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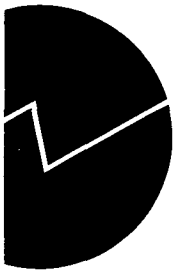

Statistics Norway
Department of Economic Statistics and
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Industry Statistics in Mozambique

Major Findings and Recommendations

Introduction

In order to be able to understand and provide some, hopefully relevant, advice on industry statistics and methods, a general view of the economic and political situation in the country was a necessary background for our work. Therefore the first chapter of this report contains some brief economic and statistical information about Mozambique. Furthermore this report covers most of the tasks described in the terms of reference (see appendix A). Some basic principles concerning business surveys both methods and methodology, are presented, as well as a rather detailed study of the manufacturing statistics is given. Finally, we delineate some measures to be taken in order to improve the business statistics concerning quality, timeliness and relevance.

A list of persons who has contributed to this report is given in appendix D[1], but we would especially like to thank Mr. Leif Korbøl for guiding us through the statistical system of Mozambique, introducing us to the relevant people and making our stay a very pleasant experience.[2]

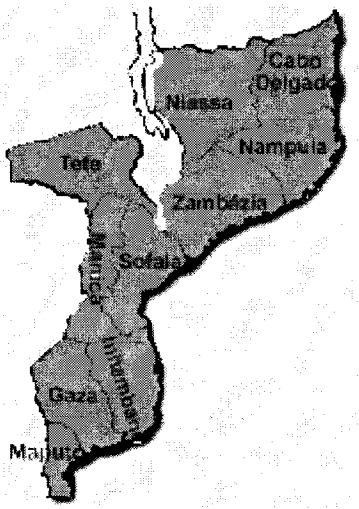
[1] Thanks to Ms Helga Bræin for contributing to this report with her excellent language skills.

[2] Though we had to experience Manchester United win the FA cup final as well as completing the treble versus Bayern München in the UEFA Champions League.

1 Facts about Mozambique

1.1 Population and geography

The Republic of Mozambique is located in south-eastern Africa with an area of about 800 000 square kilometres. The coastline to the Indian Ocean is more than 2 500 kilometres. Large rivers running from west to east divide the long and narrow country athwart, among them the Zambezi river. The transport corridors, inherited from the Portuguese, are also running across the country from the inland to the coast, but Mozambique lacks good north-south communication lines.



The population was 15.7 million inhabitants in 1997, and the population growth rate was over 2.5 per cent in the eighties and early nineties. At the time of independence the population was around 10 million, but in spite of wars and economic decline the population rose by 50 per cent in 20 years.

Including Maputo City, the country is divided into 11 provinces, where the most populous are Zambezia and Nampula, both with more than 3 million inhabitants.

Province	Capital	Area (km^2)	Inhabitants (province) 1 000
Total	**Maputo Cidade**	**799 380**	**15 740**
Niassa	**Lichinga**	**129 056**	**764**
Capo Delgado	**Pemba**	**82 625**	**1 284**
Nampula	**Nampula**	**81 606**	**3 065**
Zambézia	**Quelimane**	**105 008**	**3 202**
Tete	**Tete**	**100 724**	**1 149**
Manica	**Chamoio**	**61 661**	**975**
Sofala	**Beira**	**68 018**	**1 380**
Inhamane	**Inhumane**	**68 615**	**1 112**
Gaza	**Xai-Xai**	**75 709**	**1 034**
Maputo prov.	**Matola**	**26 058**	**809**
Maputo cid.		**300**	**966**

1.2 History and politics

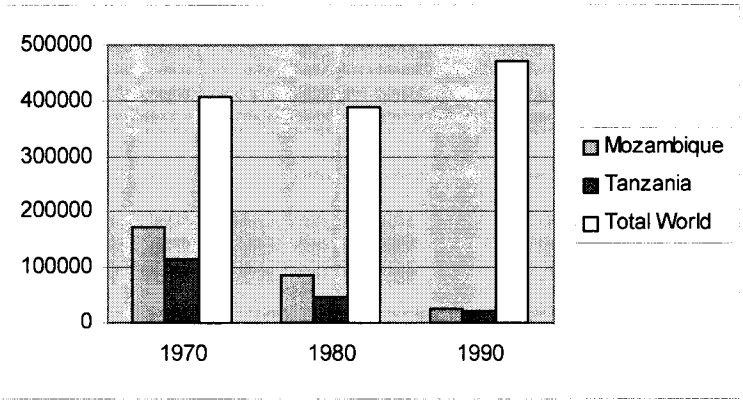
In 1975 Mozambique gained independence from Portugal. After the independence socialism was introduced as the main political ideology and the economy was centrally planned, as in many third world countries. In addition Mozambique lost many of their skilled workers as most of the Portuguese left the country after 1975. In the eighties the country was ridden by terror and civil war, and over 100 000 were killed, until the general peace agreement in 1992. A democratic multi-party system was introduced, and J. Chissano was elected president in 1994, and since then the situation in the country has been politically stable.

1.3 Economy

The whole economy faced a downward trend from the years of independence and through the eighties, when the gross national product (GNP) decreased while the population rose. With peace and stability together with massive foreign aid the trend has turned and the economy is recovering and growing. The economy is an economy in transition from a centrally planned to a liberalised and capitalist one under the supervision of the World Bank. The old rather unproductive public companies are either shut down or privatised.

The primary sector, agriculture, forestry and fishing, is the most important sector, although the share of employment fell from 85 per cent in 1980 to 78 per cent in 1991. The manufacturing share of employment fell from almost 5 per cent in 1980 to 3 per cent in 1991, while the public service sector rose from 2 to 11 per cent in the same period (Statistical Yearbook 1997, Mozambique). The importance of agriculture is also reflected in the manufacturing industry, where the main activity is the food and beverage industry, and the far most important single product measured by value is beer. Other important products are wheat flour, cement and other beverages (Statistical Yearbook 1997 and Estatisicas Industriais 1996).

The decrease in the cashew nut production illustrates some of the problems of the Mozambican economy. Mozambique was once the world's leading producer of cashew nuts, and together with Tanzania dominated the world production around 1970 with a market share of 70 per cent. But through the years of independence, socialism and civil war the production abated from over 170 000 tonnes in 1970 to only 25 000 tonnes in 1990. Tanzania, who did not experience civil war but a strong centrally planned economy, has faced the same downward trend in the cashew nut production. Asia and Latin America have taken over Africa's leading position in the cashew industry.



Source: National Human Development report 1998, UNDP

2 Quality issues relevant to populations, registers and surveys

The INE (Instituto Nacional de Estatistica) is publishing an impressive range of statistics, but faces severe problems concerning the quality of some of their products, especially as is documented in chapter four the response rate is low. Firstly, a more theoretical approach to quality is given and how to improve it. In the following chapters some concrete advice concerning quality aspects are provided and what actions to be taken in order to improve it.

Quality is defined in the ISO 8402 -1986 as: "the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs". Quality of statistics can be defined with reference to several criteria (Eurostat/A4/Quality/98/General/Definition):

- Relevance of statistical concepts
- Accuracy of estimates
- Timeliness and punctionality in disseminating results
- Accessibility and clarity of the information
- Comparability of statistics
- Coherence

To achieve these six goals in production of statistics resources must concentrate on:

2.1 The definition of the target population and its parameters

The relevance of statistics depends upon the relevance of the population used to draw the sample from and produce the figures from. A table of the total volume of production of cashew nuts in a period can be interpreted in different ways:

- The total for the establishments who responded to the survey
- The total for the establishments with more than 50 employees producing cashew nuts
- The total for all establishments in Mozambique producing cashew nuts

Therefore the first crucial step in planning statistics is to set up a concise definition or description of the population we shall produce relevant statistics for:

- The collection of statistical units defined by some common properties which make them unique(target population) , the characteristics or measurements of each unit we plan to collect information about(the questionnaire or variables) and the properties of the population we want to describe(the parameters)

An example could be the population of all establishments in Mozambique producing cashew nuts and the total value of production in 1998.

2.2 The register or frame for a survey

Although we can give a theoretical definition of a population and the parameters we want to estimate the conduction of a survey in practise often implies some modification or simplifications of the definitions.

When we have some registers containing all the units in our target population this enables us in theory to draw a representative sample for the survey. Often this frame is not exactly the population we defined above, but hopefully the difference is small enough to preserve the relevance of the statistics produced from our survey. One of the problems in a register is the lag of time between the event and the registration of the information in the register. In populations where many new units entry and old ones exit the difference between the true population and the register can cause serious quality problems. The sample drawn for a monthly survey would also be more biased compared to the population as time goes by if we do not replace exits by entries in the population.

2.3 The sample size

The accuracy of the estimate depends on the size of the sample and the proportion of units sampled from the population. The accuracy increases by the inverse of the square root of the size of the sample. When the sample proportion is small the sample must be increased 4 times to improve the accuracy by 100 per cent. On the other hand the uncertainty of the estimate decreases to zero as the proportion of the population increases to 100 per cent. These facts are only correct as long as we assume that the problem of measurement error, non-response and register errors can be ignored.

3 The business register as a frame for the business population

A well functioning business register is a prerequisite to conduct high quality and extensive business surveys repeatedly. It is decisive for defining populations, constructing samples, reaching respondents, estimations and so on to have an updated register with relevant characteristics or variables and an extensive coverage of the units.

3.1 General issues about the business population

Business populations are normally more complex than populations of social individuals. The economic units vary much more with respect to size. The deviation between the small units and the large units is immense - i.e. the turnover for the largest unit can be more than 1 000 times larger than the turnover for the smallest units. The complexity of the units is another problem. The number of establishments in a large enterprise can be over hundred. On the other hand there are enterprises owned by many different units both individuals and other enterprises. All together this explains why business populations are more difficult to conduct sample surveys from compared with social surveys on humans. However, it should be emphasised that for populations of households or families the same problems often makes it hard to estimate parameters describing properties in the households or families.

What makes the challenges even more cumbersome in business populations are the dynamics of the units in the business population. New units entries, old units exit, units are joined into new units or units are divided into several new units. When the units involved in these changes are large – parameters in the population are changed considerably and rapidly.

3.2 Business register as a frame

A sample plan for the business population is outlined from the structure of the business population. Two important characteristics of the population are the number of units and a total of some measure of size. By that we mean an overview of both the number of units in each group and the total of some measure of size in the same groups. The analysis of the business population should be taken in two steps. Firstly, we produce statistics for the total business population and secondly, we analyse the different target populations defined by the sector statistics.

Often used measures of size in business populations are number of employees, and we recommend that the business register should contain the number of employees for all units. This information is received once a year for all units by the information that companies are requested to send to the Ministry of Labour. This information is useful as an auxiliary variable in many statistics.

Another size measure is the turnover, and since Mozambique planned to establish a value-added tax (VAT) system in 1999, we emphasised that this variable should be included in the business register in the future. We expect, however, that there likely will be quality problems in the first periods or years before this information can be used as an auxiliary variable in statistical models to improve the quality in business statistics. We recommend that the INE gives priority to VAT-information, especially turnover, to be included in the business register. In addition, the number of employees and the turnover are important statistics besides being efficient measures of size for forming sample plans and as auxiliary variables in statistical models used in the estimation of population parameters.

Concerning the units, the business register contains both the legal unit and the local unit, i.e. the enterprise unit and the establishment unit. However, the division and distinction between the two different units in the register could be better regarding organisation and content. As most of the units are single-establishment enterprises, this problem has been of minor importance, but one expects an increase in the number of multi-establishment units as both the size and complexity of the economy grow.

Furthermore, to be able to handle the problems with the dynamics of the business population (exit/entry etc.), several dates should be considered included in the register, e.g. birth-date (entry), death-date (exit), dates concerning organisational changes (e.g. ownership), dates concerning turnover, employment etc.

To sum up we recommend:

- a clear split between the enterprise unit and the establishment unit
- inclusion of several dates in the register
- inclusion of turnover as a register variable in addition to employment
- to utilise the forthcoming VAT-system both for updating the register and for the registration of turnover

3.3 Tables for business register

We recommend that a variety of tables should be produced from the business register periodically to watch over the business population. These tables should both give a cross-section of the populations and measure changes of the populations between two periods or points of time. Tables should cover both the total business population and the sector populations.

3.3.1 The total population

First we must count the number of establishments by localisation, activity and size

Number of establishments
Number of establishments by province and size
Number of establishments by activity and size
Number of establishments by province and activity

Secondly we have to compute the total number of employees by localisation, activity and size

Number of employees
Number of employees by province and size
Number of employees by activity and size
Number of employees by province and activity

These six tables give an overview of the total business population. As we recommended above these cross-section tables should be extended to similar tables showing the entries and exits between two periods or points of time.

3.3.2 Target population for surveys

Next we turn to the target populations for each of the surveys, e.g. the establishment population for the monthly production survey.

Again it is advisable to both make cross-tables of the number of establishments by province, activity and size. By activity is understood a partition in more detail, at least to the level planned to publish figures for.

Number of establishments
Number of establishments by province and size
Number of establishments by activity and size
Number of establishments by province and activity

The total number of employees
Number of employees by province and size
Number of employees by activity and size
Number of employees by province and activity

For these target populations it is even more important to table the dynamics of the populations. Therefore similar tables on the entries and exits between two periods or points of time should be produced to evaluate and correct the samples used in the sector statistics.

3.3.3 The design of samples

These tables are necessary for the next challenge – the design of the different surveys. We should, however, discuss the size of establishments. It is very common to differentiate between small, medium-sized and large statistical units in most business statistics. One can not give a general advice on how to differentiate between these groups. We would, however, recommend the following procedure:

Order the establishments by number of employees and calculate the proportion of employees for the centimes:

- Large companies should have a degree of coverage equal to minimum 20-30 per cent of the number of employees.
- Medium-sized units should cover the 30 -50 per cent of the number of employees beneath the large ones.
- Then small units cover the last 20-50 per cent of the units.

Another way to define this split into large, medium and small units is to find classes so that the number of units in the sample is approximately the same in each of the three groups.

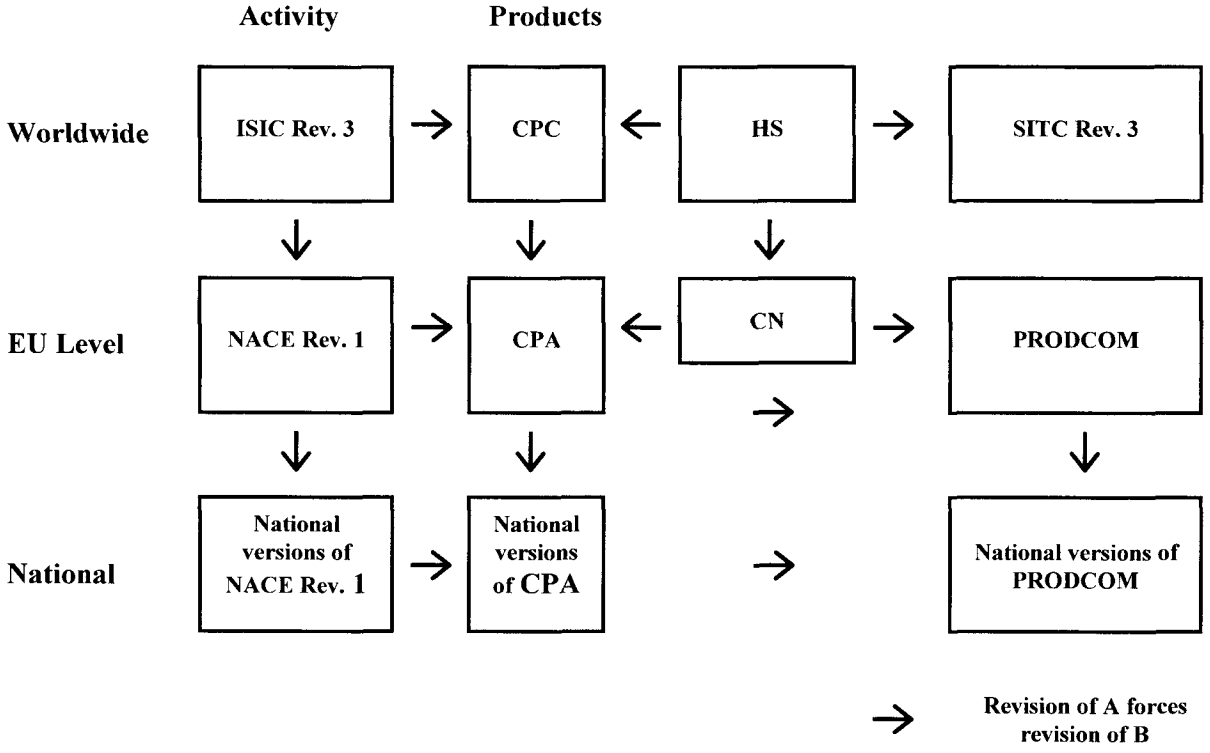
4 The business surveys

The rather broad scope of the mission did not allow us to go into all details in every statistics and we have therefore focused on one specific survey, the manufacturing statistics, but most of our recommendations are general and relevant for other business statistics as well.

4.1 Standards and classifications

In addition to the definitions of units, classifications and standards concerning activity and products are necessary conditions both for conducting a survey and analysing the results of it. The ability to compare across industries, regions and countries is an important analytical aspect within business statistics. Therefore, the statistical bodies of both the EU (European Union) and the UN (United Nations) have put a lot of effort into the work of the harmonisation of activity standards and product classifications as well as definitions of concepts, units, etc.

The INE has been using ISIC rev. 2 for activity classifications, but are now introducing NACE rev.1, which is the standard that the EU-countries base their activity classifications on. The NACE rev.1 is a 4-digit activity code based on the worldwide ISIC rev.3, which is quite different from ISIC rev. 2.



Source: Eurostat

The product classifications HS(Harmonised System) and CN(Combined Nomenclature) are not derived from activity classifications, and the use of HS and CN has been in statistics on foreign trade and for the purpose of customs. On the contrary the CPA(Classification of Product by Activity) and

Prodcom(Production Communautaire) are derived directly from the activity classifications. The Prodcom list is a detailed list of about 5 700 products classified in the industries of mining, manufacturing and energy, and this list is utilised by a whole range of European countries, also the ones outside the EU. The Prodcom-code is built directly on NACE and the CPA with strong links to the CN-nomenclature. When following the arrows the above figure will show that changes in the three standards related to Prodcom lead to changes in the Prodcom list, which in turn illustrates the harmonisation of the systems of standards.

4.2 Manufacturing statistics

The statistical system for the manufacturing sector consists of two surveys, one annual structural survey and one monthly production survey.

4.2.1 The monthly manufacturing production survey

4.2.1.1 Purpose of statistics

To give a short-term indicator of the development of production of certain important products, as well as yearly production figures for all products in the manufacturing sector, both as totals at product level and as totals for the whole sector. The production statistics provide indirectly price information about the products.

4.2.1.2 Concept of variables

Variables surveyed are value and quantity of different products produced by the unit each month. The value is given both before and after taxes. There are no pre-printed names of products on the questionnaires, but the respondents have received an extract of the product classification. In addition the number of employees is included in the questionnaire.

4.2.1.3 Data collection

Questionnaires are sent out each month and collected from the regional agencies of the INE, and then the questionnaires are forwarded unchecked to the central office of the INE.

4.2.1.4 Control of data

Data are registered and checked at the central office of the INE. An important method of control is price comparisons.

4.2.1.5 Quality of data

Due to the low response rate, missing data, lacking sampling plans and methods as well as imputation methods, the data quality for many products is not satisfactory.

4.2.1.6 Observation and reporting unit

In principle, the establishment defined as a local unit is both the observation and reporting unit due to the decentralised system of data collection. In practise there are very few multi-establishment enterprises, and therefore the enterprise and the establishment units coincide. However, the organisation of the business register is not optimal for handling the problem with different units, as we have commented on above.

4.2.1.7 Sample
The sampling plan and the method are not entirely clear, but the main large enterprises and other important producers are covered due to knowledge of the production structure. The sample size was 184 enterprises out of a total of 1664 manufacturing enterprises registered in the business register.

4.2.1.8 Response rate
The response rate was 54 percent, which means that only 100 enterprises returned the questionnaire.

4.2.1.9 Population
Every enterprise classified in the formal manufacturing sector.

4.2.1.10 Product classification
The product classification is based on a Portuguese classification.

4.2.1.11 Dissemination of data
The data are published on a quarterly basis in the business cycle report from the INE. The aggregated yearly figures are published in The Statistical Yearbook, Mozambique in Numbers and in "Estatisticais Industriais". The main users of data are or ought to be the national accounts and the Ministry of Planning and Finance, in addition to the Ministry of Industry and other organisations and companies.

4.2.2 The annual structural manufacturing statistics

4.2.2.1 Background
The annual manufacturing statistics are not a separate survey of the manufacturing sector, but a part of a cross-sector enterprise survey. We focus on the manufacturing sector because we intended to obtain an overall view of one sector, although; of course the conclusions and recommendations are relevant for other sectors as well.

4.2.2.2 Data collection
Two types of questionnaires are sent out annually, one for the large enterprises and one for the smaller ones. Enterprises with less than 50 employees receive a rather detailed questionnaire that also includes accounting variables. The large enterprises, over 50 employees, receive a questionnaire without accounting variables, but they have to give detailed information on the employees, both occupation and remuneration. These large enterprises are invited to send in their official accountings in addition to the questionnaires. One reason for this division is that the smaller enterprises do not elaborate accountings according to standard rules to the same extent as the larger enterprises.

4.2.2.3 Population, sample and response rate
Due to the fact that this is a cross-sector survey we do not have specific information about the manufacturing sector concerning the response rate. The population is defined as all enterprises in the business register, 9990 with fewer than 50 employees and 703 with 50 or more. The sample of small enterprises consisted of 266 enterprises, of which 96 enterprises replied to the survey. For large enterprises the sample comprised 246 units of which 131 responded. Respectively, the response rates were 36 and 53 per cent.

4.2.2.4 Observation and reporting unit
The enterprise is both the reporting and the observation unit.

4.2.2.5 Concepts of variables
Both questionnaires have detailed questions about ownership, public or private, national or foreign. Furthermore the respondents are requested to provide information on primary and secondary activity, number of establishments and accounting practise.

The form for the large enterprises does not contain information about operating cost and income, but contains a detailed matrix where the respondents should give information on different categories of employees for each quarter of the year. Wages and salaries are also to be distributed on categories of employees for each quarter. The questionnaire for smaller enterprises is not as detailed in its specifications, but on the other hand it contains questions on costs and income. The operating costs and income for the larger enterprises are registered on the basis of the official accounts. Official accounting laws and standard accounting rules have made it possible to rely on this administrative source instead of traditional data collection through a detailed accounting questionnaire.

However, an important variable in all structural statistics is value added, and this variable is not computed.

4.2.2.6 Dissemination of data
Figures on employment and wages and salaries are published in The Statistical Yearbook and Mozambique in Numbers, but other important structural variables such as turnover, profit or operating result, are not officially published.

4.3 Other sector statistics

In addition to the manufacturing sector, monthly statistics for construction, cafes and restaurants, hotels and internal trade were evaluated. Here we will only give a brief description of the contents of the different statistics, but in the summary of recommendation we will include both specific and general advice concerning these statistics.

All these statistics are conducted on a monthly basis and data are collected via a questionnaire. Two questionnaires are sent out for the hotel statistics, one concerning the nationality of the guests while the other focuses on income, costs, employees, rooms and even investments. The questionnaire for cafes and restaurants is quite similar to the one for hotels, and contains variables on income, costs, employees and investments. A mapping of the input side in the enterprises is included in the construction survey where one asks for raw materials or intermediate products at a detailed level.

The internal trade questionnaire contains a rather large matrix where the enterprises have to fill in the different product they have sold last month, both quantity and value. Additionally, the respondents have to provide information on stocks and purchases of the same products, both quantity and value.

This detailed system of monthly statistics seems to have had an unfortunate effect on the response rate and data quality. The response rate for the internal trade survey was only 26 per cent, or 57 enterprises of a sample of 219 in a population of 5083 enterprises. The construction survey had 39 per cent and the hotel survey had 60 per cent response rate. The response rate of the cafe and restaurant survey was not known, but according to our interview regarding this survey both the response rate and the quality of this survey was rather poor.

5 Population parameters, sample plan and sample estimates - an overview

The purpose of this chapter is to present some important population parameters, their impact upon the sample plan and the estimates outlined from the design of the sample or statistical models when auxiliary variables are present. More technical details are given in appendix B.

5.1 Population parameters

In the design approach to survey theory there are two fundamental principles:

- The units in the population can be listed: 1, 2, 3,..., N
- For each unit we can measure a property without measurement error, y_i

The parameters most often treated in survey theory are the total of the y's or the mean:

- $t = \sum_{i=1}^{N} y_i$
- $\bar{y} = \frac{1}{N} \sum_{i=1}^{N} y_i$

This can easily be generalised to sub-populations where we introduce the total and the mean for each sub-population in a straightforward manner. When the y's are indicators (yes, no) the total is the number of those in favour (the number of yes), while the mean is the proportion in favour.

The pure design approach does not take into consideration measurement errors, non-response and register errors. Another subject poorly treated is the problem with dynamics in the populations. If we want to measure the change of retail trade from one period to another we should measure the difference between the two, or the ratio of the second total over the first one. In short-term statistics the problem is to adjust the sample from the first period to the second since the register is incorrect due to the fact that it takes time to get new units into the register.

When we have auxiliary information in the register, i.e. number of employees, we will often introduce a statistical model for the y's

- $y_i = \beta x_i + \varepsilon_i$

The parameter of interest, β, can be interpreted as the mean ratio between y and x.

5.2 Sample plan

The sample plan is the probability distribution for drawing a specified sample. There are many different sample plans and we list a few of them here:

- **Simple Random Sample**: All samples of a specified size have equal probability to be drawn. The inclusion probability (for each unit in the population) is then equal to the sample size divided by the number of units in the population
- **Systematic Sampling**: The population units are sorted and the first unit to the sample is drawn randomly with equal probability from the k first units in the list (k is equal to the ratio between population size and sample size). The rest of the sample is determined by systematically taking every kth unit thereafter, until the end of the list.
- **Stratified sample**: The population is divided into sub-populations and in each a sample is drawn. The samples in the sub-populations can be simple random samples.
- **Cluster samples**: The population is divided into groups, all establishments belonging to the same enterprise is an example. Then we draw a sample of enterprises and include all establishments in the survey. Another example is to draw a sample of municipalities and include all establishments in these municipalities in the survey.
- **Probability Proportional to Size**: Then we assume we have a measure of size (number employees) and draw the sample by probabilities proportional to this measure of size. Large units (many employees) have a higher probability to be included into the sample than small ones, which are much less likely to be included in the sample.

If we stratify the population by size (and other factor also) a similar effect of probability proportional to size is achieved.

We will recommend that the business population and the frame (business register) are stratified by

- provinces
- activity
- size

Furthermore, we suggest that a simple random sample be taken in each strata. In the strata of large units the inclusion probability is put equal to one, i.e. all units are included into the sample.

5.3 Estimation

The estimation procedure depends upon the sample plan. When the sample is simple random the estimation of the population mean is given by the sample mean which implies that that the population total is estimated by multiplying the sample mean by the number of units in the population:

- $\hat{\bar{y}} = \bar{y}_s = \frac{1}{n}\sum_{i \in s} y_i$ where $i \in s$ means the units in the sample
- $\hat{t} = N\bar{y}_s$

We recommended the use of a stratified sample plan and simple random samples in each stratum. The estimation of the mean or total in each stratum then goes as for the simple random sample above. The total for the whole population is just a sum over the estimated totals in the strata. The grand mean in the total population is easy to calculate by dividing the total by population size

- $\hat{t} = \sum_h \hat{t}_h$
- $\hat{\bar{y}} = \frac{\hat{t}}{N} = \sum_h \frac{N_h}{N}\bar{y}_{s_h}$

When we have an auxiliary variable, we use a ratio-estimator for the total:

- $\hat{t}_R = \frac{\sum_{i \in s} y_i}{\sum_{i \in s} x_i} \sum_{i=1}^{N} x_i = \frac{\bar{y}_s}{\bar{x}_s} t_X$

This formula can in a straightforward way be generalised to a stratified sample:

- $\hat{t}_R = \sum_h \hat{t}_{hR} = \sum_h \{\frac{\bar{y}_{s_h}}{\bar{x}_{s_h}} t_{Xh}\}$

More details on estimation are given in appendix B.

6 Improvement of statistics

In general, it is important that the INE is seen on as the key provider of reliable and up-to-date statistics. However, this does not mean that the INE should be the only collector, processor and disseminator of statistics, and at least in this period of transition the different ministries will still be playing a major role in the statistical system. On the other hand, it is of great importance that the main users of statistics, such as the National Accounts and the Ministry of Planning and Finance, trust the economic statistics and thereby use the data in their macroeconomic planning as well as important components of the national accounting system. Therefore building confidence and making the statistics as well as the methods and the methodology understandable, ought to be major tasks for the INE in the coming years. It is a severe situation when national institutes of statistics face disbelief or non-confidence in their figures, as they from time to time do. Therefore transparency and ability to explain and document figures, i.e. changes, trends, means or totals, are of vital importance for the INE, as well as any other provider of statistics.

In the following we will present some measures to be taken in order to improve quality, timeliness and relevance of economic statistics in general and some concrete suggestions on different sector surveys. Within the concept of quality, the response rate is perhaps the most crucial factor for improving most of the sector statistics.

6.1 Organisational

Much of the data collection takes place at the provincial offices located in the capital of the different provinces. This seems like a reasonable strategy having in mind their knowledge of the province and the different industries as well as their physical nearness to the respondents. However, as we have learnt through our meetings with the central office of the INE, these provincial offices function only as rather slow post offices.

There is certainly a huge potential in using these staff members more in the whole process of data capture. They should be given a role not only in the collection process, but also in the registration process and in the initial stages of data revision. Concrete tasks for these staff members could be to conduct sum controls, unit controls and checking that the relevant items are filled in. They should also act as contact persons for the respondents who need assistance in filling in the forms, of course with a back-up person at the INE.

Some steps in this direction are to be taken now, as the provincial offices are being supplied with computers. For instance by using e-mail, registered data will rapidly be delivered to the INE, which also would save time, because the data are already registered and slightly edited. However, it is important that the data capture at the provincial offices are not hampered due to budgetary constraints when it comes to such basal resources as petrol, stamps or envelopes. The distribution of financial resources throughout the country, as well as budgetary planning and discipline are of course a prerequisite for a well-functioning organisation. We know that the financial situation at the provincial offices is not the responsibilities of the INE, but that of the provincial authorities.

6.2 Training

Training of staff members, both at the INE centrally and at the provincial agencies is vital for the quality of both the revision process and the response rate. Relevant competencies for statisticians in data processing are knowledge of the computer systems, simple statistical methods, accounting principles, methodology of the different surveys and knowledge or "facts" about certain industries, specific companies or their province. Especially, training of the staff-members at the provincial ought to give a relatively high pay-off measured by increased response rates and data quality.

Training of respondents is also important, as well as to ensure that the right person in the organisation answers the questionnaire. The target person concerning answering may be mentioned in the questionnaire. One could also conduct an internal mini survey to find out who in the enterprises answers the questionnaires. This could be done by classifying different types of positions and register this information in the database or more ad-hoc on a file.

6.3 Motivation

Motivation is very important for the respondents as well as the staff members that process statistics at the INE. One important factor for justifying a detailed questionnaire is the importance of the end product for the users of statistics. Most of the economic statistics are substantial input in the national accounting system, which in turn is a vital tool for governing the country.

Important variables that everyone recognises the need for are the gross national product, distribution of employment, development of wages, inflation, investments and so on. More specifically, branch organisations, international organisations, large companies and ministries are interested in both the short-term developments of a sector as well as the structural facts. The importance of these points ought to be illustrated for the respondents, the staff and also other contributors to the budget of the INE.

A practical measure to be taken is to describe the background, need and use of the specific statistics in a cover letter or in the questionnaire itself. This is a strategy that we have followed in many years at Statistics Norway. Furthermore, it is important that the results of the statistics are verifiable for the providers of data, that is availability of the results in such way that the respondents are able to recognise their input to the statistics in published material.

A second step could be to send the results of the survey to each of the respondents once a year, e.g. one of the quarterly business cycle reports. An even more extravagant service to the respondents is to return a table or some graphics that show their enterprise's performance compared with the average of the activity sector or some other measure.

6.4 Legal basis

The legal basis for production of statistics in Mozambique is a separate act on statistics. As we have understood through our meetings this act, which gives the INE a tool for fining non-respondents, is a "sleeping act". We know from own experience that this is an unpopular but powerful tool for collecting data and especially when it comes to the response rate, the Statistics Act in Norway has become a necessary tool. Therefore a reawakening or strengthening of the Statistics Act in Mozambique will be an important step for increasing the response rate.

In the long run, this action of strengthening the laws and the compliance with the laws are inevitable strategies if the INE shall be able to increase the response rate. The laws on statistics could also be used for tapping other administrative data sources for crucial data to be used in the production of statistics.

However, before we reach the point of a strong legal act on statistics, a systematic approach of reminders should be evaluated. Reminding letters ought to be sent out approximately 2-3 weeks after the deadline of response. Some large non-respondents should be contacted and reminded by telephone or fax.

6.5 Design

We will not focus on design of questionnaires here, but just point out that a logically built up form with understandable explanations of the terminology is of high relevance concerning data quality. A key phrase here is "Do we know what we are asking for". A concrete example could be to tailor-made the questionnaires on production to the respondents by pre-printing the relevant products on the basis of reported production in the previous period.

6.6 Other sources

One should seek other sources in order to improve the quality of statistics, and other potential sources play a role in confirming our findings, for imputation of missing data or for replacement of variables or even whole surveys (if an administrative register covers the content of a survey).

Examples of relevant sources are the Internet, branch organisations and the statistics of the different ministries and of course the forthcoming VAT register. More and more enterprises use the Internet as a place of marketing their company, and therefore they often provide their homepages with account figures or production information and so on.

Branch organisations or the C.T.A. do very often elaborate statistics for their own members, and they are also experts on their sector. Contact with these organisations could be useful for both data quality and also for future cooperation. Finally, we would point out the need for a harmonisation or coordination in data collection, for example with the Ministry of Industry, which also conducts a manufacturing survey.

6.7 Advisory committees

One should establish advisory committees for each of the main fields of statistics. An advisory committee should consist of the main users of statistics and also of representatives of the respondents. For example for manufacturing statistics, an advisory committee could have representatives from the Ministry of Finance and Planning, the Ministry of Industry, the National Accounts, the C.T.A., 1 or 2 enterprises and research institutions.

The main tasks for this council would be to discuss the users' needs for statistics, the contents and relevance of statistics, the respondent burden, the methodology and of course suggest improvements. This would be a very wise strategy in order to build confidence around the statistics as well as improving the long-term quality.

6.8 Methodology

Concerning classifications and standards, we have pointed out the importance of international harmonisation, and the INE is implementing the EU activity classification (NACE) and we strongly support this strategy of adopting standards, concepts or methodologies in general that are part of a comprehensive statistical system.

Furthermore, there are no contradictions adopting an international system of statistics, and making national adjustments and exceptions to ensure national needs. First of all the EU standards and concepts are comparable with the one of the UN, and a specific advantage for Mozambique is that most of the important documents, regulations, classifications and documentation would be available in the Portuguese language. Furthermore, many of the foreign consultants, long-terms as well as short-terms, have their backgrounds and experience from the European system.

7 Concrete suggestions concerning the surveys

In general, the level of ambition should not be too high. It is better to cover some crucial variables satisfactorily and ensure that the users get the data in time and that they trust them and use them.

Generally, and this is also the view of the Ministry of Finance, the INE should focus on fewer variables in order to increase the quality and punctuality of the statistics. Therefore we recommend that the following proposals should be evaluated.

7.1 Monthly statistics

One ought to consider the needs for monthly statistics versus quarterly. Quartely statistics instead of monthly would reduce the response burden, the costs of data processing and probably increase quality and punctuality. Data are not published on monthly but quarterly basis, and neither the National Accounts nor the Ministry of Finance did express an absolute need for monthly data.

Concerning the monthly production statistics, the focus should still be kept on the main products. But one could consider an annual survey covering the lesser important products. This is due to the fact that many smaller or compound products are not so crucial for the business cycle.

The internal trade survey should be dropped in the form it is today. One is not able to produce reliable statistics out of the data material. Instead one could consider conducting a kind of internal trade survey on a multi-yearly basis. If the need for a monthly retail trade statistics is obvious, the INE should only collect a total turnover monthly.

The survey on cafes and restaurants is also facing severe problems due to low response rates and rather poor data quality. It is our advice either to collect substantially fewer variables, e.g. only turnover and employment on a monthly basis, or preferably conduct a less comprehensive survey each quarter.

7.2 Annual enterprise survey

The enterprise survey is an annual structural business survey, and our recommendations below are based on our knowledge and experience concerning these kinds of statistics and the use of them.

7.2.1 Personnel

Regarding the annual enterprise statistics, it is our view that too many questions are asked concerning different types of personnel, especially on the questionnaire to the large enterprises. The numbers of questions on the personnel in the enterprises (see part III in the questionnaire) ought to be reduced from the present 15, and the division of each variable on quarter seems too detailed. Only one variable should be broken down on a quarterly basis, e.g. the total number of personnel (1), and the rest of the variables should be on an annual basis.

III -Pessoal Servico

	1 Trimestre	2 Trimestre	3 Trimestre	4 Trimestre	Anual
1. Pessoal Nacional					
1.1 Remunerado					
1.1.1 Dirigentes					
1.1.2 Tecnicos					
1.1.3 Outros					
1.2 Nao Remunerado					
(2.Pessoal Estrangeiro)					

The above suggestion implies a substantial reduction in the number of questions concerning the personnel, and it is our view that this is advisable bearing in mind the low response rate and that the smaller enterprises are not asked these detailed questions and the fact that this is not a study of personnel but a structural business survey.

7.2.2 Investments

Investment information is lacking for the manufacturing sector. It is therefore advisable to include investment variables on the annual enterprise questionnaire.

The investments play a vital role in the national accounts and macroeconomic planning models. In a "simple" economy the value of all output is denoted by Y, i.e. the net national product or national income, investments by I and consumption by C, the following identity is true:

$$Y = C + I$$

All output produced is either consumed or invested, and in this aggregated investment variable accumulations of inventories are included. In Norway in 1997 the identity of national income and aggregated demand was 1008 = 734 + 274 (in billion Norwegian kroner), and hence investments amounted to 27 per cent of the national income with the exception of foreign trade. This illustrates the significance of investment. In general, investment is important because it increases the economy's ability to produce output in the future. Investments in intangible assets, such as R&D and human capital, are of course crucial factors for the long-term competitive level of the economy, but in this initial face of building up a statistical system the introduction of the concept of intangible assets and data collection would be too far-fetched.

Today, investment figures are not collected through a questionnaire, but they are available for the manufacturing sector, though not officially published, via the balance sheet in the enterprises' accounts. The investment figure could be calculated by taking the net value of real capital at the end of the year before amortisation minus the value of real capital at the beginning of the year. This method of computing the investments requires that the balance information for the previous year is available, and is therefore very vulnerable to non-response.

Another approach that the INE should consider using is to ask specifically about investment information on the questionnaires, which is done in the survey on tourism (Inquérito mensal aos estabelecimentos hoteleiros). This is the approach that Statistics Norway and many other European countries follow.

First of all, a definition of investments has to be established, and the following proposal is based on Eurostat's definition and the one we use in the Norwegian manufacturing survey.

Total gross fixed capital formation is defined as acquisition of fixed durable assets, new and used, with an expected productive life of more than one year (inclusive own account investment), less receipts from sales of fixed durable assets.

Fixed durable assets comprise tangible goods such as machinery, equipment, vehicles, buildings and land. All investments are valued prior to (i.e. gross of) value adjustments, and before the deduction of income from disposals. Purchased goods are valued at purchase price; i.e. transport and installation charges, fees, taxes and other costs of ownership transfer are included. Own produced tangible goods are valued at production cost. Goods acquired through reorganisations (such as mergers, take-overs, break-ups, split-off) are excluded. Purchases of small tools that are not capitalised are included under current expenditure.

Also included are all additions, alterations, improvements and renovations that prolong the service life or increase the productive capacity of capital goods.

Current maintenance costs are excluded, as is the value and current expenditure on capital goods used under rental and lease contracts. Investments in intangible and financial assets are excluded.

Concerning the recording of investments where the invoicing, delivery, payment and first use of the good may take place in different reference periods, we think that the following method is the most applicable:

> Investments or acquisitions of tangible goods are recorded in the reference period in which they are delivered, whether or not put into operation during the year.

Sales of tangible goods have to be recorded in order to compute gross fixed capital formation, and include the value of existing tangible capital goods sold to third parties. Sales of tangible capital goods are valued at the price actually received (excluding VAT), and not at book value, after deducting any costs of ownership transfer incurred by the seller. Value adjustments and disposals other than by sale are excluded.

The following table gives an example of how investment information can be collected through a questionnaire.

	Acquisitions	Sales
Machinery and equipment		
Buildings (also alterations)		
Land		
Sum		
Of this capitalised work		

Finally, one may also consider including investment establishments, such as the Mozal[3], in the manufacturing figures for total investments.

7.2.3 Value added

Furthermore, there is an obvious need for more structural annual figures. First of all one should try to calculate value added, which is a very important variable. Reliable data on production, costs and wages and salaries are necessary variables in the context of value added. Other measures concerning

[3] A big aluminium plant which is being built outside Maputo.

profitability, operating surplus, turnover etc., should be considered in a long-term strategy. Here we focus on the concept of value added.

The value added (Y) for an establishment is defined as the gross value of production(X) within a year minus the cost of goods and services consumed(H).

$Y = X - H$

The gross national product (GNP) is defined as the value of all *final* goods and services produced, and can be calculated as the sum of value added for each establishment in a country. One could also calculate the gross product within different regions or industries by aggregating the value added of the belonging establishments. By using the concept of value added one avoids the problem of double counting of products, and at each stage of the manufacture of a good, only the value added to the good at that stage of manufacture is counted as a part of the GNP or the gross regional product.

Value added is calculated from the production value less the value of goods and services (other than those purchased for resale in the same condition[4]) consumed.

Income and expenditure classified as financial or extraordinary in company accounts are excluded from value added. Value added is calculated "gross" because value adjustments (such as depreciation) are not subtracted.

Value added can be calculated from the following accounting headings;
- Net turnover
- Variation in stocks of finished goods and work in progress
- Work performed by the undertaking for its own purposes and capitalised
- Raw materials and consumables
- Other external charges
- Part of other operating charges
- Part of other operating income

This value added concept is called value added at market prices and includes indirect taxes with the exception of VAT. Value added at factor prices equals value added at market prices less indirect taxes plus subsidies.

Variable	**Explanation**
Production value	Sales and other income adjusted for change in stocks of finished products and work in progress
-Cost of goods and services consumed	Purchases of raw materials and consumables adjusted for change in stocks of raw materials and consumables
=Value added at market prices	
-Indirect taxes	
+Subsidies	Including subsidies on products and production
=Value added at factor prices	

[4] The definition of production value normally includes gross profit on sales of merchandised goods (i.e. unprocessed products).

8 Concluding remarks

In this paper and during our stay in Mozambique we have tried to give both theoretical advice as well as suggested more concrete actions adapted to the specific conditions in Mozambique. We focused on:

- the business register, both the register itself and as a frame for populations and samples
- industry statistics, especially manufacturing statistics
- methodology; standards, concepts, e.g. how to measure value added and investments, and a critical evaluation of the variables
- statistical methods; estimation and imputation techniques, sampling
- user needs and users' view of the statistical products of the INE; especially national accounts
- quality of statistics; how to improve it
- practical advice on data capture; e.g. the use of the regional agencies of the INE

As mentioned before the scope of the mission was very broad and covered a whole range of tasks, from the theoretical ones concerning statistical methods to details in variables in particular statistics, and we have attempted to take into consideration the specific needs of the INE and Mozambique regarding all our proposals.

However, the proposals and conclusions of our findings have to be followed up in order to be implemented in the statistical systems and the daily work of the staff of the INE. A follow-up mission ought to concentrate on fewer fields, and e.g. focus on the business register, specific statistics or statistical methods in practise.

Finally, we did learn a lot during our mission, not only about the statistical problems in Mozambique which in many ways are quite similar to the ones in Norway, but also about the specific problems Mozambique faces.

Appendix A Terms of reference for short term consultants on industry surveys

Consultants: Richard Ragnarsøn and Leiv Solheim
Date: 19.05 - 01.06 1999

Background

The INE conducts surveys for various industry sectors (manufacturing industry, construction, trade, hotels, restaurants etc.). Some characteristics are:

- In most surveys only the largest establishments are included (more than 100 employees). The samples are in general small (100-200) compared to the number of companies registered in the Business register (16 000). Samples are not based on proper statistical methods, and it is not possible to make good estimates on sector totals. Exceptions are some transport and communications sectors which cover the total (railways, airways, post- and telecommunications).
- The variables included in the surveys do not suffice the needs of National Accounts and are probably in some cases not very satisfactory for other users as well. One example is the limitation of industry survey to output data only.
- The National Accounts section collects business accounts data from The Ministry of Planning and Finance (the tax authority). This is probably a very important source of data, which is not systematically and sufficiently exploited.
- The timing of surveys is generally for one period only, and a continuous program of data surveys has not been established.
- It is not well established which data should be collected for the monthly surveys serving demands of short-term statistics, and which to be collected for annual surveys serving a different purpose, requiring more details.

Tasks

The two short-term consultants on industry statistics should:

- Investigate the user needs, in particular the needs of the national accounts (coverage, variables, frequency etc.)
- Assess the actual industry statistics, their problems and difficulties.
- Suggest a continuous program of data surveys for economic sector statistics.
- Suggest ways of drawing statistical samples from the Business Register, which may allow for estimating of sector totals.
- Consider the business accounts as a source for annual statistics, and give advice on how to collect these data (directly from the enterprises or from the tax authorities).
- Review the scope of the variables included in the industry surveys.
- Suggest how to standardise the various sector surveys (basic variables to be included, samples design, data collection procedures etc.).
- Evaluate the monthly surveys and make suggestions on the contents.
- Present a draft with major findings and recommendations.

Appendix B Statistical concepts with applications to business surveys at the INE

B.2.1. Simple random sample

In this paragraph we will present a short overview of basic concepts and methods for simple random samples.

Definition A sample of a fixed size is a simple random sample if all samples of this size have equal probability to be drawn. If we denoted the population size by N and the sample size by n the probability of drawing a special sample is

$$\frac{1}{\binom{N}{n}}$$

Notation We will index the population by i=1, 2, 3, ...,N and the sample by i_k, k=1,2,3,..., n

Variables We will denote by y the survey variable and by x an auxiliary or register variable

Parameters We will define four parameters which measure different properties of the population, the mean, total, variance and the standard deviation:

Total $$t = \sum_{1}^{N} y_i$$

Mean $$\mu = \bar{y} = \frac{t}{N} = \frac{1}{N}\sum_{1}^{N} y_i$$

Variance $$\sigma^2 = \frac{1}{N-1}\sum_{1}^{N}(y_i - \bar{y})^2$$

Standard deviation $$\sigma = \sqrt{\frac{1}{N-1}\sum_{1}^{N}(y_i - \bar{y})^2}$$

Estimators We will now present the estimators for the four parameters defined above:

Estimated total $$\hat{t} = \frac{N}{n}\sum_{1}^{n} y_{i_k}$$

Sample mean $$\hat{\mu} = \hat{\bar{y}} = \frac{\hat{t}}{N} = \frac{1}{n}\sum_{1}^{n} y_{i_k}$$

Empirical variance $$\hat{\sigma}^2 = \frac{1}{n-1}\sum_{1}^{n}(y_{i_k} - \hat{\bar{y}})^2$$

Standard deviation $$\hat{\sigma} = \sqrt{\frac{1}{n-1}\sum_{1}^{n}(y_{ik} - \hat{\bar{y}})^2}$$

Unbiased When we draw a particular sample the estimate will always deviate from the population parameter. We denote the estimator unbiased if the mean of the estimator for all samples is equal to the parameter. The mean for all samples is also denoted the expectation of the

estimator and we use the symbol E( ). The first three estimators defined above, the empirical total, the sample mean and the sample variance are all unbiased for a simple random sample. Although the estimate for standard deviation is not exactly unbiased the deviation vanishes as the sample size increases.

Expectation of the empirical total $E(\hat{t}) = t$

Expectation of the sample mean $E(\hat{\mu}) = \mu$

Expectation of the sample mean $E(\hat{\sigma}^2) = \sigma^2$

Variance We will now calculate the accuracy of the empirical total and the sample mean by the variance, abbreviated Var( ). It is quite hard both to calculate the expectation and the variance and we do not go any further in showing the results here. They can be found in every textbook on sample theory. As can be seen from the formulas, the variance decreases as the sample size increases and when the sample is complete, i.e. all units are enumerated the variance equals zero.

Variance of the empirical total: $Var(\hat{t}) = \frac{N^2}{n}\frac{N-n}{N-1}\sigma^2$

Variance of the sample mean: $Var(\hat{\mu}) = \frac{1}{n}\frac{N-n}{N-1}\sigma^2$

Imputation Until now we have assumed that all units in our sample responded. This is in most cases not true - some of the units do not respond. In this context with a simple random survey we have to assume that the non-respondents are randomly distributed among the total sample. We can use the sample mean for the respondents to impute a predicted value for the non-respondents. If we use this value for the non-respondents the sample mean for the complete sample is equal to the sample mean for the respondents. We can show this as follows. Denote by m the number of respondents and assume that the sample is ordered in such a way that the respondents are the m first units in the sample.

Sample mean of the respondents $\hat{\bar{y}}_m = \frac{1}{m}\sum_1^m y_{i_k}$

Predicted value for non-respondents $\hat{y}_{i_k} = \hat{\bar{y}}_m, k = m+1, m+2, \ldots, n$

Sample mean with non-response: $\hat{\mu} = \frac{1}{n}[\sum_1^m y_{i_k} + \sum_{m+1}^n \hat{y}_{i_k}] = \frac{1}{n}[m\hat{\bar{y}}_m + (n-m)\hat{\bar{y}}_m] = \hat{\bar{y}}_m$

Conclusion When we have non-respondents in a simple random sample and we assume the non-respondents are random (also denoted ignorant non-response) the efficient sample size is equal to the size of the respondent sample. In most cases the non-respondents are not random which means that the mean computed by the respondent units is biased too, i.e. the mean for the samples is not equal to the population mean.

B.2.2. Simple random sample with an auxiliary variable

A model We will now assume that we have more information about the population than just the size and an enumeration of the units. Let the auxiliary variable be denoted by x. In business surveys the number of employees is one example which is observable today. The statistical model can describe the connection between the survey variable y and the register variable or auxiliary variable x:

Rate $$b = \frac{\sum_{1}^{N} y_i}{\sum_{1}^{N} x_i}$$

Expectation $$E(y_i) = bx_i, i = 1,2,3,\ldots,N$$

Variance $$Var(y_i) = x_i\sigma^2 = \frac{x_i}{N-1}\sum_{1}^{N}\frac{(y_j - bx_j)^2}{x_j}, i = 1,2,3,\ldots,N$$

Estimation In this case the estimation of the population total through the estimation of the rate b. We use the same notation for the sample and units drawn in the sample.

Estimated rate $$\hat{b} = \frac{\sum_{1}^{n} y_{i_k}}{\sum_{1}^{n} x_{i_k}}$$

Estimated total $$\hat{t}_R = \sum_{1}^{N}\hat{b}x_i = \hat{b}\sum_{1}^{N} x_i = \hat{b}t_x$$

Variance $$\hat{\sigma}^2 = \frac{1}{n-1}\sum\frac{(y_{i_k} - \hat{b}x_{i_k})^2}{x_{i_k}}$$

Prediction Since we know the value of the x for all units in the population, we can predict a value for y in the non-observed units as well. On this basis we can calculate an estimated mean for y which is different from the sample mean. This estimated mean from the prediction is more accurate than the sample mean.

Predicted value $$\hat{y}_i = \hat{b}x_i$$

Estimated mean $$\hat{\bar{y}}_R = \frac{1}{N}\sum_{1}^{N}\hat{y}_i = \hat{b}\bar{x}$$

Imputation The problem of missing observation can be solved more efficiently when we have auxiliary variables. As for simple random sample above, we assume that the first m units in the sample are observed while the last n-m units are missing. The estimated rate on basis of the observed respondent sample will then play a similar role to the total sample above. The efficient size of the sample is m instead of n.

Appendix C Basic statistical methods for sample surveys based on a business register - presented on a seminar at the INE

C.1. Introduction

The purpose is to present some general views and recommendations about business surveys in general and the usefulness of a business register to support these surveys. The presentation is concentrated on seven issues:

- The business population in Mozambique - a brief overview by the business register
- Some statistical concepts useful for business surveys
- The business register - a description of the business population and how we can use as a frame for business surveys
- Some general requirements for business surveys and how these are implemented into a business register
- What is important to secure the quality of collection of data in business surveys in Mozambique
- The main methodological issue is of course the estimation of unknown parameters in the business population most often means or totals on annual basis (structure statistics) or the increase or decrease from previous to present period - named indices in many cases (short time statistics)
- Some preliminary conclusions and recommendations based on the visit at INE.

Although I will try to address the specific situation here in Mozambique and at INE I do think my presentation might be quite general since I know too much about statistics in Norway and rather little of Mozambique after a week. I have to regret that I have not prepared to few examples for my presentation.

C.2. The business population in Mozambique

First we can take a look on the map of Mozambique. At least I have learned that Mozambique consists of 11 provinces. They differ in many ways:

- The area
- The number of people
- The proportion of women
- The size of provincial capitals
- The number of establishment

In table 1 these figures are presented together with the total for Mozambique.

Table 1 A few statistical facts about Mozambique

Province	Capital	Area (km^2)	Inhabitants (province) 1 000	Proportion of women	Inhabitants (capitals) 1 000	Business population
Total	Maputo cidane	799 380	15 740	52.7		16 605
Niassa	Lichinga	129 056	764	52.7	149	723
Capo Delgado	Pemba	82 625	1 284	51.9	83	1 055
Nampula	Nampula	81 606	3 065	50.7	305	2 098
Zambézia	Quelimane	105 008	3 202	51.9	160	729
Tete	Tete	100 724	1 149	52.5	104	598
Manica	Chamoio	61 661	975	52.6	171	857
Sofala	Beira	68 018	1 380	54.5	488	2 257
Inhamane	Inhumane	68 615	1 112	56.5	94	978
Gaza	Xai-Xai	75 709	1 034	57.0	263	1 553
Maputo prov.	Matola	26 058	809	53.4	427	1 005
Maputo cid.		300	966	51.3	966	4 752

An interesting fact, which I can tell you, is that the proportion of women in Maputo (51.3) is very close to the proportion of women in Norway (51.4). The difference can't be caused by anything else but pure coincidence or what we in statistics call random error. As you already my known the long coastline here is another similarity to Norway.

Next we turn to the business population. In the next to tables we have focused on the distribution of establishments by provinces and size (number of employees) in table 2 and main activity by size in table 3. In both tables we have limited the number two those with confirmed information.

Table 2. Distribution of establishments by province and size.

Province	Total	>250	>50 and ≤ 250	>10 and ≤ 50	≤ 10
Total	10 937	146	542	1 796	8 453
Niassa	433	1	17	59	356
Capo Delgado	609	0	21	97	491
Nampula	1 190	14	65	232	879
Zambézia	561	10	22	68	461
Tete	253	1	18	56	178
Manica	757	8	41	127	581
Sofala	1 635	18	76	268	1 273
Inhamane	909	2	24	103	780
Gaza	1 274	8	20	106	1 140
Maputo prov.	300	27	51	52	170
Maputo cid.	3 016	57	187	628	2 144

Table 3. Distribution of establishments by main activity and size.

Province	Total	>250	>50 and ≤ 250	>10 and ≤ 50	≤ 10
Total	10 908	146	542	1 796	8 424
1	256	18	48	92	98
2	46	2	13	14	17
3	1 718	59	188	407	1 064
4	71	4	30	20	17
5	291	24	54	91	122
6	6 695	9	101	756	5 829
7	480	19	57	112	292
8	382	10	26	116	230
9	969	1	25	188	755

C.3. Statistical concepts

In this short overview we will only define a few statistical concepts which are important for registers and surveys in general. These are

- Population
- Parameter
- Variable
- Frame
- Representative sample
- Estimator and estimate
- Expectation
- Variance and standard deviation

They can be divided into three groups:

Population, parameters and variables

It's a bit formal now but the quality of statistics relies on precise definitions. In many texts on probability theory this just the starting point. We will, however, attempt to define these concepts in a context of statistics.

Population

A collection of statistical units defined by some common properties, which make them unique. Examples are the population of transports companies, the population of retail establishments, the collection of restaurants and hotels in Maputo and Beira, Industry enterprises in Mozambique. The standard for classification of activities gives an overview over different business populations defined by main activity.

Parameter

It is a property of the population. Examples are total number of units, the mean of some measurement, the proportion of units having a special property, the total value of income for enterprises in Mozambique and the total value of production in industry for April 1999.

Variable

It is a measurement or characterisation of a statistical unit. In economic statistics this means a measurement or characterisation of an establishment or enterprise. Examples are number of employees, main activity, proportion of woman, value of the total production, tax paid, investment.

Frame and representative sample
These two concepts are basic for drawing a sample for surveys.

Frame
The frame for a survey is the listing or listings of units that delimit, identify and allow access to the elements of the population. An example is the Business register at INE.

Representative sample
The collection of units drew from a frame by a probability method. Normally a representative sample will mean that every unit in the population or frame have probability of being drawn greater than zero. An example of representative sample could be the following sample of industry establishments: Those with more than 250 employees are drawn with probability equal 1, the units with number of employees less or equal 250 and greater than 50 are drawn with probability equal 0.2. Units with size less than 50 are drawn with probability equal to 0.05.

Estimator, estimate, expectation and standard deviation
We end this paragraph by the definition of concepts from probability theory:

Estimator
The mathematical function we use to calculate the estimate for a parameter. In statistics production this means a computer program.

Estimate
The computed value using an estimator. In INE this means the output from a computer program.

Expectation
It is a mathematical evaluation of the mean of the estimator. A theoretical evaluation before we conduct the survey.

Standard deviation
It is a mathematical evaluation of the error or variation of the estimator.

C.4. The Business register - some requirements

In this presentation we will concentrate on a few issues which are the most important for the business register as a frame.

First we look on the content and main activity

Localisation, main activity and size
There are three variables, which are vital for business register or in general necessary to business surveys in general.

Localisation
This means province, district/city or the complete address. We will often call this a communication variable. If the address is not complete and updated we have problem in reaching the unit. Our questionnaire will never reach this unit.

Main activity
The activity defines the population we address in a survey. High quality on this variable is the first step toward a high quality survey. An annual confirmation of the activity code as well as possibility to continuous updating is of utmost importance for sector statistics.

Measure of size
The business population varies much in size compared to a population of people or families. Although we are different too the difference between the largest and the smallest company is often enormous. The number of employees is a good candidate as measure size and since we can confirm this information annually the quality should be very good.

Two activities
The quality of the business register is described booth of the content and the actuality of this information. The ability to detect new establishments, change in information or no activity is important for the business surveys.

Annual control
Its important to confirm the content of the business register once a year by some sources which is complete. As we know from the presentation about the business register a procedure is working

Continuous updating
When a new enterprise is formed and starts activity we should have this information in the business register as soon as possible. I think the provincial delegations could play a role here. The business register should notice especially new large units when they start the activity and the local delegations should focus on this as a part of their responsibility. This would improve short-term statistics.

Next we will say a few words about the business register as a frame for the business surveys.

Stratification, total population and auxiliary information
There are three important aspects concerning the business register and business surveys.

Stratification
As mentioned before stratification of the population improves the quality of a survey and often defines the design of the surveys. This means that the stratification defines the sample plan, which means the inclusion probabilities: The probability for a statistical unit to be included in the sample.

Total population
The business register should be the most updated overview over the population of enterprises and establishments relevant for economic statistics.

Auxiliary information
There should be information in the register which can improve the quality of the collected information in surveys and thereby the quality of the survey statistics. The number of employees can booth be use to design the survey but might also be used to compute estimates for missing information.

C.5. Business surveys

First we start with an overview of the business surveys at INE in table 4

Table 4 Overview of the business surveys

Surveys	Questionnaire	Number of enterprises in the register	Number of enterprises in the sample	Response	Sampling criteria
Annual enterprises survey, <50	IAE/50-	9 990	266	96	Main activity
Annual enterprises survey, >50	IAE/50+	703	246	131	Main activity
Monthly industrial production survey	PI-01	1 664	184	100	Value of production
Monthly construction survey	C-01	285	57	22	Value of work
Monthly internal trade survey	CI-01	5 083	219	57	Area
Monthly hotel survey, >50	HP-1	221	161	95	Area
Monthly hotel survey, <50	HP-01B	221	161	97	Area
Monthly survey on restaurants, cafes etc	RC-01	1 237	138		Area
Monthly labour and salary survey	FS-01	703	284	135	Main activity

I will now give some advice or recommendations about how to conduct the business surveys

Recommendations
The following points are basic:

- Stratification by province, main activity and the size (number of employees)
- Define the parameters to be estimated. Often this can be done by calculate how we would compute a figure if we included all units in the survey.
- Define or describe the quality requirements
- Calculate the number of units in the sample and distribute this over the strata.
- Draw the sample

We recommend in most cases: All large units, enough medium sized and some small units. By what do we then mean large, medium sized and small? You have to make a decision.

We now turn to an example of a sampling plan

Table 5 An example of sampling plan - industrial production

Size	Population	Inclusion probability	Sample
Large: >250	59	100	59
Medium: 50 - 250	188	50	94
Medium: 10-50	407	20	81
Small: < 10	1 064	5	53
Total	1 718		287

Some conclusions about business surveys
I will focus on four issues:

- Stratification of the population
- A measure of size
- Sampling probability proportional to size
- Large units should always be in the sample - sampling probability equal to ONE

C.6. Collection of data

First we present some main points:

- Collect only available information
- Instruction and explanation
- Co-ordination with the provincial delegations
- Control and correction by the provincial delegation
- Can part of the processing of data be done by the provincial delegations? Correct data to INE improves the quality

Response rate

Total non-response

Motivation isn't good enough
The figures asked for is not available
The instructions given is difficult to understand

Partial non-response
Questions impossible to answer
Too many details
No use for this information's
Time limit - too many questions
The information does not exist

C.7. Estimation of parameters

Main items
- The information given by the units must be controlled
- Missing observations are estimated(imputation)
- The estimates must checked in each strata(graphics)
- Totals or indices checked before publishing

Control of collected data

- Compare it with last period
- Compare it across strata
- Detection of outliers
- Correct outliers - deletion and imputation

Missing observation
- Is the unit still active?

Assume the unit is active - different techniques for imputation:
- Nearest neighbour - find a similar unit
- Cold deck
- Hot deck
- Mean

Estimates should be controlled in each strata
- The means in present period plotted against the means of previous period
- Outliers checked once more
- Extremes revised

Totals or indices checked before publishing
- Compare the present figure with the previous one
- Compare it with other statistics
- Jack-knife - delete on stratum at time and compute a new figures - computation of standard deviation
- More elaborate methods

C.8. Some conclusions and recommendations
- Business register
- Surveys
- Collection of data
- Estimation

Business register
- Annual confirmation or control
- Continuous updating
- Date of information and event

Surveys and collection of data
- All large, many medium sized and some small
- Probability sample
- Provincial delegation should be responsible for collection and control of data
- Increase the response rate

Estimation
- Define parameter and estimator
- Calculate estimates in each strata - graph them in a plot
- Investigate outliers - go back to microdata

Appendix D An overview over persons who assisted us during our stay

Name	Institution	Field of work
Leif Korbøl	Instituto Nacional Estatistica/Statistics Norway	Statistical advisor, economic statistics
Gunvor Iversen	Instituto Nacional Estatistica/Statistics Norway	Statistical advisor, demographic statistics
Leif Norman	Instituto Nacional Estatistica/Statistics Sweden	Team leader, strategic advisor
Bo Yttergren	Instituto Nacional Estatistica	Consultant, information technology
Dr. Valeriano Levente	Instituto Nacional Estatistica	Vice president, Head of Economic Statistics
Dr. Camilo Amade	Instituto Nacional Estatistica	Sector statistics and business register
Dr. Antonio Junior	Instituto Nacional Estatistica	Sector statistics (manufacturing)
Dr. Azarias Nhanzimo	Instituto Nacional Estatistica	Director of department of Service Statistics and Business Register
Mr. Cirillo	Instituto Nacional Estatistica	Business register
Mr. Saide Dada	Instituto Nacional Estatistica	National Accounts
Mr. Antonio Lazo	Instituto Nacional Estatistica	National Accounts
Maria Pires	Ministry of Planning and Finance	Macroeconomy
Jan Thomas Ødegard	UNIDO	Industrial development

Appendix E Examples of questionnaires- Annual survey of enterprises

INE - INSTITUTO NACIONAL DE ESTATÍSTICA

IAE / 50+

INQUÉRITO ANUAL ÀS EMPRESAS - 1997

Instrumento de notação do Sistema Estatístico Nacional
Lei 7/96 de Julho de 1996, de resposta obrigatória.
Registado no INE sob o nº1201

Atenção: Preencher com letra bem legível

CAP

Reservado para as Delegações Provinciais de Estatística Província: Codigo da empresa:

Leia atentamente as instruções e devolva este questionário devidamente preenchido às Delegações Provinciais de Estatística, no prazo de 15 dias úteis após a recepção.
A confidencialidade dos dados individuais é garantida por Lei

Este inquérito deverá ser acompanhado pelo Balanço Geral da Empresa, Mapa de Demonstração de Resultados e Mapa de Apuramento e Aplicação de Resultados

I - DADOS GERAIS DA EMPRESA

I.1. Identificação e localização da empresa

Nome da empresa (completo) ..... Sigla .....
Avenida ou Rua ..... Nº ..... C. POSTAL .....
Província ..... Distrito ..... Bairro / Localidade .....
Número(s) de telef. ..... ou ..... Fax .....
Orgão de tutela .....

I.2. Regime de propriedade e capital social da empresa

Assinale com X: 1. Estatal ou pública ☐ 2. Privada nacional ☐ 3. Estrangeira ☐ 4. Mista ☐ 5. Outro tipo ☐

Se mista: Indique a percentagem de participação
1. Estatal ou pública ☐ 2. Privada nacional ☐ 3. Estrangeira ☐ 4. Outro tipo ☐ TOTAL 100%

II - CARACTERIZAÇÃO E SITUAÇÃO DA EMPRESA

1. Descreva a **actividade principal** da empresa .....
2. Descreva **outras actividades** da empresa .....
3. Durante o ano de 1997 a empresa esteve algum **periodo sem actividade?** Sim ☐ Não ☐
   3.1 Se sim, diga o número de **dias úteis sem actividade** em 1997 ☐
4. Ano de constituição da **empresa:** ☐ 5. Nº de estabelecimentos (não incluindo a sede) ☐
6. A empresa tem contabilidade organizada? Sim ☐ Não ☐

III - PESSOAL AO SERVIÇO

DESCRIÇÃO	NÚMERO DE PESSOAL NO ÚLTIMO DIA ÚTIL DE CADA TRIMESTRE			
	1º TRIMESTRE	2º TRIMESTRE	3º TRIMESTRE	4º TRIMESTRE
1. PESSOAL NACIONAL (1.1 + 1.2)				
1.1 Remunerado (1.1.1 + 1.1.2 + 1.1.3 + 1.1.4 + 1.1.5+1.1.6)				
1.1.1 Dirigentes				
1.1.2 Técnicos (1.1.2.1 + 1.1.2.2+1.1.2.3)				
1.1.2.1 Superiores				
1.1.2.2 Médios				
1.1.2.3 Outros técnicos				
1.1.3 Empregados				
1.1.4 Operários				
1.1.5 Eventuais				
1.1.6 Outros				
1.2 Não remunerado				
2. PESSOAL ESTRANGEIRO (2.1 + 2.2)				
2.1 Pago pela empresa				
2.2 Pago por outras vias				
TOTAL (1+2)				

IV - REMUNERAÇÕES ANUAIS DO PESSOAL NACIONAL

1000 MT

DESCRIÇÃO	SALARIOS	REMUN. EXTRAS	SUBSIDIOS	TOTAL
1.1.1 Dirigentes				
1.1.2 Técnicos				
1.1.2.1 Superiores				
1.1.2.2 Médios				
1.1.2.3 Outros técnicos				
1.1.3 Empregados				
1.1.4 Operários				
1.1.5 Eventuais				
1.1.6 Outros				
TOTAL (1.1.1+1.1.2+1.1.3+1.1.4+1.1.5+1.1.6)				

V - OUTROS ENCARGOS COM O PESSOAL NACIONAL 1000 MT

1. Contribuição para segurança/prevenção social ☐
2. Outras contribuições ☐

VI - DESPESAS COM O PESSOAL ESTRANGEIRO 1000 MT

1. Remunerações ☐
2. Outras despesas ☐

VII - INDICADORES ESPECÍFICOS

A . NATUREZA DA ACTIVIDADE COMERCIAL (Deve ser preenchido apenas pelas empresas comerciais)

ASSINALE COM UM X:	1. Retalhista ☐	2. Grossista ☐	3. Importador/Exportador ☐		
	4. Agente de comércio ☐	5. Outra ☐	especifique.....		

B - INDICADORES DAS EMPRESAS DE TRANSPORTE (Deve ser preenchido apenas pelas empresas de transporte)

1. DISCRIMINAÇÃO DAS VENDAS

DESCRIÇÃO DAS RECEITAS	1000 MT	DESCRIÇÃO DAS RECEITAS	1000 MT
1 DE TRANSPORTE		3 DE CORREIOS E TELECOMUNICAÇÕES	
1.1. DE PASSAGEIROS		4 DE CARGA E DESCARGA DE NAVIOS	
1.2. DE MERCADORIAS		5 DA PRESTAÇÃO DE SERVIÇOS DE AEROPORTOS	
1.3. DE OUTRAS OPERAÇÕES DE TRANSPORTE		6 OUTRAS RECEITAS	
2 DA CEDÊNCIA DE ESPAÇOS DE ARMAZENAGEM		7 TOTAL	

2. EQUIPAMENTO DE TRANSPORTE (Indique o número de meios de transporte de que a empresa dispõe)

1 VEÍCULOS LIGEIROS DE PASSAGEIROS		7 TRACTORES	
2 VEÍCULOS LIGEIROS DE MERCADORIAS		8 REBOQUES	
3 VEÍCULOS LIGEIROS MISTOS		9 SEMI-REBOQUE	
4 VEÍCULOS PESADOS DE PASSAGEIROS		10 EMBARCAÇÕES	
5 VEÍCULOS PESADOS DE MERCADORIAS		11 AERONAVES	
6 VEÍCULOS PESADOS MISTOS		12 CONTENTORES	

Observações Indique qualquer outro esclarecimento que julgue com interesse referir.

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Carimbo da empresa

Indique o nome e função do funcionário qualificado para prestar qualquer esclarecimento acerca das dúvidas que possam surgir neste questionário.

Nome: ..... Função: .....

Telefone: .....Data: ..... / ..... / 199....

Assinatura do Director da empresa: .....

Para esclarecimentos sobre o preenchimento deste questionário dirija-se às Delegações Provinciais de Estatística ou directamente ao Instituto Nacional de Estatística na Avenida Ahmed Sekou Touré Nº 21, Caixa Postal 493 Maputo
Telefone: 490930 ou 491054 ext 207/266/267

QUANTIDADE DE IMPRESSOS A PREENCHER E SUA DISTRIBUIÇÃO:

ORIGINAL E 1ª CÓPIA: Delegações Provinciais de Estatística

SEGUNDA CÓPIA: Arquivo da Empresa

NOTA: Respeite os prazos fixados para entrega dos verbetes às entidades receptoras.

INSTRUÇÕES GERAIS DO PREENCHIMENTO

I. CONSIDERAÇÕES GERAIS

1. O preenchimento deverá ser efectuado com letra bem legível ou máquina.
2. Os valores monetários devem ser expressos em mil Meticais, sem casas decimais.
3. Não escrever nos espaços sombreados ou naqueles que são de preenchimento reservado para outras entidades.
6. Se o espaço reservado ao preenchimento de algum quadro for insuficiente, agradece-se que a empresa o complete numa outra folha e anexe-a ao questionário.

INSTRUÇÕES ESPECÍFICAS

II. CARACTERIZAÇÃO E SITUAÇÃO DA EMPRESA

1. Actividade principal - Entende-se por actividade principal, a de maior importância, medida pelo valor a preços de venda dos produtos vendidos ou fabricados ou dos serviços prestados durante o ano a que o inquérito respeita. Na impossibilidade de determinar qual das actividades tem maior volume de vendas, considere como principal a que ocupa maior número de trabalhadores com carácter permanente.
2. Estabelecimento - Toda unidade económica de produção (fábrica, mina, loja, oficina, etc.) que, sob um regime de propriedade ou de controle único, isto é, sob uma entidade jurídica única, exerça exclusiva ou principalmente, um só tipo de actividade económica num mesmo local.

III. PESSOAL AO SERVIÇO

Indique o número de pessoal existente no último dia útil de cada trimestre e que participaram na actividade da empresa, pelo que:
deve incluir: as pessoas temporariamente ausentes no período de referência para férias, conflito de trabalho,maternidade, formação profissional, assim como doenças, acidentes de trabalho de duração igual ou inferior a um trimestre. Inclue também os trabalhadores de outras empresas que se encontrem a trabalhar na empresa, sendo aí directamente remunerados.
deve excluir: os trabalhadores a cumprir o serviço militar em regime de licença sem vencimento, em desempenho de funções públicas, assim como trabalhadores com vínculos a empresa deslocados para outras empresas, sendo nessas directamente remunerados.

1.1. **Pessoal remunerado** - Pessoal que participa efectivamente na actividade da empresa, recebendo por este facto uma soma fixa pré-determinada em dinheiro e/ou géneros (as remunerações em géneros são avaliadas pelo valor de mercado).

1.1.1. **Pessoal dirigente** - Pessoal que define a política geral da empresa ou exerce uma função consultiva na organização da mesma. Deve-se incluir os administradores e directores de primeira linha (financeiro, comercial, produção, etc). o pessoal estrangeiro a desempenhar funções de direcções são incluidos na categoria de estrangeiros.

1.1.2. **Pessoal técnico** - Pessoal contratado para o desempenho de funções técnicas específicas dentro da empresa.

1.1.3. **Pessoal empregado** - Pessoal ligado a empresa por um contrato de trabalho e não incluidos entre os operários, isto é, o pessoal de escritório, os contramestres, mestres, quadros administrativos, pessoal do comércio, etc.

1.1.4. **Pessoal operário** - Pessoal contratado pela empresa para funções predominantemente manuais.

1.1.5. **Pessoal eventual** - Pessoal admitido por uma necessidade de serviço, isto é, trabalhadores não permanentes.

1.1.6. **Outros** - Pessoal não incluido em nenhuma das categorias anteriores. Deve-se incluir o pessoal a desempenhar funções não periódicas assim como os avençados (advogados, médicos, etc., contactados pela empresa e que dedicam um determinado tempo a prestar serviços na mesma).

1.2. **Pessoal não remunerado** - Pessoal que participa efectivamente na actividade da empresa sem receber uma remuneração regular, isto é, uma soma fixa em troca do seu trabalho, e as pessoas destacadas de outras empresas que não constem na folha do pagamento. Inclui-se aqui os proprietários e os trabalhadores familiares que trabalham sem receber uma remuneração regular.

2. **Pessoal estrangeiro** - Pessoal de procedência estrangeira a desempenhar funções na actividade da empresa.

2.1. **Pago pela empresa** - Pessoal estrangeiro pago com fundos provenientes da empresa.

2.2. **Pago por outras vias** - Pessoal estrangeiro a desempenhar funções na empresa , mas a receber uma remuneração regular através de outras fontes e não da própria empresa.

IV.REMUNERAÇÕES

Indique segundo a categoria ocupacional do pessoal nacional os montantes ou remunerações pagas em dinheiro ou em géneros antes da dedução de quaisquer descontos.

V.Outros encargos com o pessoal nacional

1. Contribuição para a acção social - inclue seguros de vida , acidentes de trabalho e pensões.
2. Outras contribuições - considere as quantias entregues aos trabalhadores em serviço ou não por causa de danos ou prejuízos de qualquer natureza durante o tempo de serviço

VI.Despesa com pessoal estrangeiro

1. Remunerações - Quantias pagas ao pessoal estrangeiro durante o período de referência desde que seja pago pela empresa. Despesas em moeda estrangeira devem ser convertidas a moeda nacional.
2. Outras despesas - Inclue as despesas de viagens ao país de origem do técnico e da família, custo de alojamento, pagamento de água e luz e outras despesas pagas pela empresa.

INE INSTITUTO NACIONAL DE ESTATÍSTICA

IAE / 50 -

INQUÉRITO ANUAL ÀS EMPRESAS - 1997

Instrumento de notação do Sistema Estatístico Nacional
Lei 7/96 de Julho de 1996, de resposta obrigatória
Registado no INE sob nº 1201

Atenção: Preencher com letra bem legível

CAP

Reservado para as Delegações Provinciais de Estatística Província: Código da empresa:

Leia atentamente as instruções e devolva este questionário devidamente preenchido às Delegações Provinciais de Estatística, no prazo de 15 dias úteis após a recepção.
A confidencialidade dos dados individuais é garantida por Lei

I - DADOS GERAIS DA EMPRESA

I.1. Identificação e localização da empresa

Nome da empresa (completo) ..... Sigla .....

Avenida ou Rua ..... C.POSTAL .....

Província ..... Distrito ..... Bairro/Localidade .....

Número(s) de telefone ..... ou ..... Fax: .....

Orgão de tutela .....

I.2. Regime de propriedade e capital social da empresa

Assinale com um X: 1. Estatal ou pública ☐ 2. Privada nacional ☐ 3. Estrangeira ☐
4. Mista ☐ 5. Outro tipo ☐

Se mista: Indique a percentagem de participação

1. Estatal ou pública ☐ 2. Privada nacional ☐ 3. Estrangeira ☐
4. Outro Tipo ☐ TOTAL 100%

II - CARACTERIZAÇÃO E SITUAÇÃO DA EMPRESA

1. **Descreva a actividade principal da empresa:** .....
2. **Descreva outras actividades da empresa:** .....
3. Durante o ano de 1997 a empresa esteve algum período sem actividade? Sim ☐ Não ☐
   3.1 Se sim, diga o número de dias úteis sem actividade em 1997 ☐
4. Ano de constituição da empresa: ☐ 5. Nº de estabelecimentos (não incluindo a sede) ☐
6. A empresa tem contabilidade organizada? Sim ☐ Não ☐

III - PESSOAL, CUSTOS E PROVEITOS

DESCRIÇÃO	
1. NÚMERO DE PESSOAL OCUPADO	
1.1 Remunerado	
1.2 Não remunerado	
2. CUSTOS **1000 MT**	
2.1. Remuneração aos trabalhadores	
2.2. Custo de mercadorias vendidas	
2.3. Custo de materiais consumidos	
2.4. Custo de serviços e fornecimentos de terceiros	
2.4.1 Água	
2.4.2. Energia eléctrica	
2.4.3. Gasolina e gasóleo	
2.5. Outros custos	
3. PROVEITOS **1000 MT**	
3.1. Venda de mercadorias	
3.2 Venda de bens produzidos	
3.3. Venda de serviços	
3.4. Outros proveitos	
4. IMOBILIZAÇÕES **1000 MT**	
4.1. Aumento de activos durante o ano	

IV. INDICADORES ESPECÍFICOS

1. NATUREZA DA ACTIVIDADE COMERCIAL (Deve ser preenchido só pelas empresas comerciais)

ASSINALE COM UM X:

1. Retalhista	☐	2. Grossista	☐	3. Importador/Exportador	☐
4. Agente de comércio	☐	5. Outro	☐	Especifique.....	

2. NÚMERO DE VEÍCULOS RODOVIÁRIOS QUE A EMPRESA DISPÕE (Deve ser preenchido pelas empresas de transporte)

1. Ligeiros de passageiros	
2. Ligeiros de mercadorias	
3. Pesados de passageiros	
4. Pesados de mercadorias	
5. Outros	
TOTAL	

Observações Indique qualquer outro esclarecimento que julgue com interesse referir.

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Carimbo da empresa
caso tenha

Indique o nome e função do funcionário qualificado para prestar qualquer esclarecimento acerca das dúvidas que possam surgir neste questionário.

Nome: ..... Função: .....

Telefone: .....Data: ..... / ..... / 199....

Assinatura do Director da empresa: .....

Para esclarecimentos sobre o preenchimento deste questionário dirija-se às Delegações Provinciais de Estatística ou directamente ao Instituto Nacional de Estatística na Avenida Ahmed Sekou Touré Nº 21, Caixa Postal 493 Maputo
Telefone: 490930 ou 491054 ext: 207/256/257

QUANTIDADE DE IMPRESSOS A PREENCHER E SUA DISTRIBUIÇÃO:

ORIGINAL E 1ª CÓPIA: Delegações Provinciais de Estatística
SEGUNDA CÓPIA: Arquivo da Empresa

NOTA: *Respeite os prazos fixados para entrega dos verbetes às entidades receptoras.*

INQUÉRITO ANUAL ÀS EMPRESAS - 1997 (IAE / 50-)

INSTRUÇÕES GERAIS DO PREENCHIMENTO

I. CONSIDERAÇÕES GERAIS

1. O preenchimento deverá ser efectuado em letra bem legível ou à maquina.
2. Os valores monetários devem ser expressos em mil Meticais, sem casas decimais.
3. Os valores de venda e compra de produtos, serviços e de mercadorias devem incluir impostos de consumo.
4. O quadro IV (1 e 2) é destinado a recolha de informações sobre indicadores específicos das empresas de comércio e transporte e comunicações, e deve ser preenchido apenas pelas empresas destes ramos de actividade.
5. Não escreva nas zonas sombreadas ou naquelas que são de preenchimento reservado ao INE.

INSTRUÇÕES ESPECÍFICAS

II. CARACTERIZAÇÃO E SITUAÇÃO DA EMPRESA

1. **Actividade principal** - Entende-se por aquela que tenha maior importância, medida pelo valor a preços de venda dos produtos ou serviços vendidos ou prestados durante o ano. Na impossibilidade de determinar qual das actividades exercidas tem maior volume de vendas, considere como principal a que ocupa com carácter permanente maior número de trabalhadores.
2. **Estabelecimento** - Toda unidade económica de produção (fábrica, mina, loja, oficina, etc.) que , sob um regime de propriedade ou de controle único, isto é, sob uma entidade jurídica única, exerça exclusiva ou parcialmente, um só tipo de actividade económica num mesmo local.

III. PESSOAL, CUSTOS E PROVEITOS

1. **Número de pessoal ao serviço** - Indique o número de trabalhadores existentes no último dia útil do ano de referência e que participaram na actividade da empresa pelo que:
   - deve incluir: As pessoas temporariamente ausentes no período de referência para férias, conflitos de trabalho, formação profissional, doenças, acidentes de trabalho de duração igual ou inferior a um trimestre. Inclui também trabalhadores de outras empresas que se encontram na empresa sendo aí directamente remunerados.
   - deve excluir: Os trabalhadores a cumprir o serviço militar, em regime de licença sem vencimento, em desempenho de funções públicas, assim como trabalhadores com vínculos à empresas deslocados para outras empresas, sendo nessas directamente remunerados.
2. **Pessoal ocupado remunerado** - Nº de pessoal que participa efectivamente na actividade da empresa recebendo por este facto uma soma fixa pré-determinada em dinheiro e/ou género (as remunerações em género são avaliadas pelo valor de mercado).
3. **Pessoal ocupado não remunerado** - Nº de pessoal que participa efectivamente na actividade da empresa sem receber uma remuneração regular, isto é, uma soma fixa em troca do seu trabalho, e as pessoas destacadas de outras empresas que não constem na folha de pagamentos incluem-se aqui também os proprietários e os trabalhadores familiares que trabalham sem receber uma remuneração regular.
4. **Remunerações** - Indique o montante das remunerações (salários , as remunerações extraordinárias e os subsídios) pagos ou devidos ao pessoal em dinheiro ou em espécies durante o ano, antes de quaisquer descontos.
5. **Custo de mercadorias vendidas** - indique o custo de compra, transporte e armazenagem das mercadorias vendidas. Por mercadoria entende-se bens adquiridos pela empresa para venda sem sofrer alterações à sua forma inicial.
6. **Custo de materiais consumidos** - indique o valor das matérias primas, materiais auxiliares e materiais adquiridos ou produzidos pela empresa utilizados durante o ano para a produção de bens e serviços.
7. **Custos de fornecimento e serviços de terceiros** - Indique o valor dos meios materiais que se destinam ao consumo imediato ou no exercício (ex: água, energia, ferramentas cuja vida útil não exceda um ano) e dos serviços de terceiros consumidos durante o ano (ex: correios, telefone, aluguer, etc.).
8. **Outros custos** - Indique o valor dos impostos (de circulação, consumo e outras taxas), amortizações e outros custos não abrangidos na posição anterior.
9. **Proveitos** - Indique as receitas resultantes da venda de bens e serviços decorrentes da actividade da empresa.
10. **Imobilizados** - Indique o valor dos bens de imobilizados (ex: construções, equipamentos, etc.) adquiridos ou produzidos pela empresa descontando os que a empresa deixou de dispôr, seja por desaparecimento, destruição ou alienação durante o ano.

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