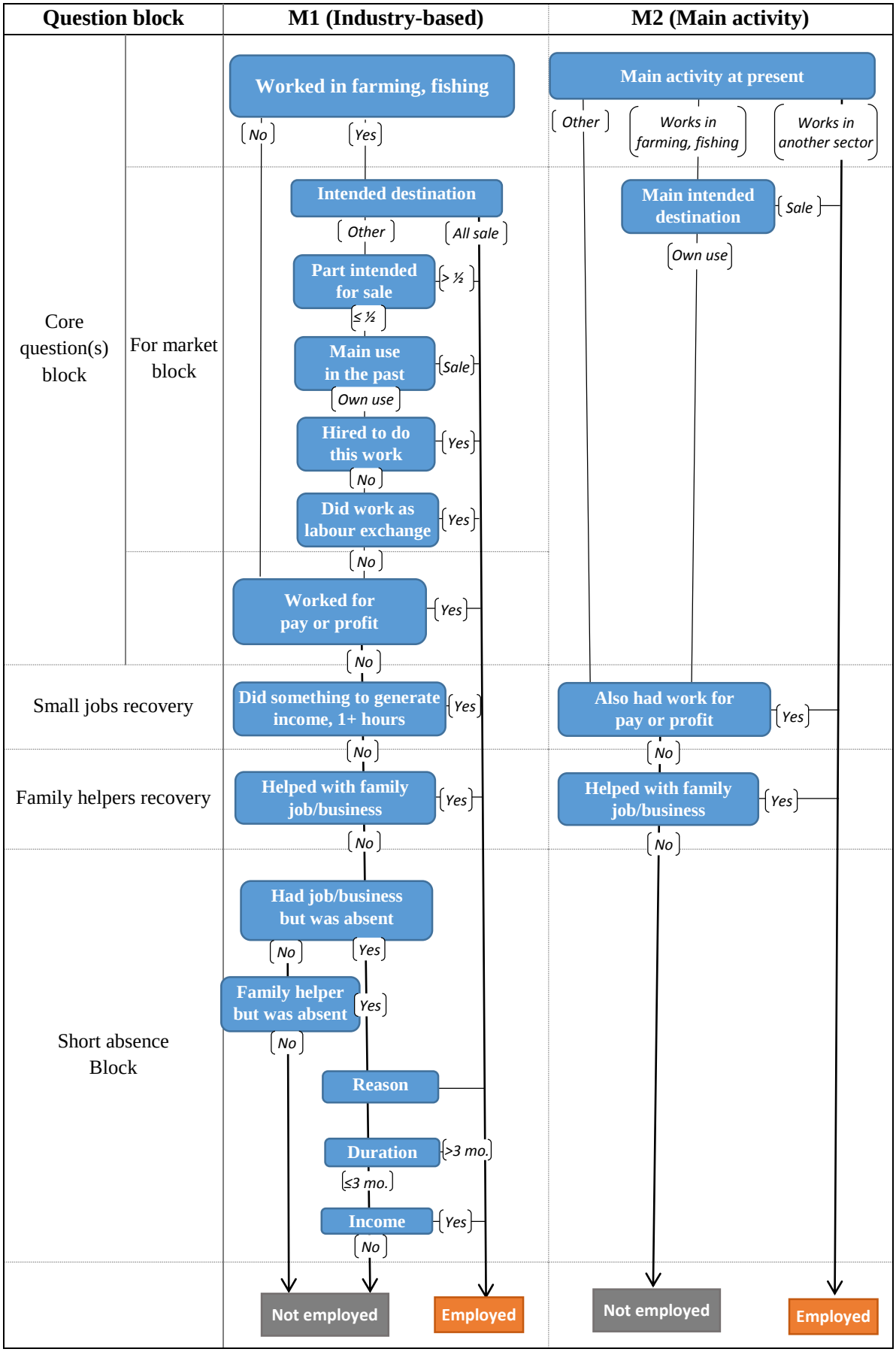
77. In the case of M2, the original response options "Farming/fishing mainly for sale" and "farming/fishing mainly for family use" were replaced with a single option "work in farming/fishing). Those reporting this as their main activity were then routed to a new question that asked for the main intended destination of the products (see Figure 12).

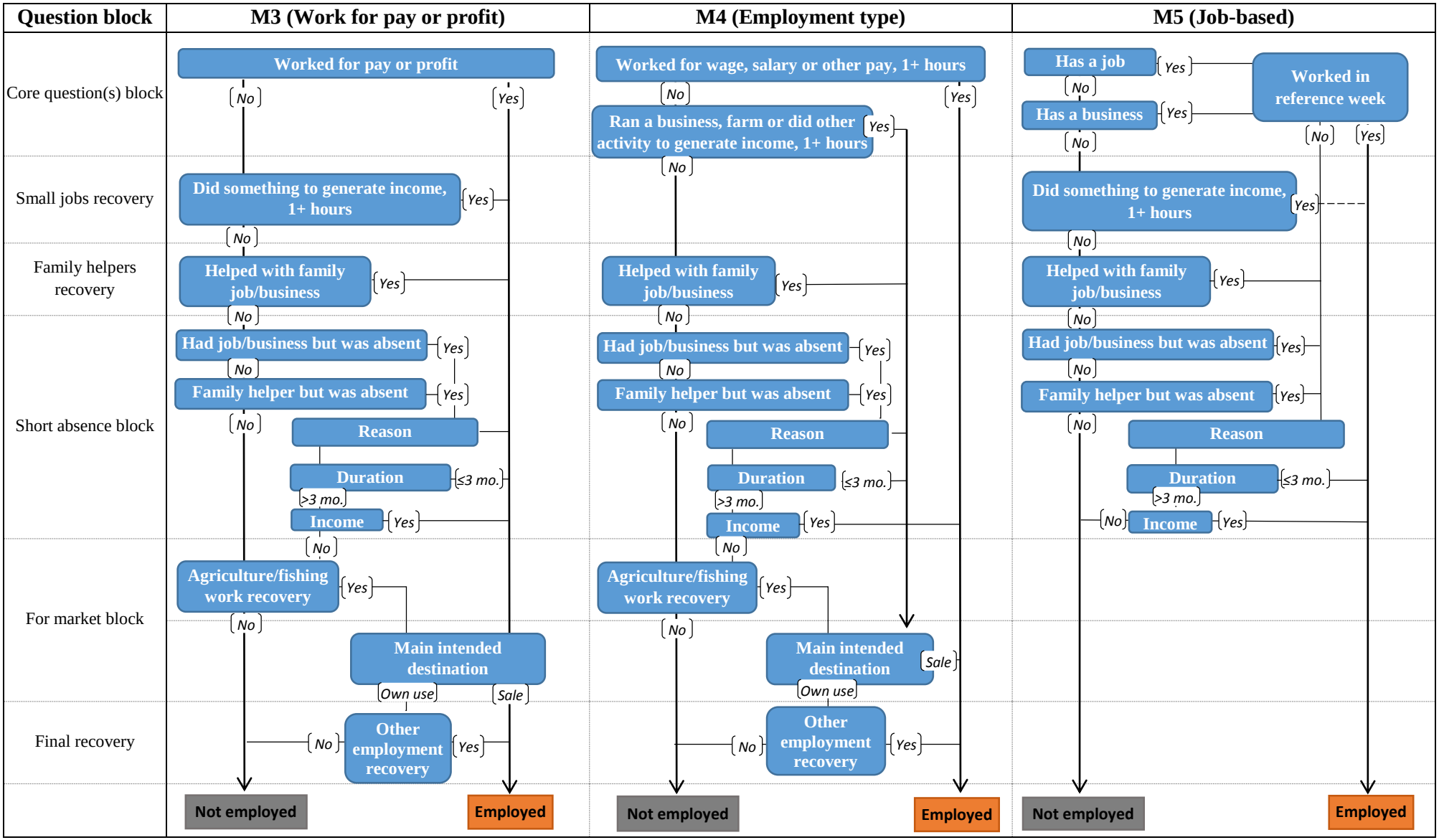
Figure 12: Revisions introduced to improve separate identification of employment in agriculture and own-use production work as main activity in M2

Wording *before* the CI tests	Wording *after* the CI tests
ACT01. What is your main activity at present? *Work for pay or profit* ::: 06 FARMING, FISHING MAINLY FOR SALE *Work without pay* 07 FARMING, FISHING MAINLY FOR FAMILY USE ::: *Other activities* :::	C01. Which of the following best describes what (NAME) is mainly doing at present? *READ* :: 02 Work in farming or fishing → C02 03 Work in a sector other than farming or fishing ::: C02. What are the main products from farming or fishing that (NAME) is working on? _____ C03. Are the products obtained from this activity mainly intended for sale or for family use? 1. ONLY FOR SALE 2. MAINLY FOR SALE 3. MAINLY FOR FAMILY USE 4. ONLY FOR FAMILY USE

78. Beyond these revisions, the translations of the updated models were also refined to address some of the issues observed with the interpretation of specific terms in selected languages. The revised models were further adapted to the national context in preparation for the field tests. Diagrams of the revised sequences to identify persons employed included the field tests are shown in Figure 13.

Figure 13: Revised sequences to identify persons employed used in the field tests, by model and question block.




Question block
M3 (Work for pay or profit)
M4 (Employment type)
M5 (Job-based)
Core question(s) block
Small jobs recovery
Family helpers recovery
Short absence block
For market block
Final recovery
Worked for pay or profit
Did something to generate income, 1+ hours
Helped with family job/business
Had job/business but was absent
Family helper but was absent
Reason
Duration
≤3 mo.
>3 mo.
Income
Agriculture/fishing work recovery
Main intended destination
Own use
Sale
Other employment recovery
Not employed
Employed
Worked for wage, salary or other pay, 1+ hours
Ran a business, farm or did other activity to generate income, 1+ hours
Has a job
Has a business
Worked in reference week
Yes
No

IV. EXPERIMENTAL SURVEY FIELD TESTS

79. During the second stage of testing, the five revised model questionnaires were assessed through a combination of quantitative analysis of the micro-data collected during the field tests and a review of the reports submitted by the pilot countries that focused on operational issues observed by field supervisors and NSO technical staff. In addition, direct observation of field operations by ILO staff were taken into consideration.

80. From a quantitative perspective, the results of the field tests were analysed with two main objectives. The first objective was to assess the extent to which the five approaches served to identify comparable numbers persons employed as per the revised definition (work for pay or profit). Issues evaluated here included possible problems of misclassification due either to over or under- identification of persons in employment.

81. The second objective was to evaluate the relevance of the different question blocks (core, small job(s) recovery, family helpers recovery, short absence and for market) as combined in the different models to identify selected types of jobs and workers, and as a result, the overall efficiency of each approach in capturing employment comprehensively.

A. Comparability in the identification of employed persons

82. As described earlier, the five model approaches were designed with the same objective: to comprehensively capture persons employed in the short reference period, using as basis the revised definition of employment as "work for pay of profit." However, the approaches did not have the same structure and sometimes, by design, lacked some of the question blocks that could lead to differences in the relative number of employed respondents identified. In addition, different strategies to establish the boundary between employment and own-use production were used that could lead to differences in the share of employed in agriculture identified by each approach. A separate report in this series will examine in more detail how work in agriculture was captured by the different approaches and their impact on the distinction between employment and own-use production in agriculture.

83. Given the split-sample design of the field tests, comparison of the shares of employed identified by the two models tested in each country can serve to provide overall evidence of whether the different approaches are equivalent in identifying the employed, or whether some led to over or under-identification of persons in employment. Ultimately, this type of assessment can provide an indication of whether the alternative approaches could be used to yield comparable results or not.

84. Table 2 shows the number and share of employed (as percentage of working age respondents), identified by model approach and country. The final column provides the difference in percentage points between the two models tested by each country. This last column provides an indication of whether any differences where obtained in the share of employed identified within the same context and their significance level.

85. Overall, the results show that in half of the pilot countries (Tunisia, Vietnam, Peru, Kyrgyzstan, and Ivory Coast), the two models tested identified equivalent shares of employed. The small

differences observed in these pilot countries were not found to be statistically significant, indicating that these reflect random variability in the samples, as expected.

86. At the same time, the tests yielded differences that are statistically significant (p=.01) in particular in countries that tested model M5 (Moldova, Cameroon and Ecuador). In these three cases, model M5 identified a higher share of employed compared to the alternative models tested (M3 and M1). The tests in Moldova yielded the largest difference of 10.6 percentage points between the two models. While Ecuador and Cameroon both documented differences in the order of 6.3 percentage points. The consistency in these results provides strong evidence that M5 could be leading to an over-identification of persons as employed. This pattern is explored in more detail in the next section.

Table 2. Differences between models in the share of working age respondents identified as employed, by country and model approach

Country	Model	No. Respondents		% Employed	Pp. difference between models
		Of working age (a)	Employed (b)	b/a*100	
Moldova	**M5**	925	451	48.8	10.6 **
Moldova	**M3**	880	336	38.2	-10.6 **
Cameroon	**M5**	1039	637	61.3	6.3 **
Cameroon	**M1**	1171	644	55.0	-6.3 **
Ecuador	**M5**	1172	780	66.6	6.3 **
Ecuador	**M3**	1217	733	60.2	-6.3 **
Philippines	**M3**	1233	867	70.3	4.7 *
Philippines	**M2**	1329	872	65.6	-4.7 *
Namibia	**M4**	977	319	32.7	4.4 *
Namibia	**M1**	1144	323	28.2	-4.4 *
Tunisia	**M3**	1505	595	39.5	2.8
Tunisia	**M2**	1628	598	36.7	-2.8
Vietnam	**M3**	1171	789	67.4	-2.8
Vietnam	**M4**	1249	876	70.1	2.8
Peru	**M3**	1121	762	68.0	2.1
Peru	**M4**	1105	728	65.9	-2.1
Kyrgyzstan	**M3**	1161	403	34.7	1.4
Kyrgyzstan	**M2**	1108	369	33.3	-1.4
Ivory Coast	**M3**	1054	772	73.2	1.1
Ivory Coast	**M1**	995	718	72.2	-1.1

** p=.05; ** p=.01*

87. The tests in two additional pilot countries also showed differences that were statistically significant although to a lesser extent (p=.05). These were models M2 versus M3 in the Philippines and models M1 versus M4 in Namibia. In the case of model M2, the results for the Philippines indicate that it identified a lower share of employed (-4.7 percentage points) compared to M3. This pattern is also observed in Tunisia and Kyrgyzstan, however, in those cases the differences are minimal and not statistically significant. Nevertheless, these results could suggest that model M2 may be under-identifying persons in employment compared to M3.

88. Finally, in the case of Namibia, model M1 also appeared to identify a lower share of employed (-4.4 percentage points) compared to M4. The comparison of M1 to M4 was not tested elsewhere. Nevertheless, in other countries where M1 was tested (Cameroon and Ivory Coast) a similar pattern is observed with M1 yielding a lower share of employed compared to the contrast model (M5 in Cameroon, M3 in Ivory Coast). Thus, similar to M2, it is possible that M1 may be under-identifying persons in employment compared to other models.

Misidentification of employed persons in model M5

89. As described earlier, a crucial difference in the structure of model M5 compared to other models was the exclusion of the "For market" question block (see para. 29). This block was introduced in other models as a new element to explicitly set the boundary between employment and own-use production of goods using as basis the "main intended destination of the production" as self-declared by respondents. In M3 and M4, this question block, in addition, included a recovery question for work in agriculture not previously reported.

90. By contrast, in M5, this block was excluded. Instead, confirmation questions relating to the boundary were included in two subsequent modules (see Figure 14). First, for persons already classified as employed, a confirmation question on the main intended destination of the production was included as part of the section on "Characteristics of the main job" and asked to persons reporting employment in agriculture or fishing. Second, for persons identified as own-use producers in the final section on "Own-use production of goods" a question was also included on whether the household regularly sold more than half of the products reported.

Figure 14: Confirmation questions on main intended destination of production included in M5.

Questionnaire Section	Target respondents	Question formulation
Main job	Persons identified as employed in agriculture or fishing (15+ years)	M5D03b. Thinking about the products you worked on, are they mainly intended for sale of for consumption by your family? 01 ONLY FOR SALE 02 MAINLY FOR SALE 03 MAINLY FOR FAMILY USE 04 ONLY FOR FAMILY USE
Own-use production of goods	Persons identified as own-use producers (15+ years)	M5I04. Does the household regularly sell any part of the products or animals produced? 01 YES 02 NO → M5I05. How much does the household regularly sell…? 01 More than half 02 Less than half

91. Although these two questions were not used during data collection to decide on the classification of respondents as employed or not employed, they could be used during analysis to assess potential problems with over and under-reporting of work in agriculture as employment or as own-use production work.

92. Table 3 illustrates the impact of using these two questions to reclassify respondents on the share of employed identified by M5. It shows: (a) the original share of employed identified by model M5 and the percentage point difference with the contrast model tested in the three pilot countries (Moldova, Cameroon and Ecuador); (b) the impact when the first boundary confirmation question (M5D03b) is used to *exclude* respondents identified as employed but who reported producing *mainly* for family consumption (if no second job is reported); and (c) the impact when the second boundary confirmation questions (M5I04 and M5I05) are used to *reclassify as employed* respondents who reported producing goods mainly intended for family consumption but who also indicated that the household regularly sells more than half of the products.

Table 3. Impact of boundary check and agriculture recovery on share of employed identified by M5 vs. other models

		Share of employed (%)			Pp. difference between models (%)		
		Original (a)	With boundary check (b)	With agriculture recovery (c)	(a)	(b)	(c)
Moldova	**M5**	48.8	40.8	40.8	-10.6**	-2.6	-2.6
	M3	38.2	38.2	38.2			
Cameroon	**M5**	61.3	49.5	52.0	-6.3**	5.5**	3.0
	M1	55.0	55.0	55.0			
Ecuador	**M5**	66.6	61.5	62.3	-6.3**	-1.2	-2.0
	M3	60.3	60.3	60.3			

*** p=.01*

93. The results in column (b) indicate that once the confirmation question is used to *exclude* respondents initially identified as employed in M5, the percentage point difference with the contrast model (M3) is significantly reduced in two of the three pilot countries (Moldova and Ecuador). For example, in the case of Moldova the difference in the share of employed identified by M5 and M3 is reduced from 10.6 to only 2.6 percentage points and is no longer statistically significant. This clearly points to a problem of over-identification as employed of persons producing agricultural goods mainly for own final use in M5 compared to M3.

94. Furthermore, the results in column (c) indicate that once respondents initially identified as not employed but recovered from the module on "Own-use production of goods" (i.e. producing goods of which the household regularly sells more than half), the observed differences between M5 and M1 are further reduced in two of the three countries (Cameroon and Ecuador) and, most important, are no longer statistically significant. That is, we observe in addition, a problem of under-identification of persons employed in agriculture in model M5 compared to M3 and M1.

95. In summary, analysis of the field tests results indicate that model M5 had problems both with an over-identification and under-identification of employed persons. On one hand, the exclusion of the "for market" question block as part of the identification of persons employed led to a higher number of respondents being classified as such compared to M3 (Ecuador and Moldova). In addition, the lack of a recovery question on work in agriculture, also led to an under-reporting of employment in agriculture compared to M1 (Cameroon). This points to the importance of including an explicit

block of questions to capture work in agriculture and to assess the boundary between employment and own-use production, such as done in M3 and M4 through the "for market" question block in countries where mixed and/or subsistence agricultural and fishing activities are prevalent.

Under-identification of employed persons in model M2

96. As described earlier, model M2 was designed as the shortest sequence of the five alternative approaches. Compared to other models, it did not include a block on "short absence", nor a targeted recovery question for work in agriculture (see Figure 13). Being the shortest sequence, M2 did not include additional confirmation questions that could be used to assess potential problems with misclassification as a result of excluding these two elements from the sequence. Nevertheless, it is possible to assess their impact by excluding the "short absence block" and "agriculture recovery question" from model M3 and comparing the results in the share of employed identified by both models.

97. Table 4 shows the impact of excluding the "short absence block" in M3 on the share of employed identified and the resulting percentage point difference with M2. It shows that excluding the question on short absence from M3 reduces the observed differences in the share of employed identified by both models in all three countries (see columns b). This suggests indeed that M2 had some problems with under-identification of persons employed due to the exclusion of the question block on short absence. Nevertheless, this does not fully explain the observed differences. The fact that in the Philippines the remaining difference (-3.5%) is still statistically significant suggests that there is another factor we are omitting that leads to an under-identification of persons employed in M2 compared to M3.

Table 4. Impact of questions to identify persons employed but on short absence in the reference period

		Share of employed (%)		Pp. difference between models (%)	
		Original (a)	Absence excluded (b)	(a)	(b)
Philippines	**M2**	65.6	65.6	-4.7 **	-3.5 *
	M3	70.3	69.1		
Tunisia	**M2**	36.8	36.8	-2.8	-2.1
	M3	39.6	38.9		
Kyrgyzstan	**M2**	33.3	33.3	-1.3	-0.4
	M3	34.7	33.7		

** p=.05; ** p=.01*

98. Further evaluation (not shown) of the shares of employed by broad branch of economic activity (main job) did not reveal significant differences between models 2 and 3 that would point to a problem with under-identification of persons employed due to under-reporting of work in agriculture in M2. Nevertheless a more detailed analysis regarding the measurement of work in agriculture will be presented in a separate report in this series.

99. Overall, these findings suggest that approaches that start with a question on main activity at present, as done in M2, likely require inclusion of an additional question on short absence from employment to more comprehensively capture persons employed in the reference period.

Impact of model approach controlling for other factors

100. This section further evaluates the observed differences in the share of employed identified by the alternative sequences tested, controlling for other factors. For this purpose we pool all the data sets from all countries together yielding 23,186 observations in total. We do the analysis through logistic regression modelling where the dependent variable is a binary variable (*EMP*) that takes the value of 1 if the person is employed and 0 if the person is not employed.

101. The general regression model takes the form:

$$logit(p_{EMP}) = \log\left(\frac{p_{EMP}}{1 - p_{EMP}}\right) = \beta_0 + \beta_1 x_1 + \cdots + \beta_J x_J + \varepsilon_i$$

102. Where:
p_{EMP} is the probability that an individual is identified as employed
β_0 is the model intercept
$\beta_J x_J$ are the covariates included in the model and their associated coefficients

103. The regression model has been fitted using a step-wise approach, where each equation includes an additional set of covariates known to impact the probability that a person is employed or not. Table 5 shows the results of the logistic regression models performed, named **Eq (1) – (6)**. The β coefficients have been transformed into Odds Ratios (OR), to facilitate their interpretation.

104. The first equation **Eq (1)** shows the simplest regression that includes only the predictor variable of interest; that is the model approach (M1-M5), using as reference model M3 and a constant term. Each equation adds an additional variable as control up to **Eq (6)** which presents the most complete regression possible. **Eq(2)** adds a control variable for country. The results for the country dummy variables are not shown, as our interest is to assess the effects of the model approach on the likelihood of a respondent being classified as employed, net of other factors. **Eq(3)** controls for an additional context variable, the place of residence of the respondent, with urban being the reference. **Eq(4)** and **Eq(5)** further control for two key demographic characteristics, sex and age group, with male and the age-group 30-54 years taken as reference. Finally **Eq(6)** introduces a control for level of educational attainment, with secondary education specified as the reference. Overall, **Eq(6)** shows the impact of the model approach (M1-M5) on the identification of persons employed, controlling for selected characteristics of the respondents and country where the tests took place.

105. By looking at the results in **Eq(6)** for the predictor variables **M1** to **M5**, we see a similar pattern as the one found in Table 2. M5 appears to be over identifying persons in employment with respect to model M3, the reference model. Indeed, the odds of a respondent being identified as employed by M5 are close to 40% higher (*OR* 1.370) compared to M3, after controlling for key socio-demographic and contextual characteristics. This finding is statistically significant at the 1% level. The reasons for this over-identification were explored in the previous section and are at least partly due to the exclusion of the "for market block" from the M5 sequence.

106. In addition, there is some evidence that model M2 may have under identified persons in employment compared to M3. The results for M2 nevertheless are much weaker (significant at 10% level) than the results for M5. In this case, the odds of a respondent being identified as employed by M2 are about 15% lower (*OR* 0.866) compared to M3. Still, they might indicate an issue in the M2 sequence that could be due to the exclusion of the "short absence block" as discussed earlier. The remaining models (1 and 4) were found to give equivalent results to the reference model 3.

Table 5. Impact of model approach on identification of employed persons controlling for selected socio-demographic and contextual characteristics (Odds ratios)

	Eq (1)	**Eq (2)**	**Eq(3)**	**Eq(4)**	**Eq(5)**	**Eq(6)**
Model	*OR*	*OR*	*OR*	*OR*	*OR*	*OR*
M1	0.800	0.941	0.945	0.869	0.869	0.860
M2	0.652***	0.901	0.899	0.897	0.892	0.866*
(M3)	—	—	—	—	—	—
M4	1.094	1.117	1.119	1.104	1.095	1.080
M5	1.153	1.339***	1.345***	1.359***	1.375***	1.370***
Country						
	No	Yes	Yes	Yes	Yes	Yes
Place of residence						
(Urban)			—	—	—	—
Rural			0.896	0.887	0.899	0.951
Sex						
(Male)				—	—	—
Female				0.458***	0.426***	0.421***
Age group						
15-29 years					0.265***	0.264***
(30-54 years)					—	—
55+ years					0.223 ***	0.227***
Education level						
Primary						0.999
(Secondary)						—
Post-secondary						1.743***
Constant	0.245***	0.657***	0.716***	1.152***	2.092***	1.990***
Wald chi2	13.11	90.63	96.44	133.60	602.72	623.54
Prob > chi2	0.0107	0.0000	0.0000	0.0000	0.0000	0.0000
Pseudo R	0.0068	0.0717	0.0722	0.0963	0.1647	0.1696
Observations	23,186	23,186	23,186	23,186	23,186	23,186

Note: All the regressions where performed with clusters by sex, strata, age group and country

*** p<0.01, ** p<0.05, * p<0.1

107. On balance, the results from the multivariate analysis are consistent with the aggregate level findings discussed in the previous section. Furthermore, when we look at results for other controls they all seem to meet a-priori expectations. For example, women were less likely than men to be classified as employed, as were those in the young and old age cohorts (15-29, 55+) compared to those in the primary working age group (30-54 years). Likewise, persons with post-secondary education have a greater likelihood of being classified as employed compared to those with secondary education.

B. Relevance of selected question blocks and overall model efficiency

108. In addition to assessing the comparability of the five approaches in identifying persons employed as per the latest standards, it is also important to evaluate the overall efficiency of each design. To do so, this section examines the relative contribution that each question block made to the identification of employed persons in the five models tested. Evaluation of the relative importance of each question block to identify employed persons can serve to assess which approach may be more or less respondent-friendly and, ultimately, efficient. It can also make evident which question blocks are crucial to identify certain types of workers, and which may be considered as optional depending on the national context.

109. The question blocks assessed are those described in the previous section and refer to the revised model sequences assessed during the field tests (see Figure 13). Questions included in each block can contribute to identify persons employed in two ways. First and most commonly, by prompting respondents to report their employment activity. Second, by helping identify potential misreporting of situations that do not fully meet the requirements to be consider employment as per the latest international statistical standards, and re-routing those cases to the appropriate survey module.

110. The overall contribution of each question block to identify employed persons is examined first. This is followed by an examination of potential misreporting. In both cases, results have been aggregated by model approach. Thus, the percentage of employed persons (confirmed cases and misreported cases) shown by question block refers to the *average* across the pilot countries that implemented each model.

Identification of confirmed employment cases

111. Table 6 shows the share of *confirmed* employed persons identified by each question block; that is, cases that fulfil the requirements to be considered employed as per the latest international standards. As illustration, we note that in countries that applied model M1, the core question block (which included the section on work in agriculture plus the initial question on "work for pay or profit" used in the M3 approach) served to identify, on average, around 85 % of all employed captured by this model. An additional 4.8% of all employed (i.e. not captured with the core question block), on average, were identified through the small jobs recovery question block. The recovery question for family helpers served to identify another 5.3% of employed persons. Finally, an additional 4.9% of employed persons were identified through the short absence question block.

Table 6. Contribution of each question block to identify employed respondents, by model approach (%)

	Share of employed				
	M1	**M2**	**M3**	**M4**	**M5**
Share of employed identified by					
Core question(s) block	85.0%	89.2%	86.0%	91.8%	81.2%
Small jobs recovery	4.8%	8.6%	3.1%		9.3%
Family helpers recovery	5.3%	2.2%	4.1%	3.9%	8.3%
Short absence	4.9%		2.6%	3.8%	1.1%
For market block					
Agriculture recovery			4.0%	0.3%	
Final employment recovery			0.3%	0.2%	
Total pooled cases (n)	1,570	1,839	5,262	1,919	1,868

Core question block

112. Comparing across model approaches, the results in Table 6 indicate that most of the employed are identified in the "core" question block of each sequence, as would be expected. Although the approach taken in the core block is rather different across models, in all cases it serves to identify well over 80% of all persons employed. In terms of efficiency, M4 appears to perform best identifying, on average around 92% of the employed in the pilot countries that tested this model. This is followed by M2 with 89% of the employed being identified by the core question block. The least effective core block appears to be M5, identifying the lowest share of employed (81.2%) compared to all other models, although M1 and M3 are not far off with 85% and 86% of all employed being identified by their core block, respectively.

Small jobs recovery

113. In the case of the block to recover small jobs, the results by approach show important differences across the models tested. Overall, the recovery questions for small jobs appear to be particularly important in M2 and M5. In the case of M2, this is expected given the focus of the core block on capturing persons who consider their *main* activity to be employment. The small job recovery block in this case serves the function of capturing persons who perceive employment as their *secondary* activity (8.6% of all employed), for example among those who initially self-identify as students, with household responsibilities, etc.

114. For M5, however, the high percentage of employed persons identified by the small jobs recovery block (9.3% of all employed) points to problems with interpretation of the core block that asked respondents whether they had a job or a business. This finding is consistent with the cognitive results that documented problems with a narrower interpretation of the term "business" than intended in M5.

115. M1 and M3 show lower percentages of employed (4.8% and 3.1% respectively) being identified by the small jobs recovery question compared to M2 and M5. Nevertheless, given that the small jobs recovery questions used in M1 and M3 are identical, it is interesting to point out its greater

relevance in the M1 sequence. This is further explored in the analysis by selected job characteristics (see section D, below).

Family helper recovery

116. Results regarding the relevance of the "family helpers recovery block" attest to its importance for capturing this group of workers. It is generally known that many contributing family workers tend not to self-identify as employed when interviewed and thus require a targeted question to report their involvement in the family business. Nevertheless, comparing the share of employed identified by this block of questions across models, it becomes apparent that this is particularly crucial for M5 (8.3% of all employed), followed by M1 (5.3% of all employed).

Short absence block

117. Although not included in all model approaches, the results from the tests point also to the relevance of the "short absence question block" to fully identify persons employed in the short reference period. In the more typical LFS model sequences (M3 and M4), the short absence block served to identify between 3% and 4% of the employed, and its contribution was greatest in M1 (4.9%). In the case of M2, the assessment presented in the previous section indicated that the exclusion of this block from the sequence led to an under-identification of employed persons by this model vis-à-vis M3. Thus, even when M2 makes reference to the *main activity* of the respondent *at present*, this is not sufficient to capture persons employed who may have been absent from their job or business in the reference week. Similarly, the results for M5 in Table 6 suggests that the "short absence block" still identifies some employed (1.1% on average) even when using an approach that places emphasis on whether the respondent *has a job or a business at present.*

For market block

118. In the case of the "for market block", the results highlighted in Table 6 refer in particular to the recovery question for persons employed in agriculture included in models M3 and M4. The results highlight the particular relevance of this recovery question in M3, where on average it served to identify 4% of all employed captured by this model. Its relevance in M4, by contrast, was rather small, serving to identify only about 0.3% of employment. This suggests that, compared to other models tested, the core block in M3 is less adequate in capturing employment in agriculture. This finding coincides with the results from the CI which indicated that the expression "for profit" had some problems of interpretation, particularly for persons engaged in small-scale market-oriented agricultural and fishing activities who did not see themselves as "working for profit".

Identification of misreported cases

119. The preceding analysis in section B can be interpreted as highlighting the potential under-identification of employment if different blocks of questions were excluded. This analysis can to some extent be reversed to gain insight on cases where over-identification of employment did or could have occurred as the respondents did not fulfil all of the criteria specified by the international standards. While the tests were not designed with assessment of over-identification as a specific objective, some analysis is possible using the information available. This can include, for example, respondents who report having a job but not working because of being interviewed during the off-season or because of an extended unpaid absence; respondents working to produce goods mainly

for own final consumption; respondents reporting unpaid forms of work, etc. Any such cases, indicate the potential for over-identification of employment if not adequately addressed in the questionnaire sequence.

120. Table 7 shows the extent to which some of these cases of potential over-identification of persons as employed were present in the pilot studies by model approach. It presents information with respect to three specific types of mis-identification which could or did occur.

a. The first type *(short absence block)* relates to cases which were initially identified as employed while absent from their job or business but subsequently reclassified as not employed due to the reason for absence (off-season) or the duration (greater than 3 months) and lack of remuneration during the absence. These cases would have been incorrectly classified as employed if additional questions on reason, duration and continued receipt of remuneration were not asked.

b. The second type *(for market block)* are those who were initially identified as employed but subsequently identified as producing mainly for their own use. In the case of M3 and M4 these respondents were correctly reclassified as not employed, whereas for M5 (as discussed earlier in the report) they were not reclassified but can at least be quantified.

c. The third type *(type of remuneration in main job)* is based on an analysis of the types of payment received by the respondents as reported through questions on the characteristics of the main job. Two types of cases are highlighted, namely those who reported receiving no remuneration (other than family helpers) and those for whom data on remuneration was missing suggesting some risk that the respondents should not have been classified as employed.

Table 7. Average level of potential misclassification of employment by criterion and model (%)

	Relative to total employed identified (%)				
	M1	**M2**	**M3**	**M4**	**M5**
Short absence block					
Not working due to off-season[+]	0.5	-	1.5	0.3	2.7
Absent for 3+ months without pay[+]	0.5	-	0.2	0.3	2.3
For market block					
Mainly producing for own final use	-	-	2.7[+]	3.8[+]	15.9*
Type of remuneration in main job					
Without remuneration (excl. family helpers) *	3.0	-	1.6	0.2	5.1
Missing data on remuneration[°]	0.7	-	0.0	1.6	0.7
Total pooled cases (n)	1,570	1,839	5,262	1,919	1,868

+ Misreported but not misclassified as employed.
** Misreported and misclassified as employed.*
° Potential misreported case, status unverified due to missing data.

121. Assessment of the "short absence block" shows that in all approaches a few respondents reporting employment activity, did not fully meet the criteria to be counted as such due to the nature of their absence from work. M5, in particular, appeared to result in a higher over-identification of such cases compared to other models (5% versus 1.7% or less). Indeed, the "short absence block"

in M5 appeared to play a more crucial role in identifying cases of mis-reporting than in recovering cases of persons employed but absent in the reference week as shown in Table 6 (5% versus 1.1%).

122. The results shown for the "for market block" most notably show the significant over-identification of respondents producing goods mainly for family use as employed for M5 (15.9%). The level was much lower for M3 and M4 (2.7% and 3.8% respectively). This broadly suggests that respondents for the most part understood the core and recovery question blocks in these approaches as referring to work done to generate an income. No figures are shown for M1 and M2 because, in these model, the core question block is designed with the dual objective of capturing persons employed and own-use producers of agricultural goods

123. Finally, checks for cases of persons classified as employed but not reporting receiving remuneration revealed possible additional cases of misreporting. These were minor in the case of M3 and M4 (1.6% and 0.2% respectively), and slightly more prevalent for M1 and M5 (3% and 5.1% respectively).

124. Taken together, the findings discussed in this section again point to M4 as the most efficient design. This is evidenced by the highest share of employed identified through its core block of questions (91.8%); lower relevance of the recovery questions targeting family helpers (3.9% vs. 4.1%) and agriculture (0.3% vs. 4.0%) compared to M3; as well as the lower levels of misreporting identified through the analysis. By contrast, results indicate that M5 suffered from a number of problems including the least efficient core question block (81.2%), high need for recovery question blocks for small jobs (9.3%) and family helpers (8.3%), as well as problems with over-identification of workers producing mainly for family consumption as employed (-15.9%) in particular.

125. The findings also highlight the importance of the recovery question blocks in all approaches. Only the final employment recovery included in models M3 and M4 appeared to yield few additional cases and thus could be removed from the sequences without impacting the overall effectiveness of the models in capturing employment in accordance with the latest standards. Adding to this point, the findings similarly put in evidence the need for an explicit "main destination check" to apply the new standards, despite the refined wording of the core and recovery question blocks to refer in various ways to work done to generate an income (e.g. for pay or profit, for a wage, job or business, etc.) in approaches M3, M4 and M5. Other than the need for explicit questions on absence and the market orientation of production, the risk of over-identification did not appear to be high based on responses to questions on remuneration. However, this risk should not be ruled out and should be borne in mind when designing and testing questionnaires

C. Model efficiency by sex and place of residence

126. In addition to examining the relevance of each question block and overall efficiency of the different approaches in capturing employment, it is also useful to broadly assess how the approaches work for different types of respondents, in particular, for women and men, and for persons living in urban and in rural areas.

Sex differences

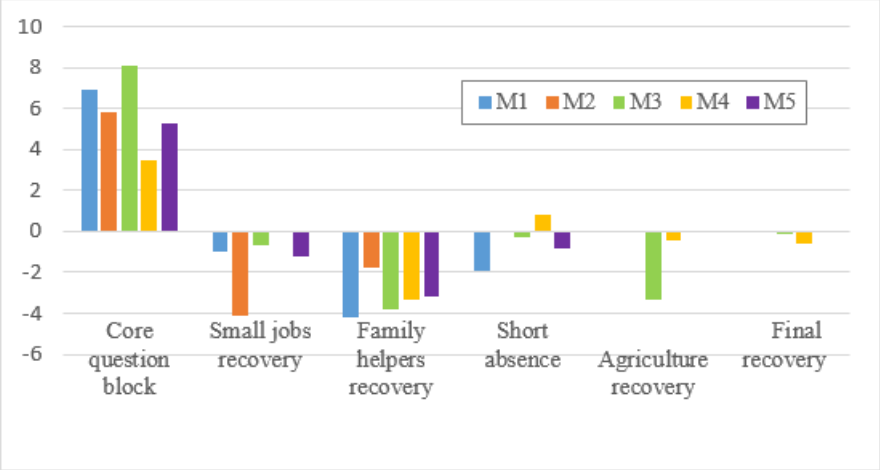
127. Table 8 shows the distribution of employed men and women by question block where they were identified as employed and model approach. Overall, the results indicate that a higher share of employed men compared to women tend to be identified by the core employment questions. This is particularly the case for M1 and M3 where the gender difference in the relative shares of employed identified by the core employment question block is about 7 percentage points. This pattern is illustrated more clearly in Figure 15, which shows the percentage point difference between the shares of employed men and employed women identified by each question block and model.

Table 8. Distribution of employed men and women by question block where they were identified and model approach (%)

	Employed men (%)					Employed women (%)				
	M1	**M2**	**M3**	**M4**	**M5**	**M1**	**M2**	**M3**	**M4**	**M5**
Core question block	88.2	91.6	89.1	93.4	83.5	81.3	85.7	81.0	89.9	78.2
Small jobs recovery	4.2	7.0	2.8		8.8	5.2	11.1	3.5		10.0
Family helper recovery	3.3	1.5	2.7	2.3	7.0	7.5	3.2	6.5	5.6	10.2
Short absence	4.2		2.3	4.2	0.8	6.1		2.6	3.4	1.6
For market block										
Agriculture recovery			2.7	0.1				6.0	0.5	
Final recovery			0.4	0.0				0.5	0.6	
Total pooled cases (n)	822	1,121	3,019	977	1,038	749	718	2,247	940	831

128. While the recovery question blocks remain relevant also to comprehensively capture male employment, including in small jobs, as contributing family workers, and in agriculture, they are seen to be of particular importance for women. This is undoubtedly linked to the characteristics of the jobs where women tend to concentrate, being more substantially represented among family helpers etc. For each of the additional question blocks, and across all five models, a higher percentage of employed women were recovered than employed men. For example, while 7% of employed men were recovered by the small jobs recovery block in M2, the corresponding level for employed women was 11.1% (see Table 8).

Figure 15: Differences in the shares of employed men and employed women identified by each question block and model approach (% Males – % Females).



129. Overall, M4 appears to show the smallest gender differences in the way the question blocks serve to identify employed men and women (e.g. 3.5 percentage points difference in the share of employed men and women identified by the core question block respectively).

Urban-rural place of residence differences

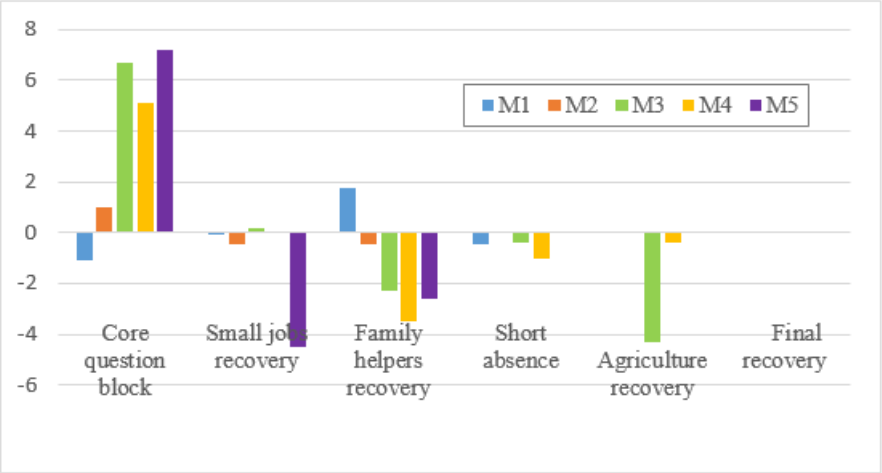
130. In the case of place of residence, comparing how the models worked overall to identify employed persons living in urban versus in rural areas, the patterns observed are more variable by model approach (see Table 9). Overall, the core question block in three of the models (M3, M4, and M5) appeared to work better to identify the employed in urban areas compared to rural areas. In these three models, the share of employed identified by the core block was between 5 and 8 percentage points higher in urban areas compared to rural areas (see Figure 16). This difference however, was only 1 percentage point in the case of M2, although this model still appeared to operate better in urban areas compared to rural areas. The core block in M1, however, appeared to work better in rural areas, although the difference is similarly only 1 percentage point. This is not surprising considering its emphasis in capturing work in agriculture and fishing.

Table 9. Distribution of employed respondents living in urban and in rural areas by question block where they were identified and model approach (%)

	Urban (%)					Rural (%)				
	M1	**M2**	**M3**	**M4**	**M5**	**M1**	**M2**	**M3**	**M4**	**M5**
Core question block	83.6	89.6	89.6	94.3	85.7	84.7	88.6	82.9	89.2	78.5
Small jobs recovery	5.4	8.5	3.2		6.5	5.5	9.0	3.0		11.0
Family helper recovery	5.8	1.9	2.9	2.0	6.8	4.1	2.4	5.2	5.5	9.4
Short absence	5.2		2.3	3.4	1.1	5.7		2.7	4.4	1.1
For market block										
Agriculture recovery			1.6	0.1				5.9	0.5	
Final recovery			0.0	0.0				0.0	0.0	0.0
Total pooled cases (n)	774	912	2,249	886	745	796	928	3,016	1,031	1,123

131. In this case, M1 and M2 showed the lowest differences in performance of the "core question" block across urban and rural populations. However, the core block of questions in M4 served to identify a slightly higher share of employed in rural areas compared with M2 (89.2% vs. 88.6%), and the highest share of employed in urban areas compared to other models (94.3%).

Figure 16: Differences in the shares of employed living in urban and in rural areas identified by each question block and model approach. (% Urban - % Rural)



132. Beyond this, it is clear the M5 performed relatively poorly in rural areas, with a core block that identified the lowest share of employed (78.5%) and heavy reliance on the small jobs and family helper recovery questions for comprehensive measurement. Also of note is the heavy reliance of M3 on the agriculture recovery question to capture employment, particularly in rural areas (5.9%).

133. Taken together, the findings discussed in this section point to M4 as performing best from a gender perspective given the lowest gap observed in the shares of employed men and employed women identified by its core question block. While this was not the case for capturing employment among persons living in urban and rural areas, M4 still performed better than M3 and M5.

134. The next best approach in terms of overall consistency across groups appeared to be M2. This approach, in particular, seemed to perform similarly well among persons living in urban and in rural areas. While some gender differences are observed in the way the core block worked, this is precisely because the approach focuses on capturing the "main activity" of the respondent as self-declared. Thus, M2 necessarily requires the inclusion of a "small jobs" and "family helper" recovery to adequately capture employment, particularly among women, but also among men.

135. The results further showed that M1 worked relatively well among men and women, as well as among persons living in rural and in urban areas. However, given its particular focus on work in agriculture and fishing at the start of the sequence, there may be a need to further assess its potential to introduce burden among respondents living in urban areas. This issue was not observed during the field tests, however, the urban areas selected in the samples tended to be in regions were agricultural work is overall widespread.

136. Model M3, while being one of the more traditional approaches in national LFS, showed relatively larger differences in its performance between women and men, as well as between

persons living in urban and in rural areas. As in the previous section, its greater reliance on recovery questions, particularly for work in agriculture, was also made evident.

D. Model efficiency by selected job characteristics

137. This section examines in more detail the relevance of each question block, and model approach, to capture selected types of jobs. For this, the focus is on types of workers whose main job is likely to be underreported if the survey questions are not adequately worded to fit their labour market circumstances. This can include, for example, identification of own-account workers, contributing family workers, workers in agriculture and workers with low-hours jobs. As in the previous sections, the country results have been aggregated by model. Thus, the percentages shown by question block refer to the *average* across the pilot countries that implemented each model.

Workers by status in employment (of main job)

138. Table 10 shows the contribution of each question block to identify employed respondents in different employment relationships (i.e. employee, employer, own-account worker and family helper) by model. Comparisons across models can provide further evidence of how well each model approach works to capture workers in specific types of jobs. Conversely, it can shed light on the types of workers that require targeted recovery questions to ensure they are identified as employed, regardless of the model approach used.

139. For example, all model approaches appear to work relatively well to efficiently capture persons who work as *employees* in their main job. For this group of workers, over 90 percent are identified by the "core question block" across all five models. Nevertheless, M4 appears to be most efficient in identifying the largest share of employees in the core set of questions (96% of all employees). By contrast, M5 requires has the greatest need for recovery questions to capture employees (91.7% of all employees captured by the core block).

Table 10. Distribution of employed respondents by status in employment of main job, by question block where they were identified and model approach (%)

	Employees (%)					Employers (%)				
	M1	**M2**	**M3**	**M4**	**M5**	**M1**	**M2**	**M3**	**M4**	**M5**
Core question block	91.8	93.8	93.3	96.2	91.7	88.3	100.0	94.7	94.2	93.8
Small jobs recovery	2.6	6.1	2.0		4.1	5.6	0.0	2.3		6.2
Family helpers recovery	1.2	0.2	0.7	0.1	3.0	1.8	0.0	0.0	0.0	0.0
Short Absence	4.4		3.0	3.1	1.1	4.3		0.7	4.4	0.0
For market block										
Agriculture recovery			0.7	0.1				2.3	1.4	
Final recovery			0.3	0.7				0.0	0.0	
Total pooled cases (n)	**446**	**1,088**	**2,322**	**1,056**	**700**	**52**	**35**	**158**	**92**	**73**
	Own-account workers (%)					**Contributing family workers (%)**				
	M1	**M2**	**M3**	**M4**	**M5**	**M1**	**M2**	**M3**	**M4**	**M5**
Core question block	84.4	88.3	84.8	94.4	86.1	54.6	34.7	48.9	53.1	33.1
Small jobs recovery	10.0	10.7	4.7		13.1	5.8	38.9	3.9		21.7
Family helpers recovery	1.7	1.1	0.9	0.6	0.5	28.5	26.5	30.4	41.7	39.7
Short Absence	3.9		2.2	4.5	0.2	11.1		1.8	4.7	5.5
For market block										
Agriculture recovery			7.0	0.4				14.6	0.6	
Final recovery			0.4	0.1				0.4	0.1	
Total pooled cases (n)	**820**	**598**	**2,074**	**570**	**807**	**226**	**118**	**630**	**199**	**289**

140. In the case of *employers*, it is interesting to note that M2 is the only model where all employers (in the three pilot countries that tested this approach) were identified right away in the "core question block" (100% of all employers). This indicates that employers perceive employment as their main activity and thus can report it easily with this approach. Surprisingly, the core questions on M5 did not perform as well, capturing around 94% of employers, despite the questions in this block asking whether the person has a job or a business. Again this likely points to the problems with interpretation of the term "business". It is also noteworthy to highlight that the core questions in M1 captured the lowest share of employers (88.3% of all employers) compared to other models. Considering that the core sequence in M1 includes the same core questions as M3, just placed after a detailed section on work in agriculture, this suggests that an order effect may have negatively impacted reporting of employment outside of agriculture (ie. industry and services) in M1. This issue is further explored later on in this section.

141. Overall, as expected greater identification issues are observed for persons whose main job is as an *own-account worker* or as a *family helper*. For *own-account workers*, the results indicate that M4 performs best in quickly identifying the highest share of own-account workers in the "core question block" (94.4% of all own-account workers). M5 in particular, required a small jobs recovery question block to capture this group of workers. In the case of M3 the need for a recovery question to capture own-account workers in agriculture becomes more evident with 7.0% of all own-account workers being identified by the agriculture recovery question.

142. Looking at the case of *family helpers*, which is predominantly comprised of contributing family workers, the results portray a rather diverse group. Across models, between one third and half of

this group can self-identify as employed in the "core question block", with the highest share being captured by M1 (54.6% of all family helpers) and M4 (53.1% of all family helpers). A recovery question on small jobs can also contribute to their identification; nevertheless this is not sufficient. In all approaches, an explicit question on "helping with the business or job of a family member" is necessary to recover between 26% and 42% of this group.

143. In the particular case of M2, the results indicate that only a small share of contributing family workers perceive this as their main activity (34.7 % of all family helpers). Rather it tends to be a considered as secondary activity (38.9% of all family helpers) or altogether not recognized as work and thus requiring a specially targeted question to be captured (26.5% of all family helpers).

144. Model M3 appears to have problems identifying contributing family workers particularly in agriculture as evidenced by the large share of family helpers identified by the agriculture recovery question (14.6% of all family helpers).

145. Overall, the results of the analysis by status in employment of the main job suggests that all model approaches require a complete question sequence that includes not only a core question block, but also recovery question blocks specifically targeting small jobs, family helpers, and in the particular case of M3, work in agriculture, for comprehensive identification of persons employed. Model M4 appears to be the most robust sequence in terms of efficiently identifying persons in different types of employment relationships. This is evidenced by the high relative share of employed in each status in employment group identified by its core question block.

Use of status in employment categories to facilitate identification of the employed

146. The findings so far, point to M4 as the more efficient design overall in identifying persons employed in the short reference period. As described earlier, the core question block in M4 relies on a two-question approach that targets identification of employed persons by making reference to two broad categories of status in employment: work for wage, salary (i.e. dependent work) and work in own business (i.e. independent work). This basic distinction is particularly useful in the M4 sequence as it allows limiting the number of respondents who are sent to the new "for market" block in order to assess the "main intended destination of the production." As indicated earlier, this is expected to reduce potential respondent burden, in particular for those working as employees, to whom there is no need to apply the question on main intended destination.

147. Table 11 provides further details on how the two questions included in the core block of M4 performed to identify persons in employment. The results show that the first question (i.e. "Did you do any work for a wage, salary or any other pay?") captured the bulk of persons working as employees as intended (between 91.1% and 96.6% of all employees), but also up to a quarter of the self-employed (between 14.9% and 24.8% of all self-employed) and a third of contributing family workers (between 17.3% and 33.6 of all contributing family workers).

148. The second question (i.e. "Did you run or do any kind of business, farming or other activity to generate an income") served to identify the majority of self-employed respondents (between 64.3% and 80.2%) and an important share of family helpers (between 12.7% and 56.1%), as expected. Nevertheless, it also served as a recovery question for a small share of workers who were eventually identified as employees (between 1.1% and 2.3%). Note that the column percentages do not add to

100 because some of the employed were only identified through the recovery question blocks and the short absence block, which are not shown in Table 11.

Table 11. Identification of employed respondents in core question block by confirmed employment status in their main job (M4)

	Employee			Self-employed			Family helpers		
	NAM	**VNM**	**PER**	**NAM**	**VNM**	**PER**	**NAM**	**VNM**	**PER**
Q1. Worked for a wage, salary	91.1%	95.9%	96.6%	24.8%	24.8%	14.9%	33.6%	17.3%	12.3%
Q2. Ran business, farming	2.3%	1.1%	1.5%	64.3%	73.6%	80.2%	26.6%	56.1%	12.7%

149. These findings suggest a couple of important implications for LFS designs that follow the M4 approach. First, while each of the core questions is generally targeted at identifying persons employed in a particular type of employment relationship, respondents in other situations may nevertheless self-identify as employed through these questions, given their wider interpretation as referring to work done to generate an income (i.e. regardless of the type of pay). As a result, it is important to keep in mind that these starting questions cannot (and should not) be used to establish the status in employment of the worker in their main job. Rather additional questions on the characteristics of the main job are necessary to correctly determine the nature of their employment relationship.

150. More so, if the core questions in M4 are further used for differential routing purposes, as done in the ILO LFS pilot studies to introduce the new "for market" question block, some care may be needed to ensure those working as self-employed but not going through the "for market" block fully meet the new criterion of producing mainly with the intention to sell or barter. In the case of the ILO pilot studies the questions tended to predominantly function as intended. Evidence from questions on income type suggest a low likelihood of M4 misclassifying respondents as employed due routing issues. Table 12 shows the distribution of respondents who said "Yes" to Q1 (Did you do any work for a wage, salary or other pay) by their employment status and type of pay as reported in the section on characteristics of their main jobs. Among those respondents who turned out to be self-employed (excluding family helpers), we note that the vast majority reported receiving payment in cash or a combination of cash and in-kind pay.

Table 12. Share of employed identified in Q1 by confirmed employment status and type of pay in main job (M4)

	Peru		Vietnam		Namibia	
	Employee	Self-employed	Employee	Self-employed	Employee	Self-employed
Type of pay						
Cash	66.1%	90.3%	66.2%	78.7%	86.3%	88.3%
Cash & In kind	33.7%	9.7%	33.6%	21.3%	8.8%	0.0%
In kind	0.2%	0.0%	0.2%	0.0%	0.7%	0.0%
No pay	0.0%	0.0%	0.0%	0.0%	0.5%	0.0%
DK	0.0%	0.0%	0.0%	0.0%	3.8%	11.7%
Total cases (n)	**399**	**41**	**392**	**16**	**169**	**30**

Workers by branch of economic activity

151. Examination of the shares of employed identified by broad branch of economic activity provides additional insights regarding the relative efficiency of each approach in capturing jobs in agriculture, in particular (see Table 13).

Table 13. Distribution of employed respondents in agriculture and in other sectors, by question block where they were identified and model approach (%)

	Agriculture (%)					Industry and Services (%)				
	M1	**M2**	**M3**	**M4**	**M5**	**M1**	**M2**	**M3**	**M4**	**M5**
Core question block	91.9	68.1	70.7	80.8	73.5	81.8	92.3	91.1	92.7	87.2
Small jobs recovery	0.5	26.9	3.7		13.9	7.3	6.2	2.9		6.2
Family helper recovery	4.5	5.1	8.0	5.2	10.9	5.5	1.5	3.0	3.3	6.0
Short Absence	3.1		2.7	4.0	1.7	5.4		2.8	4.0	0.5
For market block										
Agriculture recovery			13.8	1.1				0.1	0.0	
Final recovery			1.0	+				0.5	0.4	
Total pooled cases (n)	**792**	**306**	**1,835**	**379**	**928**	**776**	**1,520**	**3,424**	**1,538**	**941**

+Unreliable results due to very small numbers

152. Not surprisingly, model M1 comes out as the most efficient approach in identifying persons employed in agriculture. Its core question block, which starts with a dedicated section targeting work in agriculture, identifies the highest share of this group of workers (91.9%) compared to the core blocks of other models. Nevertheless, this seems to come at a cost for the identification of employed persons in other branches of economic activity as suggested earlier, capturing the lowest share of employed in industry and services (81.8%) compared to other models.

153. The results for M2 appear to suggest that a lower share of persons employed in agriculture perceive this as their main activity compared to persons employed in industry and services (68.1% versus 92.3%). Hence the crucial importance of including a recovery question in M2 to capture employment in agriculture perceived as a secondary activity (26.9%).

154. In the case of M3, the results indicate that its "core question block" is not very adequate to fully identify persons employed in agriculture, capturing only around 70.7% of this group of workers (compared to 91.1% of those employed in industry and services). Indeed, M3 is particularly dependent on the inclusion of a dedicated "agriculture recovery question" to identify close over one tenth (13.8%) of this group of workers.

155. Results for M5 evidence a problem with under-identification of persons employed in agriculture. This is indicated in Table 13 by the relatively low percentage of persons employed in agriculture (73.5%) identified by its "core question block" which makes M5 quite dependent on recovery questions for comprehensive identification of those employed in agriculture. This issue combined with the problems with misidentification of own-use production work as employment highlighted in previous sections indicates clear risks in the use of M5, as designed for the pilots, in settings where work in agriculture is prevalent.

Persons with low-hours jobs

156. An additional assessment can be made by examining the relative effectiveness of the different approaches to capture persons employed in "small or casual jobs" that could be subject to underreporting. This group is often quoted as at particular risk of being undercounted by commonly used questionnaire designs for LFS. The pilot studies did not include detailed questions on contract characteristics to identify "small or casual jobs". Nevertheless, it is possible to look at persons who reported usually working only a few hours per week in their main jobs. Although working few hours per week may not necessarily indicate the job is casual, atypical or of short duration, it could still be illustrative to assess the relative efficiency of each model approach in capturing this group of workers compared to those usually working a more substantial number of hours per week

157. Table 14 shows the share of respondents identified as employed broken down into two groups: persons usually working 10 or less hours per week in their main job (low-hour jobs) and persons usually working more than 10 hours per week in their main job. Overall, it is evident that, across models, the core employment questions are seldom sufficient to comprehensively capture this group. In the case of M2, only 29 percent of low-hour workers perceive employment as their main activity, and thus a recovery question is essential. It is important to note also the relative importance across models of the "small jobs" and "family helpers" question blocks to capture persons with low-hour jobs compared to those usually working more hours per week in their jobs. Yet again, among these group of workers, the findings suggest that M4 tends to be the most efficient design, with the core question block identifying close to 80% of workers with low-hour jobs.

Table 14. Distribution of employed respondents usually working few hours per week (≤10 hrs) by question block where they were identified and model approach (%)

	Usually working ≤10 hrs/week (%)					**Usually working >10 hrs/week (%)**				
	M1	**M2**	**M3**	**M4**	**M5**	**M1**	**M2**	**M3**	**M4**	**M5**
Core question block	53.7	50.4	44.7	79.7	54.8	87.3	92.1	87.9	92.0	82.1
Small jobs recovery	17.6	42.0	14.0		14.2	4.0	6.5	2.6		9.1
Family helper recovery	20.4	7.7	24.5	11.7	19.0	3.9	1.4	3.1	3.8	7.9
Short absence	8.3		3.3	8.5	11.9	4.8		2.5	3.5	0.8
For market block										
Agriculture recovery			12.7	0.0				3.6	0.3	
Final recovery			0.5	0.0				0.4	0.3	
Total (%)	**111**	**188**	**332**	**35**	**54**	**1,460**	**1,652**	**4,933**	**1,882**	**1,815**

V. CONCLUSIONS AND RECOMMENDATIONS

158. The ILO LFS pilot studies provided a wealth of evidence on a number of issues of importance to the design of survey questions to support comprehensive identification of employed persons as per the latest statistical standards. Based on the findings from the comparative analysis, four of the five approaches tested showed strong potential for being used as model sequences that could yield consistent results provided that each includes the relevant question blocks needed for comprehensive coverage of persons employed in different type of jobs and contexts. These blocks are needed to minimise both over and under-identification of employment, either of which can occur. Considering the types of socio-economic contexts in which the pilot tests were conducted, the results point to the need for an explicit question block to establish the main intended destination of production to capture employment as per the latest statistical standards. The pilots further evidenced some of the specific strengths and issues to take into consideration when selecting one of the approaches for use in national data collection.

159. M1, which was specifically designed for contexts with high levels of subsistence activity, showed particularly good promise for capturing employment in agriculture and for establishing the new boundary with own-use production of goods in a consistent and respondent-friendly way. Despite its initial emphasis and detailed coverage of work in agriculture, its core question block appeared to work equally well in rural and in urban areas. This nevertheless requires further testing given that the urban areas covered in the pilots testing M1 were in regions with high overall levels of agriculture and/or fishing. A question is whether this approach will work similarly well, that is without introducing significant respondent burden, for example in large cities or metropolitan areas. A particular strength of the M1 approach is its dual ability to identify persons in employment and subsistence foodstuff producers in the short-reference period, without the risk of double-counting the same activity as employment and own-use production work. This being said, the M1 sequence tested to identify the employed is not designed to fully capture all own-use production of goods. When this is a main aim, the LFS will need to include an additional module covering in addition activities such as fetching water, collecting firewood, construction or renovation of own-dwelling, manufacture of goods for household or family use, as relevant for a more comprehensive coverage.

160. M2 showed good promise as a relatively simple, respondent-friendly sequence to capture employed persons. The approach, however, is heavily dependent on a good design of its core question block. The pilot results indicated that the M2 core question block, aimed at capturing the main activity of the respondent as self-declared, is particularly sensitive to its formulation and mode of implementation. The starting question should be formulated to capture what the respondent is "mainly doing", avoiding reference to words such as "status" or "situation". In addition, the response options should be designed to be read out by interviewers as a way to establish the scope of the question. Provided these basic design features have been observed and confirmed through testing in the national context, M2 appeared to work equally well among persons living in rural as well as urban contexts. Nevertheless, because of its initial focus on "main activity", M2 absolutely requires inclusion of the various question blocks for comprehensive identification of persons employed on a level comparable to other approaches. In particular, the recovery blocks for "small jobs" and "family helpers" are necessary to fully capture employment, especially when not recognized as main activity by respondents. In addition, although not done in the ILO pilot studies, the results indicated there is a need to include a "short absence" block to capture persons employed but on temporary absence from their job in the short reference period.

161. As with M1, the approach taken in M2 to establish the boundary between employment and own-use production was found to be easy to understand by respondents and to minimize the potential for double-counting the same activity as employment and own-use production. In the M2 sequence tested, the boundary is established only in cases where respondents report work in farming or fishing as their *main activity*. This still allows identification of an important group of subsistence foodstuff producers (those for whom this is their main activity), but it remains a *partial* identification of subsistence foodstuff producers and of producers of goods for own final use more generally. Implications are particularly important from a gender perspective, as women may be more likely to report household or family responsibilities as their main activity, but nonetheless be involved in subsistence foodstuff production as well as in producing other goods intended mainly for final use such as collecting firewood or fetching water. Thus, as with M1, when the LFS objective is to fully capture participation in own-use production of goods, the sequence will need to include an additional supplementary module as done in the full M2 model tested.

162. M3, which was based on one of the most commonly used approaches in national LFS, was shown to rely importantly on the various recovery blocks to ensure comprehensive identification of persons employed. In particular, the cognitive tests documented interpretation problems with the term "for profit" as used in its core question block. This impacted in particular the identification of own-account workers, contributing family workers and persons employed in agriculture. M3 also showed important differences between men and women in the way its core question block worked to capture employment. Countries using this approach in their national LFS will need to take into consideration these issues and decide on the need to include the various recovery question blocks depending on the nature of the national labour market. On balance, the sequence appears to be most suitable for contexts with more structured labour markets with relatively low levels of employment in agriculture, casual self-employment, low hour jobs or contributing family work.

163. M4 seemed to be the most efficient and versatile of the approaches tested. Its core question block was shown to work quite effectively with female and male respondents. Although the core block was not as evenly effective in urban and rural areas, it still performed relatively well to capture employment in agriculture, persons employed as own-account workers and contributing family workers. M4 further served to reduce potential burden by limiting the number of respondents sent to the new "for market question block" needed to establish the boundary between employment and own-use production work. Nevertheless, the findings indicated that the core questions were interpreted more broadly as work to generate an income, and as such, should not be used to establish or confirm the status in employment of the respondent. Further assessment at national level should be carried out to minimize any potential misclassification of own-use producers as employed that could occur due to the broader interpretation of the core question block in M4 although we can note this risk appeared to be low in the pilot countries where M4 was tested.

164. M5 appeared to be affected by a number of problems which impacted its overall performance vis-à-vis the alternative approaches tested. Interpretation problems particularly with the terms "job" and "business" used in the core question block led to both over- and under- identification of persons as employed. Overall, the sequence did not seem to achieve its objective as a design meant to improve reporting among self-employed persons and those on temporary absence from employment. The core terms used in the M5 approach were not particularly easy to translate into the various languages covered in the ILO LFS pilot studies. In particular, no equivalent terms were identified to directly translate the term "job". While the term "business" was interpreted more narrowly than intended, impacting in particular reporting among persons working in small-scale

own-account business activities, farmers and fishers. These issues might not be present in contexts where English is the language of interviewing, or where labour markets are more formal and structured. This, however, remains to be tested.

165. Beyond these general conclusions for each of the model approaches tested, a number of specific recommendations for designing question sequences to identify persons employed in a short reference period can be made based on the findings from the ILO pilot studies. In particular, the core question block should be designed to capture the bulk of the employed population by using simple terms commonly understood as referring to work done to generate an income, and include explicit references to the start and end of the chosen reference period. The wording chosen should take into consideration potential interpretation issues by persons working in their own business activity and, special groups as relevant in the national context, for example, farmers or fishers.

166. Recovery questions should be included, as needed in the national context, to improve identification of persons with short-time, atypical or casual jobs, or those who may consider their employment as a secondary activity. To this end, recovery questions should include relevant descriptive examples (e.g. *make things to sell*) as well as colloquial terms used to refer to casual work, if existing in the national language. Where work in family businesses may be a source of employment, an additional targeted question that emphasizes "help" provided in the family business should be also included. A short absence question block is also generally necessary, and should be adapted to the national context, taking into account in particular the existence of seasonal employment and/or extended unpaid absences.

167. In countries where a part of the population is involved in mixed or subsistence agriculture, animal husbandry, fishing and/or forestry, an additional "for market question block" will be required to adequately identify those engaged in market activity (producing with the main intention to sell). Alternative approaches may be used to incorporate a "for market question block" as part of the identification of persons employed. These should be tested in the national context, to identify the most suitable approach. In all cases, a good practice is to try to first identify persons working in agriculture, animal husbandry, fishing and/or forestry, and then use a set of follow-up questions to establish the main intended destination of the products. As with the core and recovery blocks, the questions should be designed using common and/or colloquial terms used by the target population (i.e. farming, raising animals, etc).

168. Overall, a main lesson learned from the ILO pilot studies is that alternative question structures may be used to generate consistent estimates of employment. However, to achieve this, significant testing and adaptation to the national context will be required. The broad equivalence of results across different model questionnaires observed suggests that comparability in results does not necessarily depend on complete input harmonisation across surveys or countries. At the same time, input harmonization will not necessarily result in comparable results, as differences in languages, cultural context and translation issues can impact interpretation of key terms and phrases.

169. Indeed, the ILO LFS pilot studies have highlighted the critical role of national adaptation of questionnaires. It is essential for language used in questionnaires to be commonly understood by different groups of the population. Clear risks arise from direct translation between languages or direct use of terms such as 'profit' or 'business'. However, the extent of this risk can only truly be assessed at the national level through a good questionnaire development and testing process. Materials being developed by the ILO in follow up to the pilot studies will offer a useful reference

point for the development of LFS questionnaires but the requirement for national adaptation and testing will remain.

170. The pilot studies have also provided ample evidence that the risks of misclassification or over/under-identification of employment are heavily related to the nature of the employment activities of respondents. In contexts with diverse labour markets, where formal and informal jobs are prevalent, including a set of recovery question blocks is particularly crucial to improve identification of persons employed in casual or short-hours jobs and small own-account business activities, as well as for persons working in family businesses or helping in jobs held by family members. In these settings, reliance on a single or core question block is likely to result in an under-identification of persons employed in these types of activities, creating risks of skewing analysis across key characteristics such as gender, location of residence, sector of economic activity etc.

171. Given the growth of non-standard or atypical forms of employment globally[5], countries with more structured and formal labour markets, may also consider testing, at regular intervals, the potential need for incorporating recovery questions in their national labour force surveys targeting in particular new forms of employment relationship that may not be viewed as such by respondents to ensure continued comprehensive coverage of employment activity.

[5] (ILO, 2016).

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