

Establishment Surveys That Measure Employment And Wages, 2011

ILO Survey Of Country Practices

Volume 2 of Sources and Methods: Labour Statistics

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1. Introduction

The International Labour Organization's (ILO) Department of Statistics publishes the series *Sources and Methods: Labour Statistics* (formerly *Statistical Sources and Methods*) which contains information on the scope of the statistics, their definitions and the methods used by the national statistical services in establishing the statistics published. These *Sources and Methods* publications describe the methodologies of a range of labour statistics and, to date, ten such volumes have been produced. Volume 2 of *Sources and Methods: Labour Statistics* presents methodological descriptions of the national statistics of employment, wages, hours of work, and labour cost of employees, which are derived from establishment surveys. The corresponding statistical series are available online in the ILO Department of Statistics' statistical database LABORSTA (see <http://laborsta.ilo.org>).

Volume 2 has two main purposes: 1) to provide basic information on the sources and methods used in each country in compiling the statistics which are published by the ILO, so as to enhance the usefulness of these statistics for different purposes; and 2) to indicate the differences between the national series with regard to their coverage, definitions, methods of measurement, methods of data collection, reference periods, etc. Volume 2 has been updated two times, the last time in 1995.

The descriptions presented here refer to establishment or enterprise surveys, industrial or commercial surveys or censuses, or specially designed labour cost surveys carried out since 1990. They were prepared on the basis of information provided by national statistical agencies or governments in response to a specially designed methodological questionnaire sent in 2011. In some cases, the information was collected from information published on the respective website of the National Statistical Office (NSO) or the International Monetary Fund's (IMF) Special Data Dissemination Standard. Each description was submitted to the country concerned for comments, which were taken into account if received within the limits of the publication programme. The current version of Volume 2 of Sources and Methods contains descriptions for 172 surveys in respect of 84 countries, areas and territories.

This paper presents common characteristics in the methodology of establishment surveys across countries, and points out similarities and differences in the way countries process their surveys. Only the most interesting results are displayed and discussed in this paper.

2. Method

In order to compile Volume 2 of *Sources and Methods: Labour Statistics*, each ILO member state received a request to complete a methodological questionnaire with information about the most important features of the establishment survey or surveys carried out in their country since 1990 used as sources of statistics of employment, wages, hours of work and labour cost.

A total of 60 countries completed the methodological questionnaire. A number of these countries had more than one establishment survey on employment and wages, resulting in 141 completed questionnaires. For an additional 24 countries, data on establishment surveys were gathered through information published on the respective website of the NSO or the IMF's Special Data Dissemination Standard. For these countries, the questionnaires completed by the ILO were submitted to the respective country for comments and completion. No feedback was received for 14 countries. Thus, a total of 172 questionnaires in 84 countries **out of 185 ILO member countries** were gathered and processed, out of which 13 are located the region of Asia and Pacific; 5 are Arab States; 24 are in Western Europe; 25 are located in Eastern Europe and Central Asia; 11 are in the Americas; and 6 countries are located in Africa (see table 1).

	Asia & Pacific	Arab States	Western Europe	Eastern Europe & Central Asia	Americas	Africa	All regions
Number of completed questionnaires	30	5	52	47	32	6	172
Number of responding countries per region	13	5	24	25	11	6	84

Table 1: Number of completed questionnaires and responding countries by region

Table 2 shows all countries that completed questionnaires in each of the six regions. The number in parenthesis indicates how many questionnaires were completed for each country, region or territory. The asterisk indicates that data on establishment surveys were gathered through information published on the respective website of the NSO or the IMF's Special Data Dissemination Standard and feedback from the countries was not received in time to be included in this report.

Asia & Pacific	Arab States	Western Europe	Eastern Europe & Central Asia	Americas	Africa
Australia (3)	Iraq	Austria	Albania (2)*	Anguilla*	Botswana*
Bhutan	Jordan	Belgium	Armenia, Republic of (4)	Bermuda	Egypt
Indonesia*	Qatar	Cyprus	Azerbaijan, Republic of	Brazil	Mauritius, Republic of
Islamic Republic of Iran (4)	Saudi Arabia	Denmark (2)	Belarus, Republic of	Canada	Morocco*
Japan (2)	United Arab Emirates	Finland (2)	Bulgaria	Canada	South Africa*
Korea, Republic of		France	Croatia (2)	Colombia (12)	Tunisia
Macao, China		Germany	Czech Republic (2)	Jamaica	

Malaysia (9)		Great Britain (4)	Estonia*	Mexico (9)	
New Zealand (2)		Greece (3)*	Georgia*	Peru*	
Philippines (3)		Iceland	Hungary*	Saint Lucia*	
Singapore		Ireland	Kazakhstan*	United States (3)	
Sri Lanka		Israel (4)	Kyrgyz Republic (3)		
Thailand		Italy	Latvia		
		Jersey	Lithuania (3)		
		Luxembourg (6)	Macedonia, Republic of		
		Malta (3)	Moldova, Republic of (3)		
		Norway (2)	Montenegro		
		Portugal	Poland (3)		
		Puerto Rico	Romania (2)		
		Spain (4)	Russian Federation (2)		
		Sweden	Serbia		
		Switzerland (3)	Slovak Republic (2)		
		The Netherlands	Slovenia (4)		
		Turkey (6)	Tajikistan*		
			Ukraine (3)		

Table 2: Completed questionnaires by each country in each region

3. Structure of the questionnaire

The methodological questionnaire was designed to provide a synthesized picture of the country practices in the use of establishment surveys, while at the same time, allowing for comparisons between the practices of how countries conduct establishment surveys.

The questionnaire is divided into nine different key topics

- A. Identification
- B. Periodicity and coverage
- C. Concepts and operational definitions
- D. Classifications
- E. Questionnaire design
- F. Sample design
- G. Data collection
- H. Estimates
- I. Historical information

Each of these key topics provides different questions with pre-defined answer options as well as space for additional comments to allow for a general overview of the commonly used approaches to establishment surveys in each country, region or territory.

4. Analysis

The analysis is not an exhaustive list of all results of the methodological questionnaires on establishment surveys; rather, it is a careful selection of the most important similarities, differences and interesting facts. It thus focuses primarily on the following key topics and areas:

B. Periodicity and coverage includes the topics of industry coverage, size coverage, geographical coverage, worker coverage, and institutional sector coverage.

C. Concepts and operational definitions show what concepts are included in establishment surveys in each country and indicate different components that each concept encompasses.

D. Classifications include the type of industry classifications used.

E. Questionnaire design incorporates the unit(s) of observation.

F. Sample design includes sampling units and the types of sample.

The main findings of the analysis are summarized below under the following headings: 1) industry coverage; 2) size coverage; 3) geographical coverage; 4) worker coverage; 5) institutional sector coverage; 6) concepts and operational definitions; 7) industry classifications; 8) unit(s) of observation; 9) sampling unit(s); and 10) type of sample.

4.1 Industry coverage

The industry coverage indicates the economic activities covered by the survey, and, in cases where the coverage is limited, which groups of industries or activities are included or excluded. All but one country indicated the industry coverage and it is divided into the following groups according to the International Standard Industrial Classification (ISIC) Rev. 4 of economic activities:

- A. Agriculture, forestry and fishing
- B. Mining and quarrying
- C. Manufacturing
- D. Electricity, gas, steam and air conditioning supply
- E. Water supply, sewerage, waste management and remediation activities
- F. Construction
- G. Wholesale and retail trade; repair of motor vehicles
- H. Transportation and storage
- I. Accommodation and food service activities
- J. Information and communication
- K. Financial and insurance activities
- L. Real estate activities
- M. Professional, scientific and technical activities
- N. Administrative and support service activities
- O. Public administration; compulsory social security and defense

- P. Education
- Q. Human health and social work activities
- R. Arts, entertainment and recreation
- S. Other service activities
- T. Activities of households as employers
- U. Activities of extraterritorial organizations and bodies

Table 3 indicates the number of surveys in each region covering different industries. For example, there are a total of 71 surveys including *agriculture, forestry and fishing* in their surveys on establishments. The regional distribution indicates that 7 questionnaires in the Asia and Pacific region incorporate *agriculture, forestry and fishing*, 3 in the Arab States, 13 in Western Europe, 41 in Eastern Europe and Central Asia, 4 in the Americas, and 3 in Africa. The number in parenthesis in the last column indicates the percentage of surveys that include the respective industry classification (out of 172 surveys).

Industry coverage	Asia & Pacific	Arab States	Western Europe	Eastern Europe & Central Asia	Americas	Africa	All regions (%)
Agriculture, forestry and fishing	7	3	13	41	4	3	71 (41%)
Mining and quarrying	18	4	42	44	8	5	121 (70%)
Manufacturing	20	5	45	46	16	5	137 (80%)
Electricity, gas, steam and air conditioning supply	16	5	43	45	9	5	123 (72%)
Water supply, sewerage, waste management and remediation activities	16	5	42	44	9	5	121 (70%)
Construction	15	5	45	45	9	5	124 (72%)
Wholesale and retail trade; repair of motor vehicles	16	5	41	45	15	5	127 (74%)
Transportation and storage	17	5	43	45	14	5	129 (75%)
Accommodation and food service activities	17	5	41	44	15	5	127 (74%)
Information and communication	15	5	43	44	13	5	125 (73%)
Financial and insurance activities	15	5	38	44	9	5	116 (67%)
Real estate activities	15	4	40	43	12	5	119 (69%)
Professional, scientific and technical activities	17	5	42	43	12	5	124 (72%)
Administrative and support service activities	15	5	42	43	12	5	122 (71%)

Public administration; compulsory social security	8	3	25	43	7	3	89 (52%)
Defense	7	3	21	36	5	2	74 (43%)
Education	15	5	40	43	11	4	118 (69%)
Human health and social work activities	15	4	38	41	11	5	114 (66%)
Arts, entertainment and recreation	15	5	39	42	12	4	117 (68%)
Other service activities	14	4	39	42	14	4	117 (68%)
Activities of households as employers	3	3	3	7	1	1	18 (10%)
Activities of extraterritorial organizations and bodies	1	2	4	9	1	1	18 (10%)
Answer not provided	0	0	0	0	1	0	1 (1%)
Total surveys	30	5	52	47	32	6	172

Table 3: Number of responses in each region using a certain industry classification

More than one answer could be indicated in each questionnaire and the most common combinations of industry coverage are displayed in figure 1. Out of the 172 surveys, 138 cover at least *manufacturing*; while 11 surveys cover only *manufacturing*. A total of 72 surveys cover at least *agriculture, forestry and fishing*. There are 27 surveys excluding *agriculture, forestry and fishing; household activities; and extraterritorial activities and/or public administration and defense*. A total of 51 responses exclude either *public administration and/or defense and/or household and/or extraterritorial organizations*; and only 10 questionnaires include all industries covered.

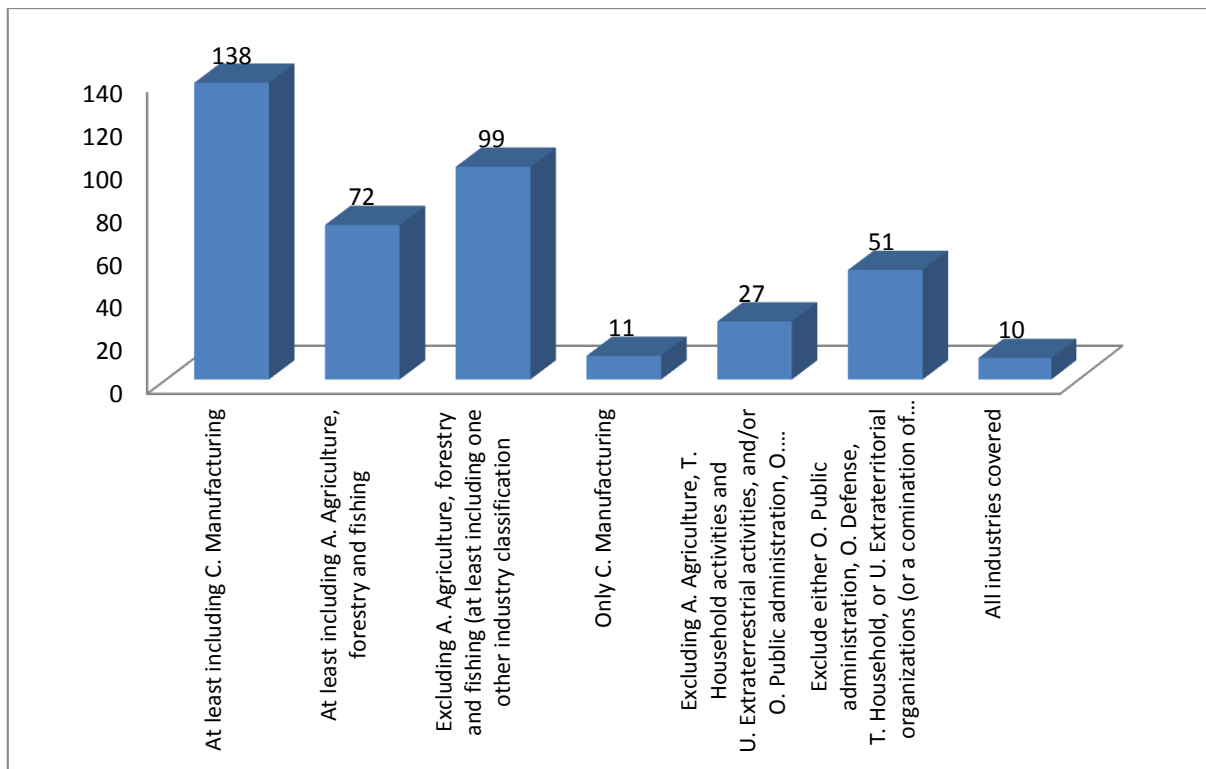


Figure 1: Number of completed questionnaires with different industry coverage

4.2 Size coverage

Size coverage refers to the minimum size of establishment covered by the survey. Figure 2 shows the size coverage of all surveys. Approximately a third (34 per cent) cover *all establishments of any size*, while about 42 per cent cover establishments with less than 4 employees. Roughly 66 per cent of all responses comprise establishments with less than 9 employees while about 84 per cent incorporate establishments with less than 19 employees. Roughly 10 per cent of all surveys include establishments with 20 employees and above while 6 per cent of cases *other size coverage*, such as a qualitative size coverage (“medium” or “large” establishments) or coverage according to revenue, is used. A total of 14 responses did not indicate a size coverage.

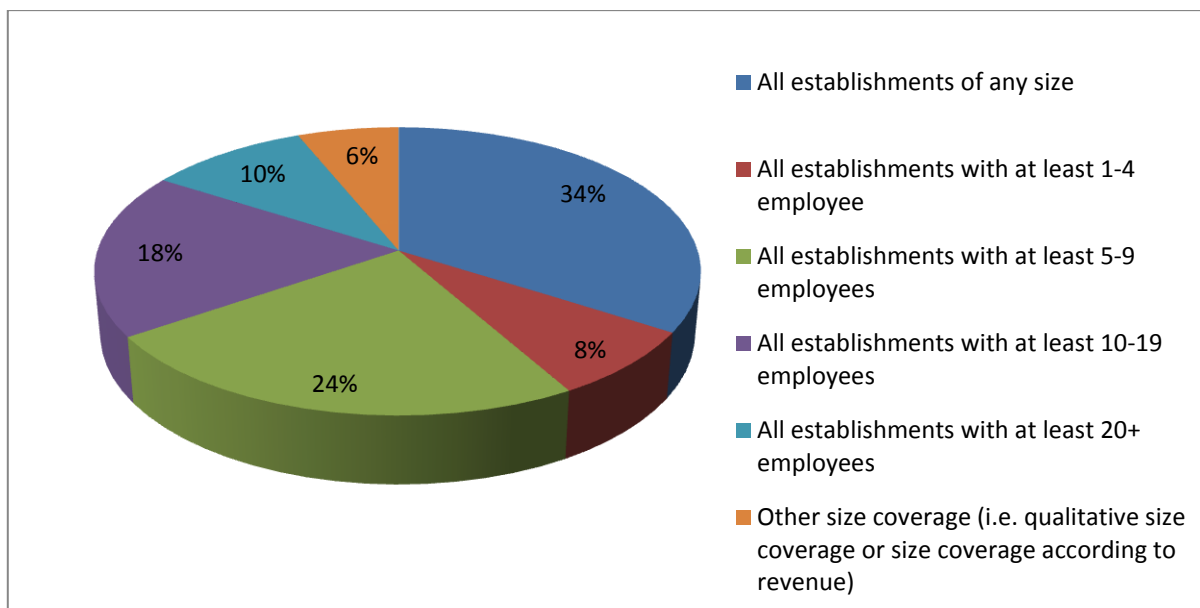


Figure 2: Size coverage indicated in completed questionnaires

4.3 Geographical coverage

Geographical coverage specifies whether the survey covers the whole country or territory and, in cases where the coverage is limited, the relevant cities, areas or regions which are included or excluded. The vast majority of surveys, approximately 85 per cent, covers the *whole country* (see figure 3). About 6 per cent of surveys cover the *whole country excluding remote/marginal areas*. The *capital city* and *main cities* serve as geographical coverage in only about one per cent of all surveys while a negligible number of surveys indicated that only urban areas are sampled. About 7 per cent of surveys used *another geographical coverage*, such as certain regions, districts, etc. Three surveys do not indicate a geographical coverage.

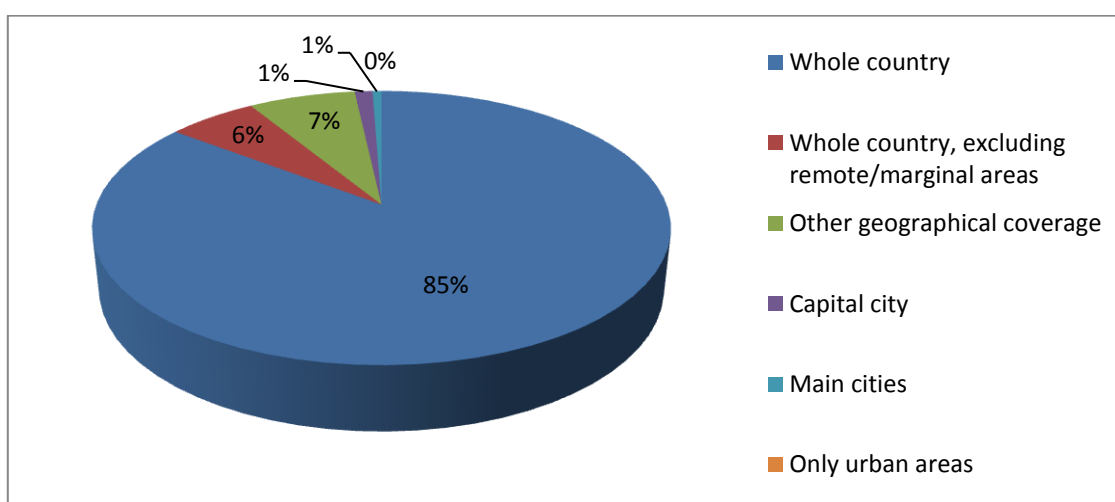


Figure 3: Geographical coverage indicated in completed questionnaires

4.4 Worker coverage

'Worker coverage' refers to coverage of different categories of workers in the surveys. The possible options in the questionnaires, which are not mutually exclusive, are:

- All persons in the payroll
- Only paid employees
- Only manual/blue collar workers/wage earners/production workers/operatives, etc.
- Only non-manual/white collar/administrative workers
- Paid employees and working proprietors (e.g. own account workers or employers)
- All persons engaged (paid employees, working proprietors and unpaid family workers)

Basically all surveys cover employees (only one answer includes only blue collar workers). This means that all surveys cover either *all persons in the payroll* or *only paid employees*. In addition, 20 surveys cover *all persons engaged* (which include paid employees, working proprietors and unpaid family workers) and 4 surveys cover *paid employees and working proprietors* (e.g. own account workers or employers). As the response categories are not mutually exclusive, countries could indicate more than one response.

Table 4 shows the most common combinations of responses on worker coverage. For example, 82 surveys cover at least *all persons in the payroll* of which 31 cover only *all persons in the payroll*, 18 also include *only paid employees*, and 26 cover, additional to *all persons in the payroll*, *all persons engaged* and *paid employees and working proprietors*. A total of 79 surveys cover *paid employees*. Of these, 56 surveys included *paid employees* exclusively and 18 cover paid employees and *all persons in the payroll*. In addition, 20 surveys cover only *all persons engaged* while 4 cover only *paid employees and working proprietors*.

Worker coverage	Surveys
All persons in the payroll	82 (48%)
Only "all persons in the payroll"	31 (18%)
Also "only paid employees"	18 (10%)
Also "all persons engaged" & "paid employees and working proprietors"	26 (15%)
Other	7 (4%)
Paid employees	79 (46%)
Only "paid employees"	56 (33%)
Also "all persons in the payroll"	18 (10%)
Other	5 (3%)
Only "manual/blue collar workers"	1 (1%)
Only "all persons engaged"	20 (12%)
Only "paid employees and working proprietors"	4 (2%)
Total number of surveys	172

Table 4: Common combinations of categories of worker coverage

4.5 Institutional sector coverage

The institutional sector coverage specifies what types of establishments are covered in the surveys in the respective countries. The following options were available for selection for each survey:

- Establishments in the private sector
- Establishments in the public sector
- Unincorporated establishments
- Non-profit institutions
- Foreign establishments located within the country
- Establishments which did not operate part of the reference period
- National establishments located abroad

The answers to institutional sector coverage are not mutually exclusive and more than one answer can be chosen. Table 5 shows the most common combinations of responses indicated by countries; the number in parenthesis specifies the percentage surveys including or excluding a certain concept. Only four surveys include all sectors while 22 per cent, 37 out of 172 surveys, include all surveys but exclude *national establishments located abroad*; and 12 per cent exclude *national establishments located abroad* and *establishments not operating in reference period*. Approximately 69 per cent of all surveys include at least private and public sector institutions while 47 per cent include additional to private and public sector, also unincorporated establishments. The majority of responses (92 per cent) do not include *national establishments located abroad*. A great number of surveys includes one or more sectors but excludes *establishments not operating in the reference period* in 47 per cent; *non-profit establishments* in 37 per cent; *unincorporated establishments* in 36 per cent; and *public sector institutions* in 26 per cent.

Institutional sector coverage	Surveys
All sectors	4 (2%)
All sectors but excluding only "national establishments located abroad"	37 (22%)
All sectors but excluding only "establishments not operating in reference period" & "national establishments located abroad"	21 (12%)
Including at least	
"private sector" & "public sector" institutions	119 (69%)
"private sector" & "public sector" & "unincorporated establishments"	80 (47%)
Including at least one or more sectors but	
excluding "national establishments located abroad"	159 (92%)
excluding "establishments not operating in reference period"	80 (47%)
excluding "non-profit establishments"	64 (37%)
excluding "unincorporated establishments"	62 (36%)
excluding "public sector institutions"	44 (26%)

excluding "private sector institutions"	5 (3%)
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Table 5: Common combinations of institutional sector coverage

4.6 Concepts and operational definitions

The surveys can measure a number of different concepts including the following:

- Employment
- Earnings
- Wage rates
- Compensation of employees or labour cost
- Contractual/normal hours of work
- Hours paid for
- Hours actually worked
- Other topics (including labour turnover and vacancies)

Table 6 depicts how many surveys include each of the nine concepts described above. *Employment* and *earnings* are the most commonly surveyed concepts in all surveys. *Employment* is included in approximately 83 per cent and *earnings* in 69 per cent of all surveys, in 144 and 118 surveys respectively. *Labour cost* and *hours actually worked* are included in 82 and 64 surveys while *hours paid for* is incorporated in 64 cases. The concept of *hours of work* is included in 61 surveys and *wage rates* appear in 42 surveys. *Vacancies* and *labour turnover* are the least widely used concepts and are only included in 26 and 25 surveys respectively.

Concept	Completed questionnaires
Employment	144
Earnings	118
Labour cost	82
Hours actually worked	72
Hours paid for	64
Hours of work	61
Wage rates	42
Vacancies	26
Labour turnover	25

Table 6: Concepts included in establishment surveys

For the 144 surveys measuring **employment**, employment relates to the *total number of workers* in 58 per cent (85 surveys) while 35 per cent of surveys (52 surveys) cover the *average number of workers*. About 3 per cent cover other concepts and 4 per cent did not indicate a response (see table 7).

Employment relates to	Surveys
The total number of workers, on	85
a specific day	28
the month of the survey	25
the quarter of the survey	4

the whole year	18
other	10
pay period	6
The average number of workers during	52
a specific day	0
the month of the survey	13
the quarter of the survey	10
the whole year	27
other	1
Other	3
No response	5

Table 7: Reference periods that employment relates to

If employment relates to the *total number of workers*, 28 surveys (about 33 per cent of the 85 surveys) cover a specific day; 25 surveys (about 29 per cent) cover the month of the survey; 18 surveys (about 21 per cent) cover the whole year; and 4 surveys (about 5 per cent) cover the quarter of the survey (see figure 4). A total of 10 surveys (about 12 per cent) cover another reference period of which the majority (6 of the 10 surveys) covers a certain pay period as the reference period.

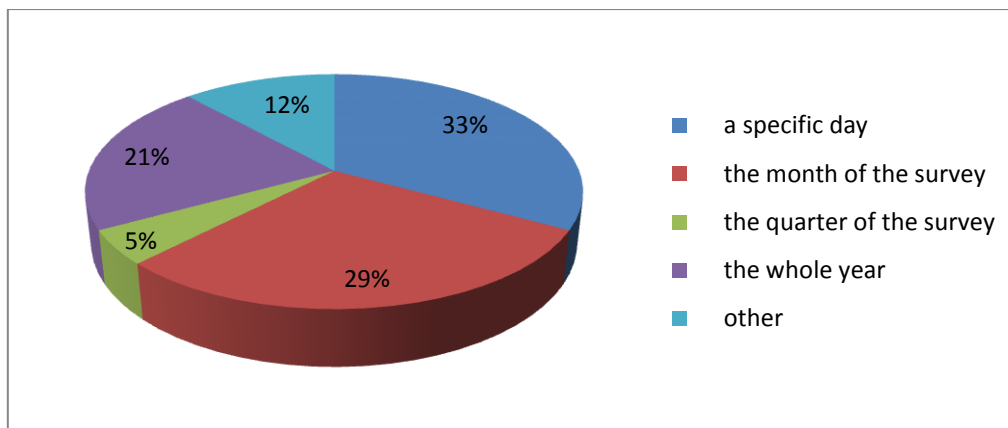


Figure 4: Reference period if total number of workers is used

Of the 51 surveys relating employment to the *average number of workers during* a certain period, the majority of surveys (53 per cent of the 51 surveys) covers the whole year as the reference period while 13 and 10 surveys (25 per cent and 20 per cent) cover the month of the survey and the quarter of the survey respectively. Only one survey uses another reference period (a specific week) and no surveys use a specific day as the reference period (see figure 5).

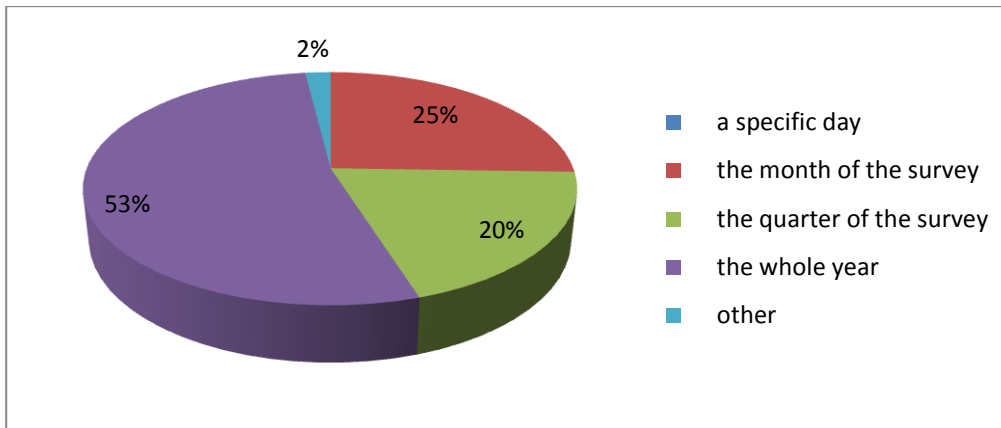


Figure 5: Reference period if average number of workers is used

For the 118 surveys measuring **earnings**, the most common components included are overtime payments, bonuses (other regular bonuses paid every pay period, end of year bonuses, bonuses paid irregularly, profit sharing bonuses), payments for time not worked, payments in kind, and allowances (other allowances in cash, cost of living allowances and family allowances). Other components such as severance and termination pay or payments for items required by the job are less commonly used (see figure 6).

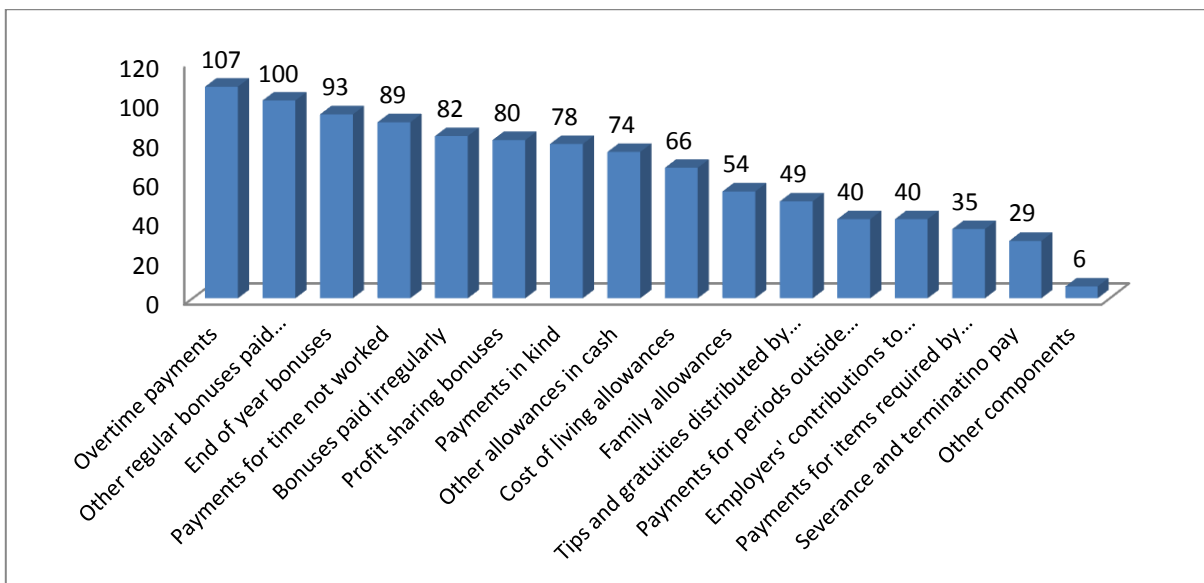


Figure 6: Components included in *earnings*

For the 82 surveys measuring **labour cost** the most commonly used components are overtime payments and bonuses (other regular bonuses paid every pay period, end of year bonuses, bonuses paid irregularly, profit sharing bonuses), payments in kind, workers' social benefits provided by the employer as well as employers' contributions to workers' social security scheme (see figure 7).

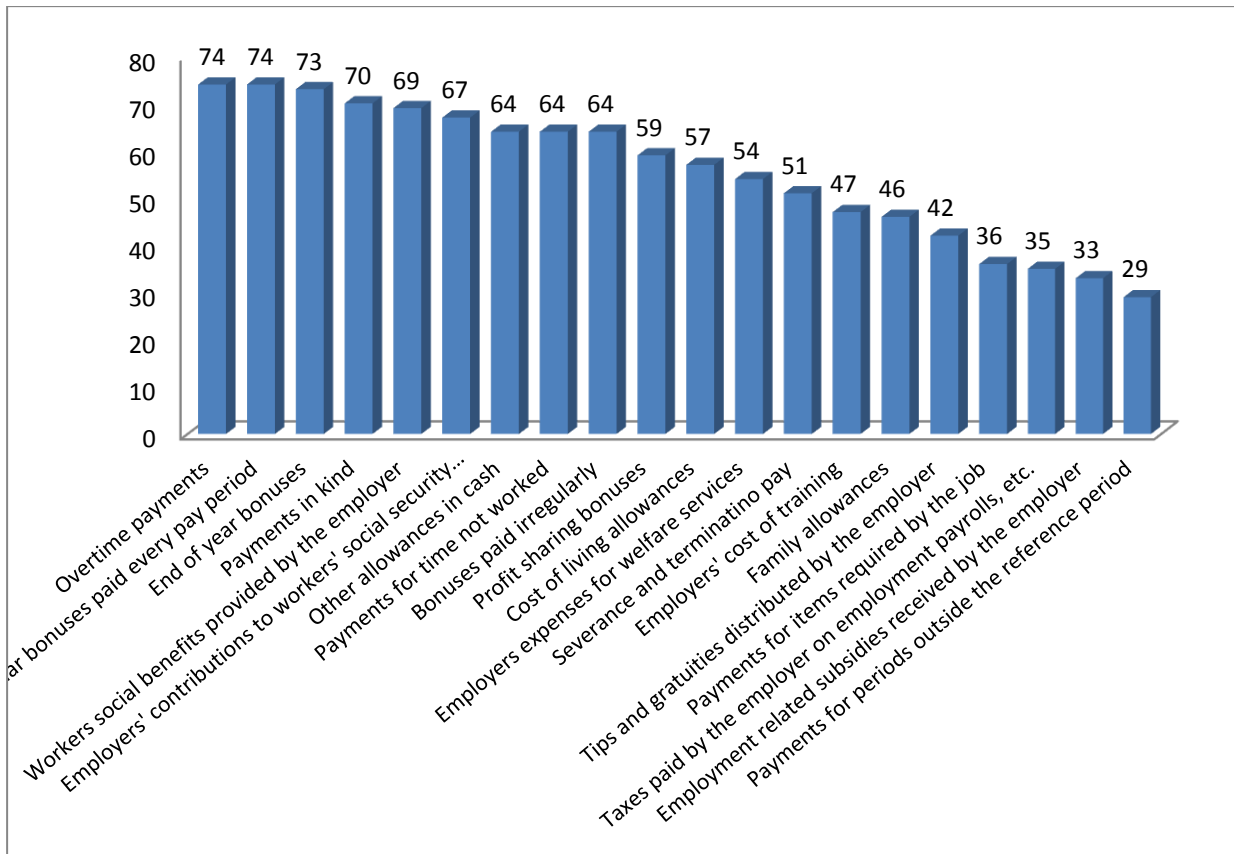


Figure 7: Components included in *labour cost*

For the 42 surveys that measure **wage rates** in their surveys on establishments, 26 include payments for time not worked, 25 incorporate payments in kind and overtime payments, 23 include cost of living allowances, 21 include other allowances and 11 incorporate family allowances (see figure 8).

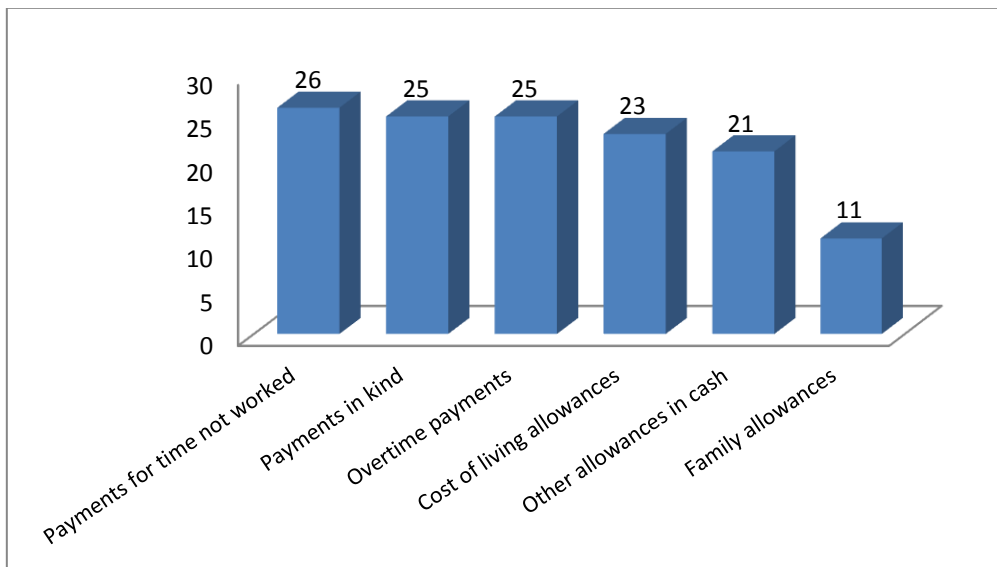


Figure 8: Components included in *wage rates*

For the 64 surveys that measure **hours paid for**, the most common components within the scope of *hours paid for* are overtime and time not worked. If overtime payments are indicated (61 responses), 49 responses include overtime paid at special rates, 42 include overtime paid at normal rates and 22 responses incorporate overtime compensated with time off. Out of the 57 responses including the

component of time not worked, almost all of them (55) include vacation time, 46 incorporate sick leave, 43 integrate occupational injuries, 25 include labour disputes and 38 include other time not worked. Other commonly used components of *hours paid for* are training time, down time, travelling time required by the job and time for preparation (see figure 9).

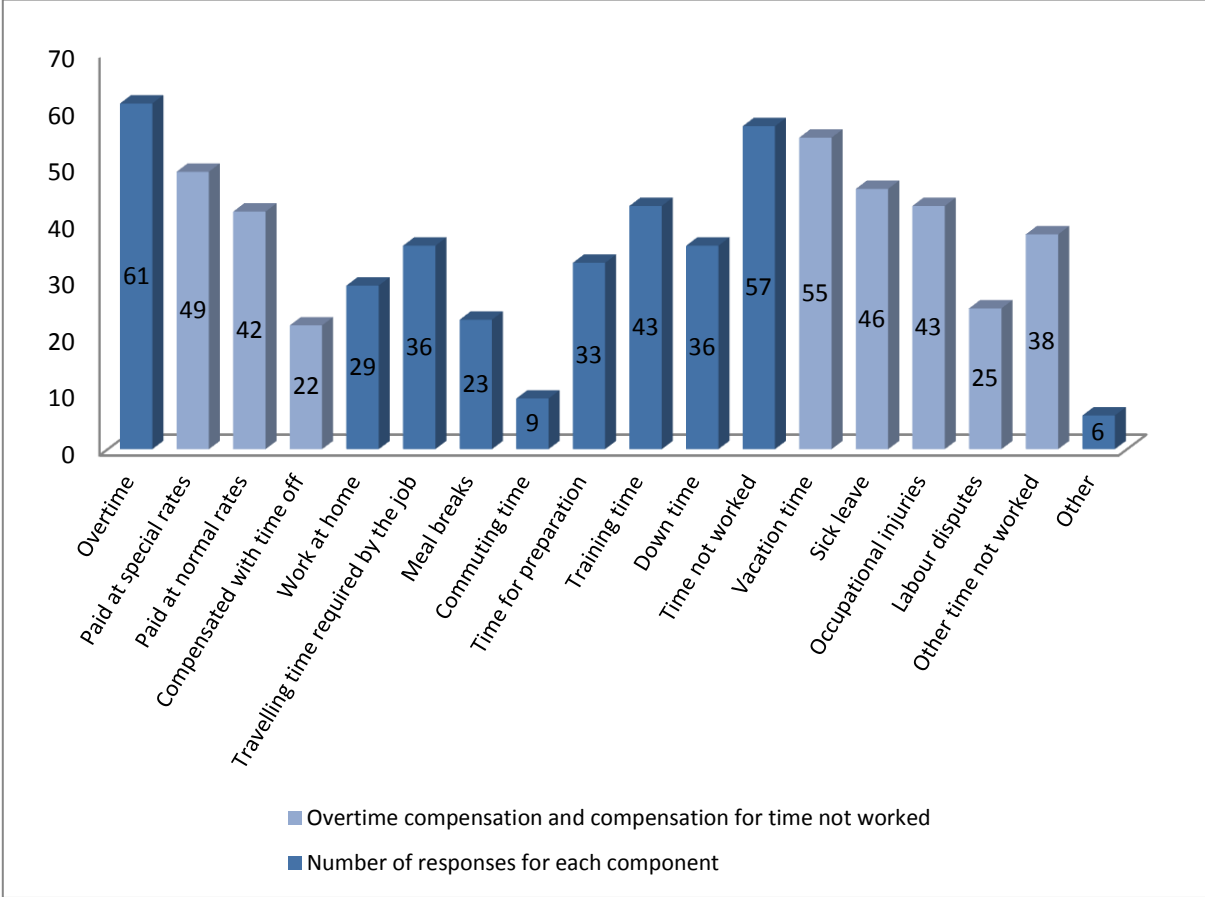


Figure 9: Components included in *hours paid for*

For the 72 surveys that measure *hours actually worked*, the components most commonly indicated are overtime, training time, time for preparation, travelling time required by the job, down time and work at home (see figure 10). Overtime in most cases includes overtime paid at special rates (54 out of 66 responses) and paid at normal rates (50 out of 60 responses).

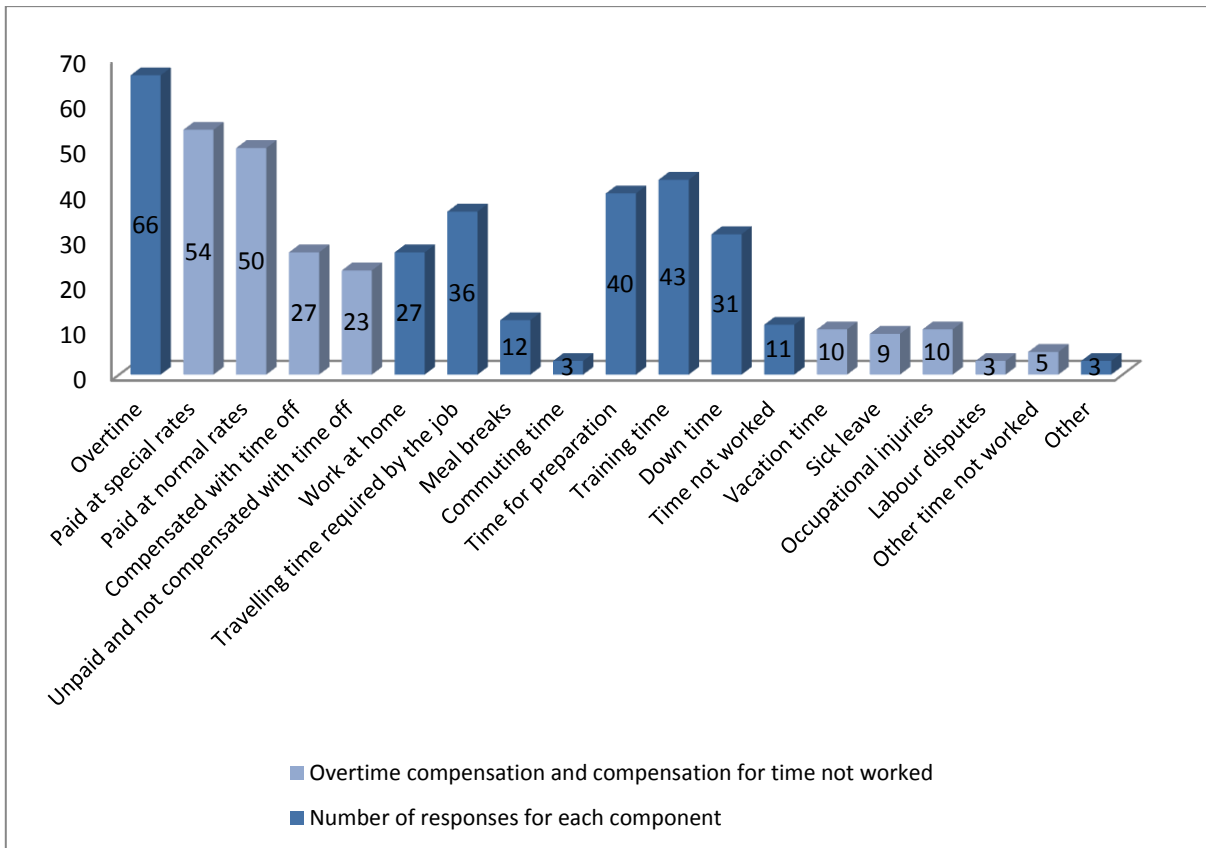


Figure 10: Components included in *hours actually worked*

4.7 Industry classifications

The industry classification used by the vast majority (96%) of surveys is the International Standard Industrial Classification (ISIC) or a classification convertible to ISIC. Out of all these, national classifications and the statistical classification of economic activities in the European Community (NACE) or North American Industry Classification System (NAICS) are most commonly used, in approximately 38 and 36 per cent respectively. A further 19 per cent use ISIC revision 3 or 3.1; about four per cent of responses, use ISIC revision 4 (see figure 11).

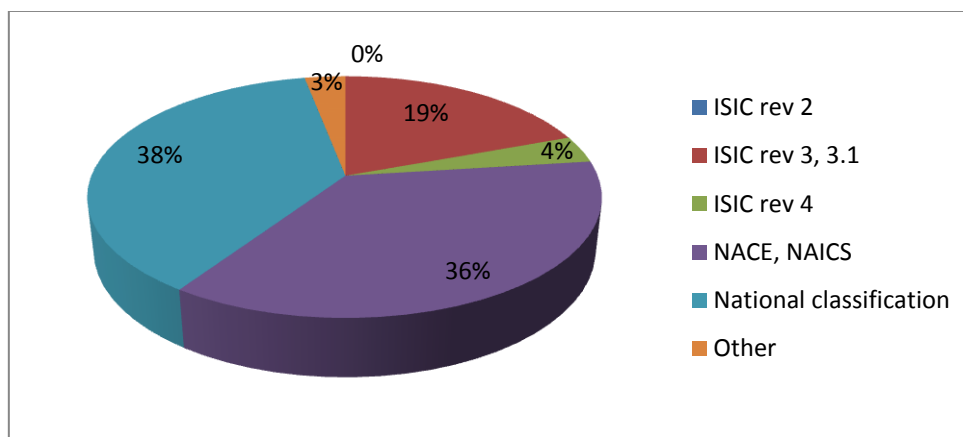


Figure 11: Industry classifications in use

4.8 Unit(s) of observation

Establishment surveys can obtain information for:

- Establishment as whole
- For (groups of) occupations within the establishment
- For each individual worker in the establishment
- For a sample of workers in the establishment

The vast majority of surveys obtained data for the *establishment as a whole* (77 per cent) while about 9 per cent of surveys use *each individual worker in the establishment* (see figure 12). Approximately 8 per cent of responses indicate that *groups of occupations within the establishment* serve as the unit of observation and roughly 6 per cent use a *sample of workers in the establishment*.

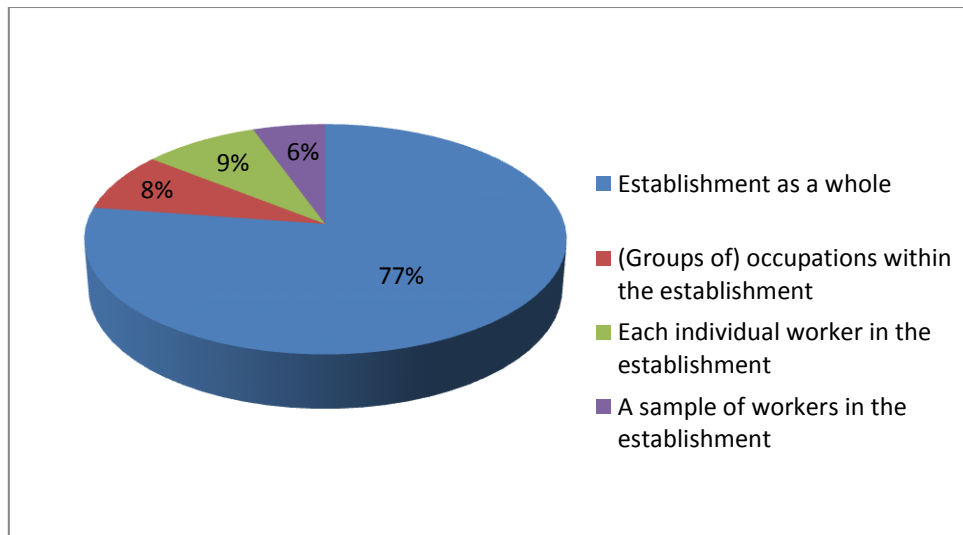


Figure 12: Unit(s) of observation

4.9 Sampling design

The sampling unit used by the majority of surveys is *establishments* and *enterprises*, approximately 45 and 41 per cent respectively (see figure 13). Roughly 7 per cent of all surveys use the local activity unit (indicated in the methodological questionnaire under the option of *other*), and 6 per cent use *employees* (6 per cent) as the main sampling unit(s).

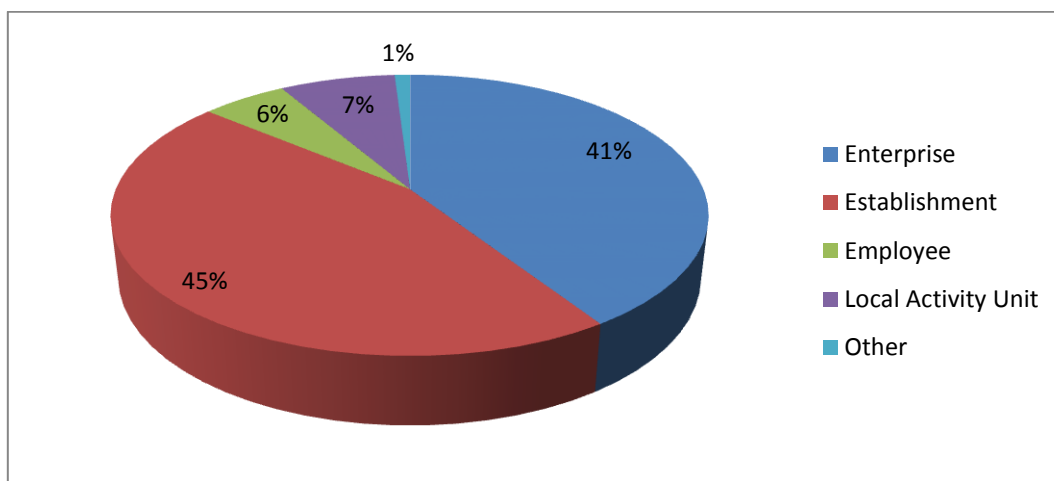


Figure 13: Sampling units used

Roughly 63 per cent of all surveys used *random sampling* while 19 per cent use *complete enumeration* (see figure 14). In four per cent of all cases, *purposive sampling* is used and 14 per cent use *other* sampling methods. The majority of these *other* sampling methods are a combination of complete enumeration and random sampling (14 out of 22 responses).

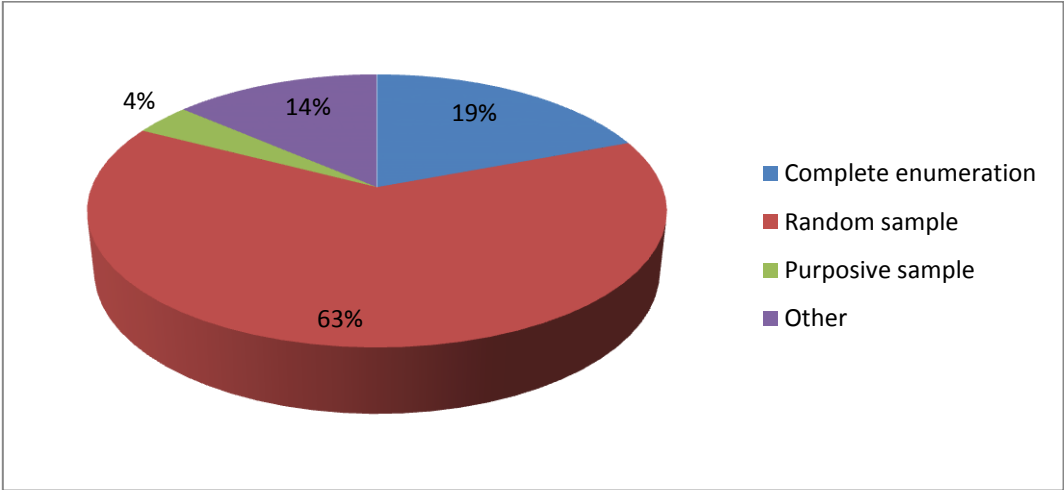


Figure 14: Type of sample

Out of all questionnaires using sampling, 109 surveys (or 89 per cent) used a stratified sample. Only 13 surveys do not include stratification methods. The strata are constructed mostly on the basis of size, by industry, and by region/location (see figure 15).

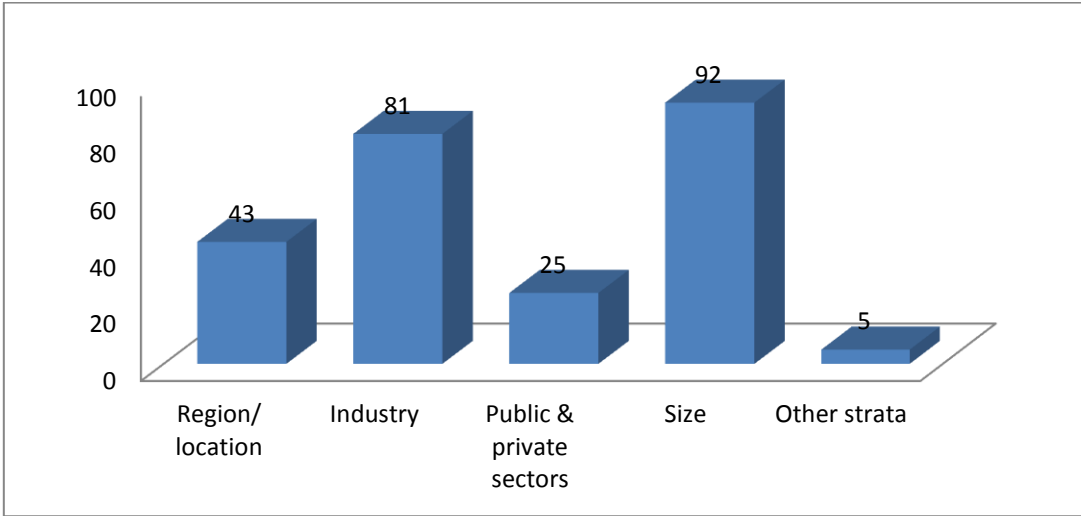


Figure 15: Stratification of sample by

5. Summary

The present Volume 2 of *Sources and Methods: Labour Statistics* presents methodological descriptions of establishment surveys from which statistics of employment, wages, hours of work and labour cost are obtained. It is a revised, enlarged and updated version of the second edition issued in 1995 and contains 172 descriptions in respect of 84 countries, areas and territories.

The purpose of this volume is twofold: first, to provide basic methodological information on the sources and methods used in each country in compiling these statistics, and, second, to illustrate the

differences between the various national series with respect to the concepts and methodologies used by countries.

The analysis conducted on the results on the methodological questionnaires on establishment surveys shows that certain types of combinations of industry coverage are more prevalent than others. For example, most responses include at least *manufacturing*; or exclude *agriculture, forestry and fishing* and include at least one other classification.

About a third of all surveys cover *all establishments of any size* with the other big size coverage classifications being *establishments with at least 5 to 9 employees* and *establishments between 10 to 19 employees*. The vast majority of all surveys covers the *whole country* as geographical coverage while the worker coverage includes *all persons in the payroll* and *only paid employees* to an equal and large extent.

The concepts of *employment* and *earnings* are most commonly used in establishment surveys and are utilized in about 80 and 70 per cent respectively. The majority of responses indicates that ISIC or ISIC convertible concepts are used as industry classification and the unit of observation is in two thirds of all surveys cover the *establishment as a whole*. Most completed questionnaires indicate that an *enterprise* or *establishment* is utilized as the sampling unit and to a large extent; *random sampling* is used, with a considerable amount of surveys also indicating the use of *complete enumeration*.