# Measuring the Role of Tourism in OECD Economies

## THE OECD MANUAL ON TOURISM SATELLITE ACCOUNTS AND EMPLOYMENT

ENTERPRISE, INDUSTRY AND SERVICES

OECD

**PART II**

# OECD MANUAL ON TOURISM SATELLITE ACCOUNTS: EMPLOYMENT MODULE

*Chapter 7*

# THE RATIONALE FOR AN EMPLOYMENT MODULE

The primary objective of the employment module is to provide a statistical framework and methodological guidelines to establish the level and some characteristics of employment[8] in the tourism industry. This is mainly undertaken from a ***supply-side perspective***, with only employment in a set of selected characteristic tourism industries being taken into account.[9]

These guidelines should be consistent with the concepts and definitions followed in other areas of socio-economic and tourism statistics and are intended to be simple and flexible to enable adoption and adaptation.

In particular, this work aims to establish a link with the OECD Tourism Satellite Account (TSA).[10] Therefore, to the extent possible, the concepts and definitions of the *System of National Accounts* (SNA93) are used. The employment tables presented in Chapter 11 can be seen as a possible extension to the TSA.[11] However, the employment module should be able to stand on its own, *i.e.* employment should not be viewed simply as a factor in the production process (TSA), but rather as a social phenomenon. This broader view of employment does not fit in with the core tables of the TSA.[12]

The introduction of the two methodologies should lead in time to the generation of internationally comparable statistics on employment in the tourism industry. This will not be an easy task, because comparability of data on employment in general is hampered by differences in methods and definitions across countries. Even at the national level, employment statistics and data sources often provide different and fragmented results.

The collection of data on employment has two major goals:

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8. In addition to the term "employment", the terms "labour" and "human resources" are used interchangeably in this text.

9. In comparison with an industry such as "manufacturing", in national accounting terms there is no such thing as the "tourism industry". As tourism is a demand-side concept, in principal the terminology "tourism-related" or "characteristic tourism industries" should be used. However, for convenience's sake, the terms "tourism industry" or "tourism industries" are sometimes used in the text in the sense of tourism-related or characteristic tourism industries.

10. The TSA provides a description of that part of economic life known as "tourism", using the concepts, definitions and classifications of the national accounts (SNA 93).

11. See the possibility of combining economic and social data through Social Accounting Matrices (SAM) and Systems of Economic and Social Matrices and Extensions (SESAME) in SNA93.

12. The situation can also occur that a TSA has not yet been developed. In that case, the employment module will need to stand on its own.

- First, data can be used to describe and analyse the current employment situation in characteristic tourism industries in terms of, *inter alia*, numbers employed or jobs, socio-demographic characteristics of the labour force, labour conditions, mobility, labour structures, productivity, labour cost, job qualifications and skills, recruitment strategies and education and training provisions.

- Second, collected data can be used to analyse or predict the impact of (changes in) tourism flows and expenditures on employment levels and structures in the different industries related to tourism. This entails linking the supply side to the demand side of tourism. Such a linkage can be provided by the TSA.

Data on employment should provide valid, good quality and useful information for socio-economic and tourism policy makers in areas such as labour force and tourism planning, as well as for individual businesses or regions for benchmarking purposes. Examples include:[13] improving productivity and competitiveness through education and training, improving the efficiency of labour markets by reducing skill and occupational mismatches between supply and demand for labour, reducing the costs of high labour turnover, minimising unemployment, stimulating flexible labour practices, evaluating labour costs and improving job prospects by evaluating labour structures and labour conditions.

A core of this information should be supplied on a regular basis (time series), and possibly also through (short-term) indicators. Data should also provide insights into the economic importance of the tourism industry and its potential to create new employment.

The employment module does not present a comprehensive system of labour accounts or a social accounting matrix for the tourism industry (Tourism Social Accounting Matrix – TSAM). This would be aiming too high at the present stage. Rather, a selection is made from among the possible objects of description and a set of key employment variables is presented. A step-by-step process for elaborating and improving the module is proposed. The ultimate objective would be to construct an integrated employment system as a TSAM linked to the TSA with, for example, "the job or full-time equivalent" as the basis and benchmark for this framework. However, at this point in time, very few countries would be able to comply with the requirements for constructing such a comprehensive and complex system. This represents a priority area for improvement, especially as "jobs"[14] and related topics, such as hours of work, earnings and labour cost, are the variables which determine the link with the TSA.

Chapter 7 presents the objectives of the employment module and underlines the importance of the employment aspect for the tourism industry. Chapters 8 and 9 describe the conceptual framework and propose a methodology for defining and measuring tourism-related employment. On the basis of this methodology, Chapter 10 sets out the process for linking demand and supply of tourism and creates a statistical framework which connects the Tourism Satellite Accounts with the employment module. Chapter 11 introduces the fourteen inter-related tables and briefly explains their function. Finally, Chapter 12 indicates areas where improvements can be made and advocates the need for strengthening international co-operation in this area of work.

13. In the case of policy, there are three phases in which data can be used: *i)* the orientation phase (*e.g.* undesirable employment conditions); *ii)* the policy formulation phase (*e.g.* which alternatives or which instruments can be used); and *iii)* the evaluation phase (were the goals attained?).

14. Wages and salaries of employees is an important issue in relation to the compensation of employees. This item of compensation, however, is linked to the jobs for which this compensation is paid.

**Importance of the employment aspect for the tourism industry**

The OECD Tourism Committee first attempted to define the contribution of tourism labour markets to OECD Member country economies in the 1980s. Although little importance was attached to tourism in labour market policies at that time, there were signs that the industry had a strong potential to generate employment. The results of this study were incomplete in that they pertained only to the hotel industry labour market. It was not possible to analyse and draw conclusions on the complete range of jobs directly and indirectly linked to tourism. This is due to the fact that, while tourism is a heterogeneous industry representing a wide variety of types and sizes of businesses, it is not an industry in the traditional sense of the word and does not fit the standard criteria for national accounts.[15]

However, tourism is playing an increasingly important role in the economy of many of the OECD countries, contributing to their economic growth and job creation, and providing employment and income. Because tourism industries are seen as growth sectors and continue to be considered as labour-intensive with low entry possibilities, policy makers tend to view the development of tourism as a way to tackle unemployment and underemployment. This is especially the case for persons at the bottom of the labour market, such as unemployed youth, the long-term unemployed, the less-skilled, ethnic minority groups and, to some degree, women (re-entering the labour market).

In addition to the above arguments, the focus on employment in the tourism industry is reinforced by the fact that the tourism industry has matured into a consumer market through increasing global and national competition, market turbulence and changes in consumer demand. This requires paying increased attention, not only to quality in products and services, but also to quality in human resources – one of the major assets of this industry. This interest in human resources is taking two different directions.

First, increasing (global) competition entails greater emphasis on productivity through cost reduction and efficiency in business operations. Even in a labour-intensive industry such as tourism, this factor is leading to a growing elimination of human labour through strategies such as the use of (communication and information) technology, standardisation of products and services (*e.g.* job deskilling) and outsourcing. In addition, the rhythm of demand in the tourism industry varies according to seasons, working days and even different times of the day. The response to these fluctuations in demand, in conjunction with the weight of labour costs, has given rise to strong growth in numerical and functional flexibility in tourism-related employment, with relatively high proportions of seasonal and part-time workers.

The tourism-related industries are at the forefront of the current transition phase which is affecting labour markets in general. Labour markets are no longer homogeneous markets with clear-cut and steady jobs, they are becoming highly multiform markets with new flexible labour structures and work organisations. This transition is driven not only by globalisation, technological developments and changes in the organisation of work,[16] but also by new directions in tourism, such as super-segmentation of demand, and flexibility in supply and distribution.

15. See OECD (1995).

16. These three aspects play an important role in employment developments in general; they are intimately linked. By reducing costs and increasing the speed of communication, the new information technologies have played a major role in the globalisation of production and financial markets. In turn, globalisation, by intensifying competition, has spurred technological diffusion and the adoption of new forms of work organisation in both developed and developing countries. See ILO (1999).

Second, in order to compete and adapt to new market environments, it is essential for tourism-related industries to invest in the quality of staff and managers. Although human resources are the most valuable asset of these industries, paradoxically, the will to invest in education and training in some of the major branches (*e.g.* food and beverages, and accommodation) is relatively low compared with other industries. However, upgrading human resources and techniques, as well as improving management skills, are basic requirements for the further development of the industry. Too often, human resource planning is based on short-term thinking. This applies especially to small and medium-sized enterprises (SMEs), which still constitute a large share of the tourism industry.

Tourism is about people. Visitors are people, subject to changes in their behaviour, demands and decision making. Changes are difficult to predict and anticipate. Tourism products and services are also about people. The tourism industry is heavily dependent on the human factor (in addition to other factors such as natural resources, infrastructure and capital) to ensure delivery and quality of its products and services. Furthermore, many tourism products include people as an integral part of the expertise offered, whether as performers or as members of the cultural environment (Baum, 1995). People are clearly central to the effective operation and further development of the industry. Labour should not be treated simply as variable costs, but as human capital. A high-quality skilled workforce will ensure greater competitiveness and innovation, improve job prospects and ease the process of adjustment in changing markets. Therefore, employment and human resource issues should be key topics for research in the tourism industry.

This growing attention to human resources, however, highlights the danger of circulating questionable data and stereotypes. This is reinforced by the lack of complete and reliable statistical data on employment in characteristic tourism industries. This lack of data can be explained by the diverse nature of tourism and by the problems involved in collecting reliable data for these industries.[17] Statistics should play an important role in uncovering these stereotypes and in monitoring developments. A statistical instrument is needed to measure and describe tourism-related employment in a more consistent way. International co-operation and co-ordination can stimulate the development of such an instrument.

17. See, for example, Bar-On (1989).

*Chapter 8*

# CONCEPTUAL FRAMEWORK

Employment is a comprehensive, complex and dynamic phenomenon, closely related to other socio-economic aspects such as the production process, income distribution, education, living conditions, welfare and demographics. Relevant components of employment include:

- Unpaid labour.
- Unemployment.
- Employment or paid labour.
- Supply of paid labour.
- Demand for paid labour.
- Labour market.
- Wages, income and labour cost.
- Governments, unions, representative organisations and other institutions, such as employment agencies.

Employment, whether paid or unpaid, has to be viewed from different perspectives. First, employment has an important social context; for example, people derive social status through employment. Social status is strongly determined by level of income and employment provides opportunities for social contacts. These aspects relate to employment as a *social phenomenon*.

Second, employment is related to the process of producing goods and services. The volume of production, for example, is closely linked to the amount and quality of labour used. This point of view considers employment as a *production factor*.

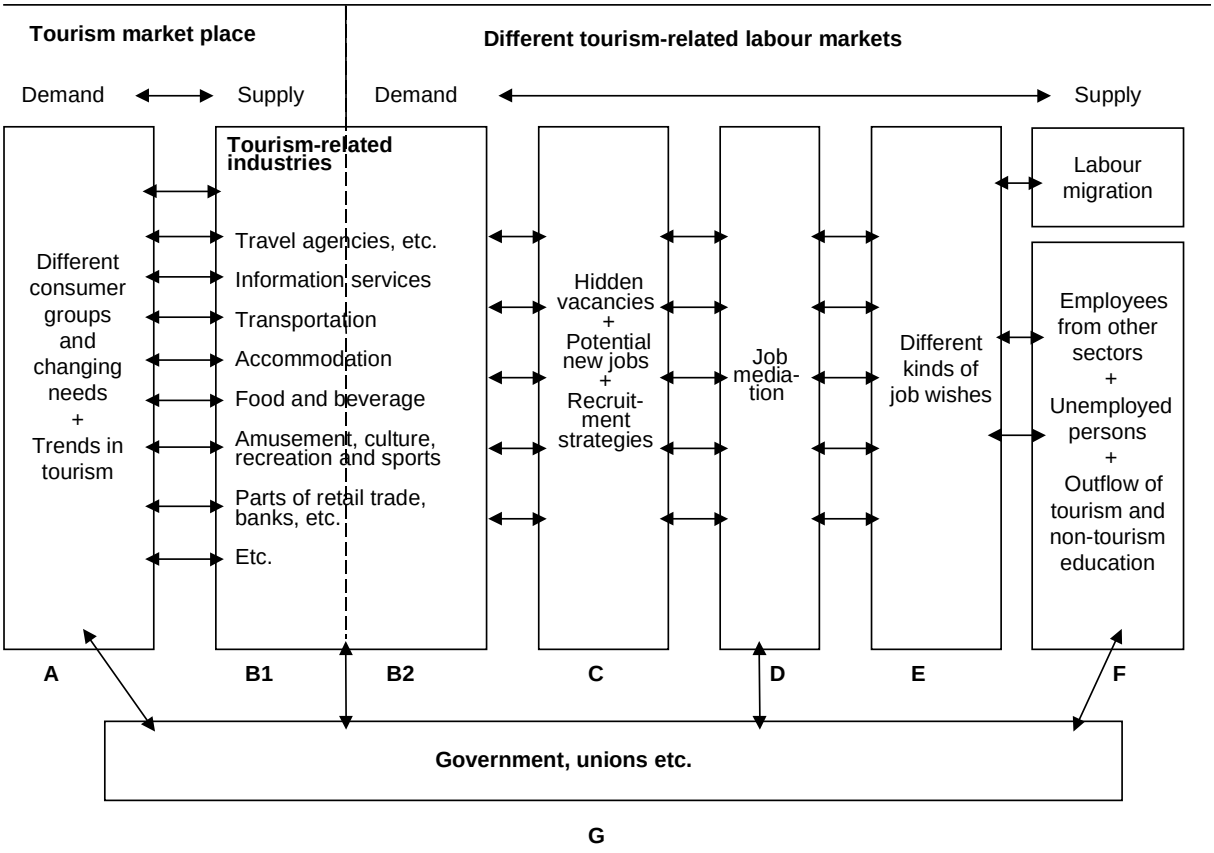
Third, employment can be seen as a *tradeable product on the (labour) market* in the context of demand and supply, *i.e.* the labour cost for employers, on the one side, and income for employees, on the other. This can be of importance for labour negotiations or developments in labour markets in general. The second and third perspectives perceive employment mainly as *paid* labour.

In this module, the focus is also on *paid labour*. Although unpaid labour (*e.g.* voluntary work, housekeeping, etc.) should not be neglected, limiting the analysis to paid labour reflects the way in which most employment data are collected. It is also in line with the way employment is used in the national accounts, *i.e.* as a production factor.

The demand-side definition of "tourism" fits this context, *i.e. the activities of persons travelling to and staying in places outside their usual environment* (column ***A*** in Figure 1). So, "tourism" refers

to all activities of visitors, covering both same-day as well as overnight travellers.[18] Visitors use a variety of products and services to travel to and stay in places outside their usual environment. To provide for these tourism products and services, all kinds of *enterprises and organisations* on the supply side need to employ inputs, such as capital, materials and labour (***B***).

Figure 1. **Framework of tourism-related labour markets**




The enterprises and organisations in the various tourism industries differ greatly in the ways they provide these products and services to visitors and the ways in which they react to changes in the market place. Besides fluctuations in demand, this will depend on all kinds of factors such as: the products or services they provide; the way these products and services are produced; the use of technology; economic strategy and performance; competition and size and ownership (***B1***); and, in addition, the availability of qualified labour; labour cost; labour conditions and productivity (***B2***).

To hire the necessary labour, employers have to look (***C-D***) at the *supply side of labour markets* (***E-F***), where people with varying levels of skills and experience and with different expectations and wishes are available. As there is no equilibrium between demand and supply of labour, this leads to *(hidden)*[19] *vacancies (**C**),* on the one side, and unemployment and underemployment,[20] on the other.

18. See the definitions and boundaries provided in United Nations and WTO-OMT (1994).

19. Hidden vacancies often occur if there is a shortage of supply on the labour market.

20. Underemployment means that people have a job, but that they work fewer hours than they would like.

So, the ***demand side*** of labour markets consists of jobs and (hidden) vacancies. Relevant aspects are, for example, the number of jobs, hours of work (full-time/part-time; paid and actual hours of work), overtime, wage categories, job requirements and working conditions. Employers usually try to optimise the ratio of labour to capital. The ratio can be influenced by changes in the level of wages. In the same way, changes in the level of wages between different labour categories can lead to substitution between these categories.

Employers will use different *recruitment strategies (**C**)* and different types of *job mediation* (***D***) to fill their vacancies. The vacancies have a wide variety of job requirements and conditions, such as education levels, skills, experience, hours of work and salary.

Part of the value added of the production process goes to pay the wages of employees and the income of employers and family members. Relevant aspects are, for example, type of wages (*e.g.* minimum wages, collective agreements and piece-wages), wage or income components and related labour conditions (*e.g.* shift work or hazardous circumstances).

On the ***supply side*** of labour markets, a distinction can be made between the employed and the unemployed. For the employed (*paid labour)*, relevant aspects are the number of people employed, distinguished by socio-demographic variables like age, gender, labour income, education level, motivation for working in a specific industry and the kind of household one belongs to. In addition to these aspects, there is also a dynamic component. Changes in the number of employed in industries, or changes in the number of unemployed, are the result of people moving in and out of the workforce and between industries.

The supply of labour is strongly determined by demographic trends, participation rates and the range of skills[21] available. In general terms, the supply of tourism-related labour can be divided into four groups: *i)* graduates with a tourism education; *ii)* graduates with no tourism education; *iii)* unemployed persons; and *iv)* employed people from other industries (***F***). These people will have different skills, experience and qualifications, as well as a variety of *expectations and wishes* (***E***). They will use all kinds of *job mediation* (***D***), such as advertisements, applications, schools, personal networks, public employment offices and employment agencies, to find a suitable job.

The supply of labour is also influenced by the extent of *inward and outward labour mobility.*[22] Critical labour shortages in the peak season of tourism are often filled by *immigrant seasonal workers*. Such workers are often used to occupy poorly paid, insecure and unpleasant jobs. Labour immigration will have an effect on the local labour market as well as on the labour market in the country the immigrant workers come from. For example, unemployment is exported back to the homeland at the end of the peak season. Employers use immigrant workers, as well as students and casual workers, to hold their costs (wages) down, especially in situations with growing competition and small economic margins. This also relates to the issue of *black or illegal labour.*[23] Black labour does not only affect the

21. Skill is often translated into the number of years of experience and the certificates and diplomas a person has obtained.

22. It is often difficult to measure inbound labour (frontier and immigrant workers). In some cases social insurance statistics or other administrative registrations can be used. Sometimes industry surveys provide data. Outgoing labour can usually be measured through general household or labour force surveys.

23. Other terms, such as informal labour, hidden activities and parallel economy are also used. Although research has been carried out on black labour, it does not allow accurate estimates of the volume of hours involved to be derived. The size of the black labour market strongly depends on the definition and methods used to measure the phenomenon. Fiscal (activities which are at odds with prevailing tax regulations), statistical (activities which should be, but are not, covered by official statistics),

economic process, it can also lead to a decrease in the supply of and demand for formal labour. One problem is that much of the black labour and informal economy goes unrecorded in the official statistics, so that this part of the tourism industry remains outside the picture.

The wider competition between companies and organisations for available skills within the workforce and for school-leavers can also influence the supply of labour. For example, where the supply of labour to tourism industries is not perfectly elastic, growing demand can raise costs and thereby reduce the competitiveness of these industries as well as the competitiveness of other industries which are competing for the same labour. Therefore, there can be a difference between gross and net employment effects as a result of an increase or decrease of tourism flows and expenditures.

The competitive advantage of countries in a global economy increasingly depends on the availability of skilled labour. This is also true for the tourism-related industries. Therefore, the structure of and focus on (public and private) educational and vocational training provisions are important issues. For labour market policies, it is also important to know the level of education and the degree of experience of the different groups of the workforce, on the one hand, and job requirements, on the other. Education levels can, for example, be linked to earnings and occupation.

Finally, the whole structure of supply and demand of labour is influenced by the policies enacted by a wide range of bodies, such as *governments, unions and employer's organisations (**G**)*. This may include not only fiscal policies, education and training provisions, employment creation and related incentives, employment protection measures and workplace conditions, but also infrastructure, investments, promotion and marketing. In addition, governments are often also major employers in tourism (museums, information services, transport and public-owned attractions). Policy makers view tourism as a potential agent of economic growth and development. The high ratio of labour to capital in many of its industries, the ease of entry into the market, lower per capita investments and rapidity of development, compared to other industries like manufacturing, make tourism particularly attractive to policy makers, especially in less developed regions and countries.

So, in its broadest sense, a labour market comprises the total working environment at sectoral, local, national and even transnational level. In the case of tourism, this working environment consists of all characteristic tourism industries, their personnel requirements, the skills needed and the working conditions; it also comprises those workers who are currently outside the workforce, whether because they are unemployed, temporarily unable to work because of illness or injury, or undertaking some kind of training or education. A labour market is a dynamic concept responding to a diversity of factors which cannot be treated as static and unchanging. Perfect labour markets, in the sense of well-oiled machines which balance demand and supply of labour, do not exist (Baum, 1995). Analysis and forecasts are further complicated by the fact that the tourism industry is characterised by a diversity of activities in different industries, bound only by their contribution to a common goal: meeting the needs of visitors. This diversity is expressed in differences – sometimes large differences – in the employment profiles of characteristic tourism industries and regions.

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economic market (a distinction between paid and unpaid labour) or juridical (illegal, like the distribution of drugs) are the criteria are most frequently used to define black labour. Various methods can be used to measure it, such as ratio-methods, comparison between different sources (*e.g.* black production and black income) and direct surveys. Countries sometimes use household surveys to detect the informal sector, using a set of criteria to define this sector. Estimates of black labour differ widely across countries. For example (as a percentage of GDP): the United Kingdom, 3%-15% (1979); Australia, around 10% (1979), Canada, 10%-15% (1980); the United States, 5%-28% (1979); and the Netherlands 5%-23% (1983). See, for example, van Eck and Kazemier (1989).

However, there is no single tourism-related labour market. The working environment of characteristic tourism industries consists of a conglomerate of sub-markets, which are distinguished in a regional and functional way. There is often little mobility between these sub-labour markets. The differences in these markets originate in differences in education, experience and skills, and the relatively reduced possibilities for employers to change job requirements. In this respect, jobs in the tourism industries vary from low-skilled to very high-skilled.

In this light, some specific features of tourism-related employment include (Baum, 1995):

- Often high levels of ***fluctuation in demand*** for its services and products. In combination with growing (global) competition and downward pressure on costs, employers react with strategies such as substitution of labour by technology, deskilling of tasks and outsourcing, but foremost with *numerical and functional flexibility* in their labour force. This need for flexibility is increasingly resulting in new multiform labour structures and work organisations, often leading to dual labour markets within companies, with core and peripheral workers, or primary and secondary jobs.[24] Core workers are mainly full-time, permanent employees who receive job security and relatively high earnings in return for performing a wide range of tasks that cut across traditional skill boundaries. These workers are often functionally flexible (multi-skilling). Characteristically, they are managerial and professional staff whose skills are in short supply in the external labour market. Employers are therefore keen to retain their services. Depending on the circumstances, several groups of peripheral workers can be situated around these core employees. First, there is a group of usually regular, but often seasonal, employees. Their jobs are less secure, they lack career prospects and they are often semi-skilled or unskilled. These jobs are often accessible to workers with a minimum of training and offer numerical flexibility to employers. Labour turnover is high. In addition to this first group of peripheral workers, there are other groups of numerically flexible workers, such as short-term and part-time workers, temporary or on-call workers and students. These workers often function as a reserve pool, to be hired and fired as the volume of demand rises and falls. If the fluctuation in demand is predictable (every weekend, for instance), then a job in tourism can be combined with other paid jobs ("moonlighting") or a complementary job in the off-season. This description accounts mainly for the medium-sized and bigger businesses in industries such as food and beverages, accommodation, recreation. In small firms, employers will often have a pool of friends and family upon which they can draw to meet peaks in demand.

- Many tourism-related industries are dominated by ***self-employment and small family firms.*** This concerns mainly industries with low entry levels such as accommodation, food and beverages, travel agencies, retail (*e.g.* souvenir shops) and recreation. These firms often compete with low prices and personalised service or work in niche markets, implying weakly developed management skills, use of family labour, *ad hoc* human resource planning and little or no access to new technologies. Because there are low levels of investment and little market stability, this group of businesses is rather unstable, with many births and deaths of firms. On the other hand, tourism-related industries also include large, often still traditionally public-owned, enterprises (*e.g.* transport, hotel and restaurant chains, amusement parks and tour operators). This group is characterised by the use of non-family labour, high levels of capital investment, division and specialisation of labour, a formal system of management and the separation of control and ownership. In general, there is a strong underlying trend in all (tourism-related) industries towards concentration into bigger businesses, either horizontally,

24. Elliot (1991).

vertically or both.[25] These bigger enterprises have the advantage of economies of scale and the possibility of internal division of labour and specialisation. For their employees, these businesses can offer better training facilities, career opportunities and labour conditions. Thus, in terms of size, ownership and structure of businesses, there is a considerable diversity in the tourism-related industries.

- Most tourism-related industries remain ***labour intensive,*** although the impact of (information and communication) technology is becoming more and more evident. However, the impact of these new technologies on employment is not easy to assess. On the one hand, new technologies can lead to the substitution of labour and therefore to fewer jobs. On the other hand, new technologies can lead to lower prices (higher productivity) and hence increased demand. Greater demand for products and services will lead to higher employment (*e.g.* travel agencies and fast-food restaurants). In terms of the quality of labour, new technologies tend to require higher skills, but can also lead to further deskilling of jobs (lower skills). Although new technologies do not necessarily lead to the need for "higher" skills, they do lead to a need for "different" skills, especially in the context of more flexibility and new organisations of work.[26] The fact that most tourism industries are constrained by their *service characteristics* (*i.e.* production and consumption are inseparable) means that products and services often cannot be stored. These service characteristics make it difficult to improve productivity and value added through higher output at lower costs without decreasing the quality of services offered and losing competitiveness.

- Some of the major tourism-related industries (*e.g.* accommodation, food and beverages) are dominated by an ***image of poor labour conditions***, such as low pay, low skills and long, irregular working hours. This can lead to high labour turnover and instability in the labour force. This picture accounts especially for the "low side" of tourism labour markets. Increased competition, combined with the service characteristics of these industries, however, often make it difficult to offer more attractive wages and labour conditions. On the other hand, these labour conditions respond to the needs of certain categories of the labour force. That having been said, it should be emphasised that the tourism industry is a sizeable and heterogeneous industry, offering large numbers of well-paid and desirable jobs.

- Despite the importance of the human factor in characteristic tourism industries, little attention appears to be given to ***training and education***. This is especially true for small firms, where labour conditions such as seasonal work, high proportions of part-time workers, high labour turnover and poor or limited career opportunities, do not invite employers or employees to invest in training and education.[27] When training is offered, it is often a short-term expedient, designed to teach staff how to do their current job better, and no more. In operational terms, however, knowledge, experience, motivation and social skills are essential to quality in services, for both large and small enterprises. Other problems include the lack of an educated labour force and inefficiencies in tourism-related training and education.

Thus, the range of industries, the size of businesses, their ownership, the markets they serve and the impact of seasonality illustrate some of the factors which contribute to determining the range of tasks undertaken, the number of people employed and the skills required in characteristic tourism industries. These factors are driven by range of complex interactions determined not only by demand and supply of labour, but also by other aspects such as: the *culture and history* of the industry or

25. This is more valid for the developed than the developing countries. Countries which are at the leading edge of these developments include, for example, Japan and the United States.

26. This is a general trend in most industries, for developed and developing countries alike (ILO, 1999).

27. ILO (1999).

region (*e.g.* developed vs. developing countries), the *economic system* (*e.g.* free market vs. planned economy) and *economic factors*, which influence the demand for products and services and the price that will be paid for them.

*Chapter 9*

# METHODOLOGY: CONCEPTS AND DEFINITIONS

Three major issues arise in relation to the methodology: *i)* the supply side of tourism has to be defined; *ii)* employment has to be defined; *iii)* the key variables of tourism-related employment have to be selected and defined.

Since one of the objectives of this exercise is to link the employment module with the TSA, national accounts' (SNA93) concepts (the basis of the TSA) are used to the extent possible. This accounts for the linking variables, such as jobs, total hours of work, full-time equivalents and compensation of employees. Otherwise, the definitions and classifications of the International Labour Office (ILO) are used. For an individual country, much depends on the employment data sources available, and the concepts and definitions used in the compilation of the data. In many cases, these will not fully comply with international concepts and definitions.

## A demand- and supply-side definition of tourism

Tourism-related employment is mostly approached from a demand-side perspective. However, defining tourism from a *demand-side perspective*[28] will provide only crude estimates of the number of jobs or the total labour-volume of the employment generated by tourism. This can, for example, be done by translating expenditures in or output of an industry into number of jobs, using a labour coefficient or ratio.[29]

A simple example follows. On the basis of collected statistical data, the total expenditure of visitors using travel agencies in region X is USD 40 million in year Y, that is, after deduction of taxes, VAT and imports. Total employment in that industry in region X is 100 jobs (not necessarily the number of people employed). From this, a labour coefficient[30] can be derived for travel agencies in region X in year Y, that is: 2.5 (40 million/100 = USD 400 000 per job). This labour coefficient can be used in a number of different ways. For example, it can be used to predict that an increase in expenditure by visitors using travel agencies in region X by USD 1 million, again, after deduction of taxes, etc., will provide 2.5 new jobs. Using, for example, input-output tables, the *indirect employment* effects of such an increase in tourism expenditure can also be estimated.

28. The expenditures made by, or on behalf of, the visitor before, during and after the trip. See Chapter 1.

29. Even if one starts from the demand side, the labour coefficient originates from the supply side. In this sense, the two perspectives are interlinked. Coefficients are sometimes used to distribute full-time/part-time and male/female ratios over the estimated number of jobs.

30. See, for example, Hansen and Jensen (1996).

Text Table 1. **Selection of characteristic tourism industries (refer to the TSA)**

| | |
|---|---|
| ❒ 55 | Hotels and restaurants, of which:<br>**551 Hotels, camp sites and other commercial accommodation**<br>**552 Restaurants, bars and canteens** |
| ❒ 60 | Land transport, of which:<br>**601 Railways**<br>**602 Other land transport**<br>(6021 Other scheduled passenger land transport)<br>(6022 Other non-scheduled passenger land transport, including taxis) |
| ❒ 61 | Water transport, of which:<br>**611 Sea and coastal water transport**<br>**612 Inland water transport** |
| ❒ 62 | Air transport, of which:<br>**621 Scheduled air transport**<br>**622 Non-scheduled air transport** |
| ❒ **6304** | **Travel agencies, tour operators and tour guides** |
| ❒ **7711** | **Car rental** |
| ❒ 92 | Recreational, cultural and sporting facilities, of which:<br>**921 Motion picture, radio, television and other entertainment activities**<br>(9212 Motion picture projection)<br>(9214 Dramatic arts, music and other arts activities)<br>(9219 Other entertainment activities, n.e.c.)<br>**923 Libraries, archives, museums and other cultural activities**<br>(9232 Museum activities and preservation of historical sites and buildings)<br>(9233 Botanical and zoological gardens and nature reserves activities)<br>**924 Sporting and other recreational activities**<br>(9241 Sporting activities)<br>(9249 Other recreational activities) |
| ❒ | **Other tourism-related industries, *e.g.* retail of tourism commodities, financial services, etc. (see TSA)** |

In addition to its methodological deficiencies, this method cannot tell us anything about the composition of employment in travel agencies in region X. For example, the gender, age or nationality of those occupying these 2.5 jobs is unknown. We cannot even say how many people will be employed due to the creation of these 2.5 new jobs. That would depend, for example, on the full-time/part-time ratio, the availability of skilled labour and the timeframe in which the expenditures are made. So, to say something about the composition of tourism-related employment, a ***supply-side approach*** is always needed. This entails defining tourism from the classification of enterprises and organisations that offer products and services to visitors. For this, the ISIC classification, *i.e.* the main economic activity of an enterprise or organisation on the basis of the International Standard Classification of Industry (ISIC, Rev. 3), can be used.

From an employment perspective, this approach differs fundamentally from other possible approaches, such as a description based on occupations using the International Standard Classification of Occupations (ISCO-68 or ISCO-88) (see Appendix 1).

However, because tourism cuts through and merges into a variety of industries, it is difficult to define the production boundaries of tourism from a supply-side perspective. Here the results of the TSA can be very helpful. The TSA relates tourism consumption on the demand side to the supply side, providing some indication of which producing industries are important for tourism. Therefore, the

boundary of the "tourism industry" chosen for the TSA is followed to the greatest extent possible (Text Table 1). For the arguments underlying the selection of the industries, the reader is referred to the TSA. Matching the selection of industries between the employment module and the TSA is important for creating the appropriate linkage between the two statistical information systems at a later stage. It also means that, for the time being, only direct employment is considered. Indirect and induced employment are left aside,[31] although some information can be derived using the tables of the TSA.

However, some clarification is needed. In the TSA, some specific tourism activities are mentioned. Among these activities:

- Ski lodges should be included in the group of recreation, etc., (924),[32] or presented separately (as a possible "of which" group or class).
- Health spas should be included in the group of hotels, etc., (551),[33] or be presented separately (also possible class 8519: other human health activities).
- Cruises and ferries should be included in the groups sea and coastal water transport or inland water transport or presented separately (as a possible "of which" group or class).
- Rental of accommodation, like second homes, is not taken into account (see ISIC 70: real estate activities). This group would appear to be of little importance in terms of employment. The SNA indicates that there is no labour input into the production of the services of owner-occupied dwellings. Therefore, owner-occupiers of dwellings are not considered as (self-) employed persons.
- Fuel (505), clothing, food, beer, etc. (of which 522 and 523), conventions (7499) and financial services/insurance (of which 651) should be included in the group "Other tourism-related industries". It is, however, important to indicate which industries, such as retail, financial services, etc., are included in this generic group. If possible, these industries should be presented separately as an "of which" group. For example, conventions can be important for business tourism (possible as a separate class 7499: other business activities n.e.c.).
- The remaining activities mentioned in the TSA can be classified in the appropriate group or class (see Text Table 1).

Due to the limitations of (official) employment statistics in many countries, the classification of industries is, for the time being, restricted to the three-digit level of the ISIC classification, with the exception of travel agencies and tour operators and car rentals. In the future, this classification could be elaborated to a four-digit level (see, for example, the classes in brackets). This would enable a better definition of the tourism industry.[34] For reasons of comparison, however, it must be possible to aggregate to the three-digit level.

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31. The terms "indirect" and "induced" are used differently here than in the TSA. Refer to Appendix A of the TSA.

32. See the WTO Standard International Classification of Tourism Activities (SICTA) in United Nations and WTO-OMT (1994).

33. Refer to the SICTA.

34. This depends on the availability of statistical data in a country. Two pilot surveys conducted by the OECD in 1997 and 1998 show that it will not be easy to collect reliable employment data at a four-digit or more detailed level of the ISIC classification.

Depending on the situation in a given country, the selection of industries can, of course, be elaborated or adjusted with other (sub-)industries. For example, important industries can be highlighted as "of which" groups or classes. However, it is important that the connection with the TSA is ensured. This applies also to countries wishing to present the data at a four-digit or more detailed level. The availability of reliable statistical data is an essential precondition.

It must be made very clear that employment in the selected tourism industries, seen from a supply-side perspective, is not the same as ***total employment generated by the expenditure of visitors.*** First, the selected tourism industries can also provide products and services to non-visitors. Second, visitors spend their money not only on products and services of the selected tourism-related industries, but also on products and services from a variety of other industries.

**Definition of employment**

Employment and related topics are comprehensive, complex and dynamic social phenomena. It would not be possible to set up a statistical information system that describes these phenomena in all their facets. It is necessary to make a selection of the most relevant objects of description.

This module focuses only on *paid labour*, *i.e.* employment (employees and the self-employed) in or the workforce of characteristic tourism industries (***B2*** in the framework presented in Figure 1). This is in line with the both the SNA and the TSA, which view employment as a production factor. In addition, the International Labour Office (ILO) definitions of the labour force and the economically active population[35] are strongly related to the production of goods and services. Contrary to the current SNA, however, for the time being no effort has been made to estimate black or illegal labour.

Even when the analysis is limited to paid labour, the system remains rather extensive. Further limitations have to be made concerning the objects of description and their characteristics. A major outline is the way labour is utilised (Figure 2). This means leaving aside aspects such as (hidden) vacancies, underemployment, recruitment strategies, job mediation, unionisation and education and training provisions. These variables can be added in a later phase of development.

The "employed" comprise all persons above a specified age, who during a specified period, either a week or one day, were in one of the following categories: *i)* paid employment; or *ii)* self employment.[36]

*Paid employment (employees)* describes:

- *At work:* persons who, during the reference period, performed some work for wage or salary, in cash or in kind.
- *With a job but not at work:* persons who, having already worked in their present job, were temporarily not at work during the reference period, but have a formal attachment to their job.[37]

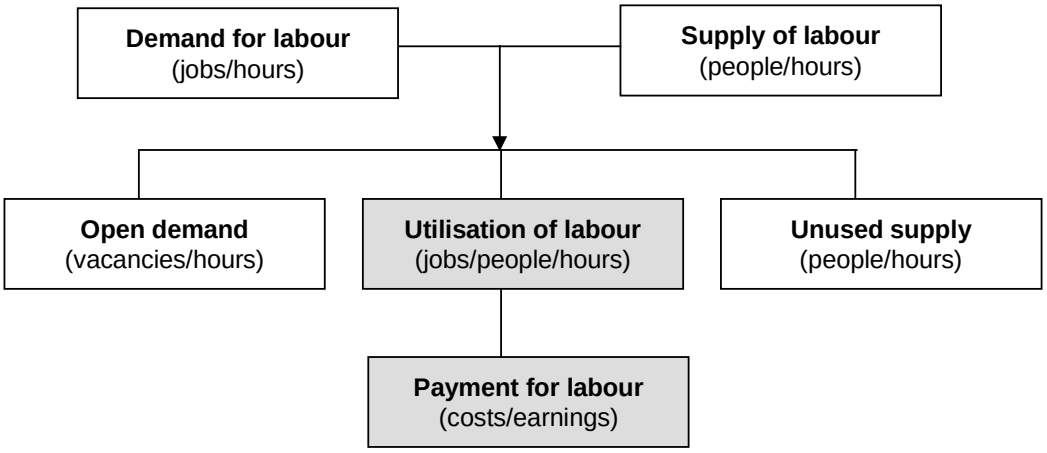
35. The economically active population comprises all persons of either sex and over a certain age, who furnish the supply of labour for the production of economic goods and services as defined by the United Nations systems of national accounts and balances, during a specified time-reference period. See ILO, Thirteenth International Conference of Labour Statisticians, Resolution concerning statistics of the economically active population, employment, unemployment and underemployment, 1983, Geneva.

36. For further details, refer to the definitions of the International Labour Office (ILO).

*Self-employment* comprises:

- *At work:* persons who, during the reference period, performed some work for profit or family gain, in cash or in kind.
- *With an enterprise but not at work:* persons with an enterprise, which may be a business enterprise, a farm or a service undertaking, who were temporarily not at work during the reference period for any specific reason.

Figure 2. **The utilisation of labour**




An employee is thus characterised by some kind of employer-employee relationship. There is an agreement, which can be either formal or informal, between an enterprise and a person, whereby the person works for the enterprise in return for remuneration in cash or in kind. The self-employed, on the other hand, are persons who are sole owners or joint owners of the unincorporated enterprises in which they work.

Self-employment can be divided into two groups: those with and those without paid employees of their own. Those with paid employees are described as employers and those without paid employees are described as *own-account workers*. An *out-worker* is an own-account worker who is under some kind of formal or informal contract to supply goods or services to a particular enterprise.

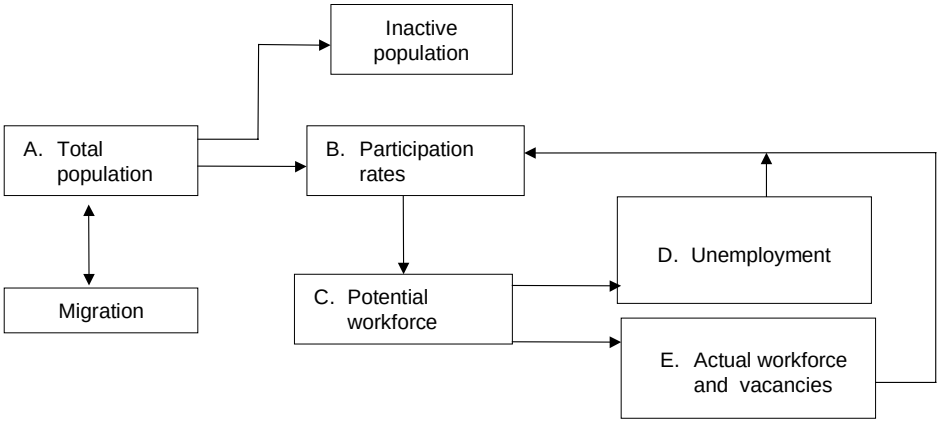
Figure 3 provides a picture of the concepts relating to employment. The volume of the *potential labour force* (***C***),[38] *i.e.* the total labour supply (employed + unemployed), depends on the *participation*

37. In the SNA, persons who are not paid under such an agreement, being either laid off or absent on training, are not considered to be employed. Persons who have a formal job attachment; that is, they continue to receive wages of some kind, they have an assurance of return to work and they are without an obligation to accept other jobs, are considered to be employees. This covers, for example, persons temporarily absent from work through illness, injury, holiday or vacation, strike or lockout, educational or training leave, parental leave, reduction in economic activity and suspension of work due to reasons such as bad weather, mechanical breakdown or shortage of materials.

38. In terms of the ILO: the usually or currently active population.

*rate* (***B***) of the *population* (***A***) of a region or country. This is influenced, for example, by the age structure of the population and the rate of unemployment, which can discourage people from looking for a job. The demand for labour consists of the *actual labour force plus (hidden) vacancies* (***E***). The demand for labour and the potential labour force together determine the *rate of unemployment* (***D***).[39]

Figure 3. **General concepts relating to employment**




Employment can be expressed as *employed persons*, as *jobs* and as *labour volumes* expressed in *hours of work* or in *full-time equivalent (FTE)*. Work means any activity which contributes to the production of goods and services within the production boundary. In that framework, labour markets can be characterised by the demand for and the supply of labour. Establishments need people to perform labour on the various posts within a firm. These posts can be vacant (vacancies) or filled (jobs). If a job is filled, people perform work in return for payment or profit. This may be for a defined period or until further notice. Payment for labour leads to an income for those employed and to costs for the establishment. If a person is the proprietor of an unincorporated enterprise, he/she is classified as self-employed. Some employed people will also have a job on the side.[40] These second, third, etc., jobs may either successively follow one another within the reference period or, as is the case when someone holds an evening job as well as a daytime job, may run in parallel. This means: jobs + jobs on the side > employed persons. Employed persons who have more than one job are usually classified to their principal activity. Finally, a situation can occur where two or more persons fill a post ("duo" jobs). Since this situation is rare, in statistical terms these jobs should be split up and treated as two part-time jobs.

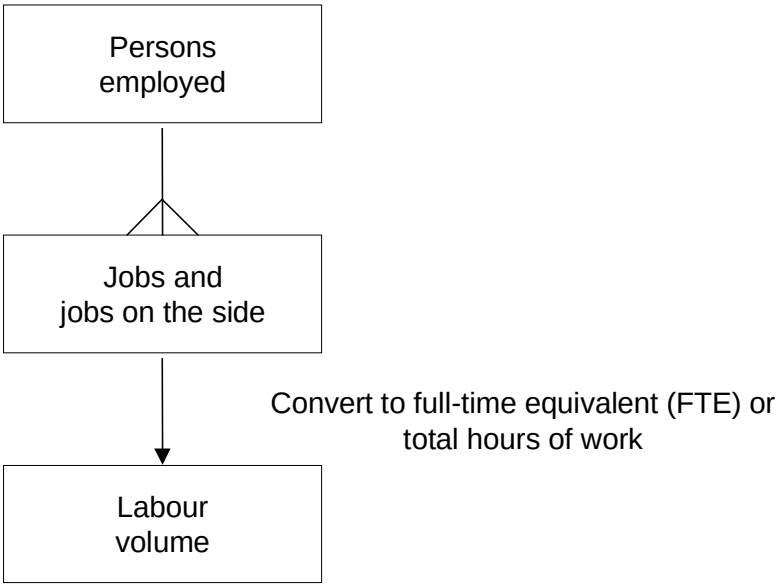
Jobs plus jobs on the side result in the total number of jobs. Jobs, however, differ in size, they can be full- or part-time. Therefore, to obtain an indication of the amount of labour performed during a specific period, a year for instance, the number of hours worked is needed. If all jobs are converted to full-time equivalent (FTE) or to annual total hours worked, the labour volume of an industry can be

39. Besides unemployment, underemployment can also be distinguished. Underemployment means that a persons has a job but would prefer to work more hours than the actual number of hours worked. Other situations can be a desire to work fewer hours or to change jobs.

40. In some countries, registration is limited to the second job. Also the way in which second, third, etc., jobs are classified can differ across countries.

derived. So, where employment is realised, a description can be given of the people employed, the number of jobs and the amount (hours of work) and type of labour performed (Figure 4).

Figure 4. **Different objects of employment**




Employment is not a clearly defined concept and major differences exist across countries. These include:

- The *treatment of groups* such as the armed forces, members of religious orders, seasonal workers, persons engaged in part-time economic activities (*e.g.* jobs of four hours or less) or contributing family workers, particularly women, who assist in family enterprises. In certain countries, all or some of these groups are included among the economically active, while in other countries, they are classified as inactive. Groups such as contributing family workers, students and casual workers are often seen as marginal for the total employment situation of a country, but can be important employment groups for tourism-related industries.

- It is often not clear which groups belong to employees, self-employed (*e.g.* contributing family workers and out-workers) or inactive population (*e.g.* students and apprentices).

- In most countries, the statistics of the economically active population relate only to persons above and/or below a specific *age limit*, while in some there is no such age provision in the definition.

- The *minimum duration of work*. Most countries use a minimum of one hour of work per week to classify people among the employed, although others use a minimum of four or more hours of work.

- The *reference period* can also be an important factor. In some countries, data on the economically active refer to the actual position of each individual on the day or week of the

census, while in others, the data recorded refer to the usual position of each person, generally without reference to any given period of time.

- The *periodicity of surveying.* This can, for instance, be monthly, quarterly or yearly. In the case of tourism, the periodicity of the survey can limit the possibilities for indicating seasonal employment.

- The way in which *border and immigrant workers* (those who work only for part of the year in the resident country but have their residence in another country) are treated. Often information on these groups is lacking, especially in the relation to inbound labour. Administrative or social insurance registries can sometimes be used.

- The growing number of people who work through *employment agencies*, especially if this is on a short-term basis. These people are often registered in the business service industry and not in the industry in which they actually work. This leads not only to an underestimation of the number of people working in tourism-related industries, but also to problems with the calculation of labour costs (now an intermediate consumption of that industry) and differences between employment data derived from household surveys (the employee thinks he/she works in a tourism-related industry) or business-related surveys. It can also account, in some respect, for groups such as own-account workers and out-workers.

- In addition to the above-mentioned differences in definitions (periodicity, etc.), countries also differ in their *methods of surveying* and in the *data sources* used.

- Even within a country, there can be (great) differences among the surveys used to collect employment data. This means that either discrepancies between the different sources have to be clarified, or one source has to be chosen as the "best" source of information, or the data from the different sources have to be integrated and reconciled.

Because of these differences, it will be impossible to bring all countries totally into line. However, some common denominators can be found. In this module, the ***starting point*** for employment data in characteristic tourism industries is the following:

- (Jobs of) employed persons of 15 years and over. However, a category of "< 15 years" can be added to obtain an indication of child labour, if required.

- People who have worked for one hour or more during the accounting period (*e.g.* week).

- People on-call, students, apprentices and trainees, contributing family workers and members of producers' co-operatives should be included where possible.

- People who work through temporary agencies should, where possible, be classified separately and allocated to the appropriate industry if they work in one of the tourism-related industries. At the very least, their inclusion or exclusion should be clarified.

- (Following the SNA) the residence of the enterprise or institutional unit is the criterion for including or excluding (the jobs of) people employed.[41] This means that (the jobs of) people employed living in another country but working with an institutional unit which belongs to the resident economic territory should be included.[42] Vice versa, (the jobs of) people

41. This differs from the way in which the total population is defined.

42. If an institutional unit from another country is engaged in transactions for less than a year, this unit does not belong to the economic territory, so the jobs of this unit should not be counted. For example, the jobs of foreign short-term consultants and repairmen are not counted.

employed living in the resident country but who are working with an institutional unit which does not belong to the resident economic territory should be excluded. This is important, for example, for the way in which crews of ships and aircraft and in- and outgoing border and seasonal workers should be treated, whether resident or non-resident. This, of course, not only holds for people employed but also for related topics, such as hours of work, FTEs and compensation of employees.

- In addition to the main job, the second, third, etc., jobs held on the side in tourism-related industries should be counted. An open question is whether to include those people who have a job on the side in one of the selected tourism industries, but whose main job is in a non-tourism industry.

Differences in definitions, methods, etc., mean that it is important to know what the different countries' employment data actually represent. Tourism-related employment data should therefore always be accompanied by notes outlining which characteristic tourism industries are included and how employment is defined.

**Selected key variables and their definitions**

In the first phase of development of this module, the number of objects of description and their characteristics have to be limited. This is not only necessary because of the diversity of the elements, but also because problems relating to definitions and availability of data can be expected. Therefore, on practical grounds, only an overview of a core set of objects and their characteristics is presented (the elements in *italics* in Text Table 2). Some objects, for example, wages and hours of work, can also be a characteristic of another object. In a later phase of development, elaboration with new objects and (or) new characteristics is always possible.

Developments and changes in employment occur within a context which is described in the framework presented in Figure 1. ***Context variables*** of tourism-related employment can include aspects such as tourism demand, economic indicators, supply-side aspects of labour markets (*e.g.* unemployment and demographic developments), labour migration, the public sector and especially the structure of characteristic tourism industries (*e.g.* technology, size, structure, ownership, trends towards concentration, births/deaths and value added/margins). These context variables are not the main point of interest here. However, part of this context is provided through the connection with the TSA. Two aspects are of importance here:

- An indication of the general level of tourism-related employment in the selected characteristic tourism industries of a country. It should be made clear that this covers only part of the total employment generated by the expenditure of visitors. It is the effect of all the different expenditures of visitors, also outside the selected industries, on the one hand (leading to an underestimation of total tourism-generated employment) and the inclusion of people whose job is a result of the expenditure of non-visitors instead of visitors in the selected industries on the other (leading to an overestimation of total tourism-generated employment).

- A definition of the selected key variables.

Text Table 2. **A selection of objects and their characteristics of paid labour**
Selected variables in italics

**1. Persons employed/jobs/hours of work/FTEs/earnings**

Characteristics of the person
*Gender*
*Age*
*Education (ISCED-76)*

Characteristics of the job
*Working scheme ((full-time/part-time)*
*Status in employment (ISCE)*
*Seniority*

Characteristics of the establishment
*Economic activity (ISIC)*
*Size of establishment*
Region of establishment

**2. Labour cost (ISCLC)**
Economic activity (ISIC)
Paid hours of work
Hours actually worked
Components

***Additional characteristics of objects:***

**3. Employed persons**
*Nationality/Place of birth*
Occupation (ISCO-68 or 88)
Kind of household
Place of residence
Motives

**4. Jobs/FTEs**
Wages in classes
Hours of work in classes

**5. Hours of work**

*Hours paid*
*Hours actually worked*
*Normal hours of work*
Size of establishment
Region of establishment
Occupation (ISCO-68 or 88)

**6. Wages/income/earnings**
*Hours paid*
Hours actually worked (*e.g.* overtime)
Wage and income components
Size of establishment
Region of establishment

***Other possible objects (not used here):***

**7. Job/vacancies**
Characteristic of the job
Characteristics of the establishment

**8. Occupation (ISCO-68 or 88)**
Characteristics of a person
Characteristics of a job
Characteristics of the establishment

**9. Collective agreements and labour conditions**

**10. Employment agencies (job mediation)**

**11. Employment legislation**

**12. Strikes**

**13. Transitions**
Mobility/Turnover
Motives
Characteristics of a person/household

**(14. Unpaid labour)**

### *The general level of tourism-related employment in characteristic tourism industries*

This can be expressed in:

- The number of ***jobs*** (including second, third, etc., jobs) and the number of ***persons employed*** in the selected industries. A distinction should be made between (jobs of) employees and (jobs of) the self-employed. Data should be presented as annual averages. This can be best calculated on the basis of twelve months or quarterly data (points in time). Data that refer to a single date in a year provide only a second-best option.
- The average annual number of jobs can be converted to ***full-time equivalent (FTE).*** Because jobs can differ in the number of hours worked (*e.g.* full-time/part-time), this is a better

indication for labour inputs in the production process as well as providing better possibilities for comparison between industries. In general, FTEs can be derived by dividing the total annual hours worked by industry or job group by the average annual number of hours worked in full-time jobs within that industry or job group. For the further calculation of FTEs, refer to Chapter 10.

- An indication of ***growth or decline*** of tourism-related employment in these industries over the years. Depending on the data available, this should be done for jobs, FTEs and people employed. It can be the difference between either two annual averages or two points in time. If possible (also SNA indication), changes of establishments from one ISIC group or class to another should be taken into account. Only then can comparability over time be achieved (see section on further methodological considerations below).

- For ***comparison,*** the number of jobs, FTEs and the number of people employed in the ***total labour force of a country***. Additional comparisons could be made with other groups of industries, for example: other non-tourism market activities, total market activities and non-market activities.

If data are available, a further distinction can be made for:

- ***Seasonal employment***. For example, instead of one (average) employment figure (jobs, FTEs or people employed) per year, data for *every month* of the year (point in time) can be presented. Often these figures are only available for (jobs of) employees. In practice, this does not pose a problem because this group is the most affected by seasonal labour. However, many countries will be unable to supply data on a monthly basis. A feasible, although second-best, option is to present data (average or point in time) on a quarterly basis.

- The number of employed persons that have ***a job on the side*** (only the second job is counted here) in all other industries ("moonlighting").

To obtain an indication of the general level of employment in *characteristic tourism industries*, the number of *jobs or FTEs* as well as the number of *people employed* are taken into account. The link with the TSA has to be made through the number of jobs, if possible, converted to *full-time equivalents.* However, the total number of *hours of work* (see below) in a year remains the best indication of labour inputs. Through "people employed", a better relationship can be made with socio-demographic characteristics such as age, gender, nationality, etc. The relationship between the two objects of description is:

Total number of jobs = total number of people employed + jobs on the side.

***Selected key variables of tourism-related employment***

The following variables are selected:

*a)* **Gender (of people employed).**

*b)* **Age (of people employed):** 15-24; 25-34; 35-44; 45-54; 55+. If needed, an extra category of "< 15" can be added to provide an indication of child labour.

*c)* **Education level (of people employed):** Highest completed level of general education at school. Since education systems differ across countries, there is no unambiguous definition. As a first step, countries should use their own classification system. However, in a second step,

where possible, a translation should be made to the international accepted Standard Classification of Education (ISCED-76). As a starting point, four levels of education are distinguished:

- No or little schooling: no schooling, education preceding the first level and first level (ISCED X, 0 and 1).
- Primary: first stage and second stage (ISCED 2 and 3).
- Secondary: third level first stage, leading to an award not equivalent to a first university degree (ISCED 5).
- Tertiary and university: third level first stage, leading to a first university degree or equivalent qualification and third level second stage (ISCED 6 and 7).

*d)* **Nationality (of people employed):** This variable distinguishes between nationals and non-nationals. Definitions can vary across countries. Some counties use place of residence, others use place of birth.

*e)* **Status in employment (of jobs):** The International Classification of Status in Employment (ICSE)[43] classifies jobs with respect to the type of explicit or implicit employment contract the person has with other persons or organisations. The main ICSE groups are employers, employees, own-account workers, members of producers' co-operatives and contributing family workers. These groups are not easily comparable across countries. Because of these differences, the only distinction here is made between (paid) employees and the self-employed (employers and other non-employees).[44] The self-employed should include: employers, own-account workers and (un)paid contributing family workers. They are the sole owners or joint owners of the unincorporated enterprises in which they work. The remuneration of self-employment is directly dependent on the (potential) profits derived from the goods and services produced. Since returns for hours worked cannot unambiguously be distinguished from other elements of such mixed income (*e.g.* returns to capital or entrepreneurship), this aspect is not separately identified in the national accounts (SNA93). An employee is characterised by a contract of employment (or employer-employee relationship), whether formal or informal, whereby he/she works for an enterprise in return for remuneration in cash or in kind.[45] Employees should, if possible, also include apprentices, on-call workers, students and people who work through temporary employment agencies (presented separately if possible). Out-workers[46] are self-employed if their income is a function of the value of the outputs from some process of production for which they are responsible, however much or little work was put in. If there is an explicit agreement that the

43. See Fifteenth International Conference of Labour Statisticians 1993, Resolution concerning the International Classification of Status in Employment. Although the classification was improved in 1993, there is still much international discussion. The resolution notes "… further thought should be given to the conceptual basis of the ICSE".

44. People are often classified only on the basis of their principal activity.

45. This could be, for example, wages, salaries, payment by commission from sales, by piece-rates, bonuses or in kind payments such as food, housing and training. Students and apprentices are counted as employees when there is some kind of formal or informal commitment whereby they contribute some of their labour as an input into an enterprise's process of production in return for remuneration and/or education services.

46. An out-worker is a person who agrees to work for a particular enterprise or to supply a certain quantity of goods or services to a particular enterprise by prior arrangement or contract with that enterprise, but whose place of work is not within that enterprise.

out-worker is remunerated on the basis of work done for an enterprise, then an out-worker should be classified as an employee.

*f)* **Working scheme (of jobs):** Distinguishes between full- and part-time jobs on the basis of the average or normal hours of work per week or reference period, excluding overtime, annual leave, holidays, sick leave and time spent in travelling from home to work and vice versa. Part-time work is defined here as working equal or less than half of the average or normal hours worked per week for that group.[47] In making comparisons, it should be noted that the data are influenced by the number of days worked per week and by regulations and customs regarding working on Saturdays and Sundays. Sometimes the distinction between part-time and full-time is left to the respondent. In practice, however, a set number of hours per "normal" week, for example 35 hours a week, is usually chosen. In that case, a full-time job is defined as working equal or more than 35 hours a week, and a part-time job as working less than 35 hours a week.[48]

*g)* **Average seniority (of jobs):** Average seniority in months, based on the period when the person started working in his current job. This information is valuable to identify areas where turnover of labour is rapid or otherwise. In most cases, only data on the main job is available.

*h)* **Average hours of work (of jobs):** In the case of hours of work, a distinction can be made between:

- *Normal or usual hours of work, i.e.* the hours of work fixed by or in pursuance of laws or regulations, collective agreements, contracts or arbitral awards. Where there is no agreement or contract, then the average of the last four weeks or other period could be taken as the normal hours of work for a typical week. This is especially important for the self-employed.
- *Hours actually worked, i.e.* the aggregate number of hours actually worked during the accounting period, including hours worked during normal periods of work, overtime, training on the job, time corresponding to short periods of rest and idle time spent at the place of work waiting or standing by,[49] but excluding time for main meal breaks, commuting between home and place of work and hours paid for but not worked, such as annual leave, paid sick leave, paid public holidays and strikes. Therefore, hours overtime = hours actually worked – normal hours of work.[50]

47. A group can be an establishment, ISIC group or occupational group, possibly distinguishing between male and female.

48. Differences should be made, for example, between job groups, employee and self-employment or possibly male and female.

49. For example, due to temporary lack of work, machinery breakdowns or accidents. But also, work on preparing the site, repair and maintenance work and the making of invoices, reports, etc.

50. The concept of hours actually worked should be used for the linkage with the TSA. This should also include the hours actually worked on the second, or third, etc., job or business. To be exact, the hours of work of people outside the economic territory, but working for an institutional unit which has its centre of economic interest in the economic territory, should be included. Vice versa, hours of work for institutional units which have no centre of economic interest within the economic territory should be excluded. On this basis, the average hours actually worked can also be derived, *i.e.* the aggregate hours actually worked by an industry or group, divided by the number of persons or jobs in that industry or group. This can be, for example, a weekly or a yearly (preferred) average. Sometimes only hours paid for (usually the basis for establishment surveys) is available as a second-best option. In that case, hours actually worked, at least for employees, can also be estimated by subtracting (estimates of)

– *Hours paid for*, *i.e.* the hours actually worked plus the hours paid for but not worked (*e.g.* paid annual leave, paid public holidays and paid sick leave).

*i)* **Average gross earnings (of employees):** An average, based on the total payments made to each employee in the accounting period, prior to taxation and other deductions (*e.g.* taxes, social contributions, union dues, etc.), but including overtime.[51] This variable includes: remuneration for time not worked (*e.g.* holidays), shift incentives, etc., cost-of-living allowances, the value of benefits in kind (if perceptible) and other regularly or irregularly paid bonuses and allowances. It excludes: reimbursement of travel, unfunded employee social benefits and payments for absent severance and termination pay. It can be an hourly, monthly or annual (preferred) average. This figure coincides more with *paid hours of work* than with hours actually worked. It should be made clear that this figure is not very reliable, but it can be used to provide an indication. In addition to differences between categories of employees, in some tourism-related industries, especially on the service side, extras can be given with overtime or through tips, free meals and accommodation. Some parts of these extra compensations, especially benefits in kind,[52] tips and irregular bonuses, are not always shown in the official statistics. This figure must be seen as a first step[53] towards a more comprehensive picture of earnings and labour cost in tourism-related industries. Ideally, more information should be collected.[54]

*j)* **Permanency of job (of employees):** Number of jobs of employees with a temporary job or a work contract of limited duration instead of a permanent job or a work contract of unlimited duration. This can be part-time or full-time. In many cases, only data on the main job will be available.

*k)* **Irregular working hours (of jobs of employees):** Number of jobs of employees who have either evening work, night work or who work on Saturdays or Sundays. This can be seen as an indication of unfavourable labour conditions. Probably, only data on the main job are available.

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hours paid for but not worked and adding (estimates of) hours worked but not paid for. Normal hours or usual hours of work can be used to determine the distinction between full-time and part-time. This can also be on a weekly or yearly (preferred) basis.

51. See ILO definitions.

52. It is often difficult to collect data or place a value on benefits in kind. For example, there can be a difference in the value as costs for the employer or the value for the employee. Therefore, many countries exclude this item from the definition of gross hourly or monthly wages. In the SNA, benefits in kind are valued at purchasers' prices or, when produced by the employer, at producers' prices.

53. There is a huge variety of wage concepts.

54. For example, *earnings* can include wages for normal time worked, including shift incentives, etc., payments for time not worked (*e.g.* holiday and sick leave), (premium) payments for overtime, social contributions for social security, pension schemes, etc., regular/irregular bonuses and gratuities and benefits in kind (*e.g.* food, housing and clothing). Normal or basic wages (including shift incentives and regular bonuses), overtime wages and other benefits should be separately identified. Further, net wages (after taxation and other deductions) can also be distinguished. In addition, there is a difference between employees and the self-employed (mixed income). *Labour cost* is the cost incurred by the employer in the employment of labour. Components of labour cost are, for example, direct wages and salaries, remuneration for time not worked, bonuses and gratuities, payments for food, drink, fuel, housing and vocational training, payments for payroll tax, payments for social security and welfare services, costs for recruitment, additional payments in respect to sickness and termination pay.

A set of tables is presented for the selected variables (see Chapter 11). All tables should distinguish between the selected industries and the total economy of a given country.

The production of these tables by individual countries can be limited by quality requirements, such as constraints due to sample size of surveys and confidentiality rules. This is one of the main reasons for using mainly one-dimensional tables and a three-digit level of the ISIC classification, at least for the time being. In addition to a set of employment tables, one table (Table 12) makes the connection with the TSA.

The linkage with the TSA is based on the number of jobs of employees and the self-employed converted into FTEs and, if possible, into hours of work. Compensation or gross annual earnings of employees is also an important linking variable.

**Further methodological considerations**

As stated above, the comparability of data on employment is hampered by differences in definitions, methods, etc., across countries. The available options are highly dependent on the specific situation in a given country. Therefore, it is important that the methodology and definitions used to compile data on tourism-related employment be fully described and comply as far as possible to the definitions proposed in this module. Any discrepancies should be clarified.

In addition, the following methodological considerations should be taken into account:

- Only existing *official employment data* should be used, even though this can limit the degree of coverage and detail, like the further distinction to a four-digit level of tourism-related industries, more detail in specific tourism characteristic variables or the use of multi-dimensional tables or cross-tabulations. The sample size, confidentiality rules and costs of surveying can *limit the degree of detail and coverage.*[55] In this module, at least, data should be presented at the three-digit level. Countries can progress to using to the four-digit level if that provides a better link with the TSA. In that case, however, for reasons of comparison, it is desirable to retain the connection with the three-digit level.

- Data can be expressed in different *time dimensions, i.e.* a certain point in time, an average of a period calculated on the basis of observations at different points in time (*e.g.* monthly or yearly average), and the sum of units counted over a certain period of time (volume data). Finally, data can also be expressed in changes or transitions.[56] Employment data, such as gender, age, education, nationality, situation in employment, permanency of job and irregular work, usually refer to a certain *point in time*. Sometimes data of different points in time, for example four quarters of the year, can be added together, allowing the calculation of a *quarterly or annual average*. In the same way, for reasons of reliability, data covering two or three years can be combined to provide more robust and reliable data set. In relation to the connection with the TSA, the main focus is on annual labour inputs. This is the end result over one year concerning the stream of demand and supply of labour related to the payments made as the sum of all wages and salaries. For jobs and FTEs, *annual averages,* and for hours of work and compensation of employees *annual totals,* are used.

55. This is also true for the occupational approach.

56. For example, longitudinal research.

- Another issue relating to employment data, especially if data from *establishment surveys* is used, is the way in which *year to year changes* (growth and decline of employment) are handled. Changes in the level of employment can occur because real changes are occurring, *i.e.* there are more or less jobs in tourism-related industries. However, changes can also occur because establishments change from one ISIC group to another. This can be caused by the fact that the main economic activity of the unit has changed (*e.g.* as sometimes arises with multinationals), or by the fact that an error in coding was made. It is questionable whether these last two effects have to be taken into account in examining the growth or decline in tourism-related employment. In fact, there should be two sets of employment data, *i.e.* data on successive points in time (*accurate levels*) and data on changes in employment *(accurate changes over time*). In the SNA, priority is given to changes over time by classifying an establishment in the same ISIC group for a longer period of time, starting with a base year. Although it is advisable to continue to apply the SNA method, in the long run using that approach does not necessarily coincide with the real world situation. It also has to be made clear that data on employment levels, presented on successive points in time, do not say anything about the creation of new jobs or the destruction of existing jobs. It is often postulated that SMEs in tourism industries create many new jobs. However, it is also probable that many existing jobs are destroyed within this group.

- A useful distinction can be made between employment in *small and medium-sized enterprises*, on the one hand, and employment in large enterprises, on the other. The availability of reliable data can pose problems. Table 14 of this employment module breaks down employment per group into size-class of establishments. In addition, the *percentages of births and deaths* of enterprises over one year, related to the total number of enterprises in that industry, are also taken into account. This information can be collected from business registers.

- Because of possible reliability problems and the availability of data, *regional employment data* is not asked for. For the same reasons, aspects such as *informal labour* are currently excluded from the module.

- In this module, for reliability reasons, the majority of the tables are one-dimensional. The size of the survey samples is often not sufficient to present detailed cross-tabulations in *multi-dimensional tables*. In general, it is true that the more data is disaggregated, the greater the likelihood that reliability problems will arise. This means that *minimum levels of quality*[57] have to be set. For the group of *employees*, more detailed data is usually available, and this will enable multi-dimensional tables to be set up for this group in the future. For example, the distinction between full-time and part-time for different age groups, gender or size of establishment or the distinction of wage classes for male and female. For the time being, this issue is left aside.

One of the main problems in the field of employment data is that there is often more than one source of information. Because basic surveys have their own specific objectives, they often differ in regard to the definitions, concepts and methods used and the time of surveying. This can lead to a fragmented overall picture or, for instance, to different levels of employment.

The simplest solution to this problem is to use only one source, *i.e.* the most reliable or broadly based source of information (preferably a household or labour force survey). In that case, however, often not all the required data can be obtained. A second option is to use different sources of information, providing clarification for any discrepancies between the sources. The best – but most

57. Often some minimum number of observations in a cell is used.

difficult – option is to integrate the available sources of information. This can mean that different data sources need to be combined or that one basic source is benchmarked against other sources. This could entail, for example, setting employment data of jobs of employees derived from a labour force survey against the data of jobs of employees obtained from an establishment survey. Or, the integration of employment levels calculated through the employment module and the estimates of the TSA made directly through the national accounts. Or, using distribution ratios derived from one source to disaggregate data from another source. Usually, this means that data from different sources have to be reconciled.

The process of adjustment can be directed towards:

- Identical employment data, such as number of people employed or number of jobs.
- Different types of inter-related employment data. For example:
  - Number of people employed + number of side jobs = number of jobs.
  - Number of jobs x average yearly wages = total annual earnings.
  - Number of normal hours of work + overtime = actually hours of work.

This process of statistical integration or reconciliation[58] entails four steps:

- *Harmonisation:* adjustments for differences in definitions, classifications, time of surveying and level of detail. This means that a set of core definitions has to be defined in advance.
- *Full or identical coverage:* adjustments for differences in coverage where different sources do not describe the total or same population, for example, employees only.
- *Minimisation of measurement errors:* corrections for measurement errors. Data from different sources are confronted with one another and measurement errors eliminated to the extent possible.
- *Balancing:* even once the three steps described above have been implemented, (small) differences will continue to exist between sources of information. Total reconciliation can be achieved through a mathematical balancing algorithm[59] (at least where the differences are not too big).

58. Leunis and Altena (1996) give a good example of this integration process, using the Dutch Labour Accounts as an example.

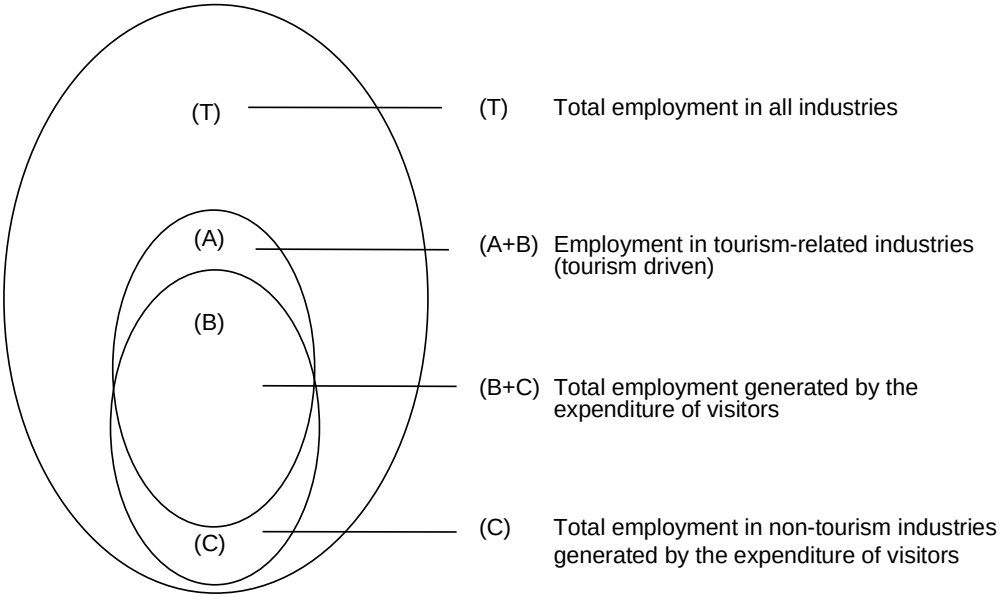
59. See, for example, the algorithm of Powell in Leunis and Altena (1996).

*Chapter 10*

# LINKING TOURISM SUPPLY AND DEMAND

By their nature, expenditures on tourism, and hence tourism employment, encompass the outputs of almost every industry in the economy (***B+C*** in Figure 5). The major problem with a supply-side approach is the question of which characteristic tourism industries should be included. Only a few industries depend heavily on tourism (tourism driven: ***A+B*** in Figure 5), while many other industries in the economy depend, but only partly, on expenditures by visitors (*e.g.* retail, banks and communication: ***C*** in Figure 5). The degree of dependency can differ significantly by industry, by region and over time. On the other hand, the industries defined as comprising the "tourism industry" (***A+B*** in Figure 5), can cater to the needs of both non-visitors (***A*** in Figure 5) and visitors (***B*** in Figure 5). Therefore, often only a share of their employment can be associated with tourism.

Figure 5. **The boundaries of tourism-related employment and total employment generated by the expenditure of visitors**



Thus, employment in the tourism-related industries (***A+B*** in Figure 5) as defined in this module, does not match the total employment generated by the expenditures of visitors (***B+C*** in Figure 5).

To solve this problem, at least partly, a relationship has to be made between the supply and demand sides of tourism. In general terms, using expenditures of visitors (demand side) in the selected tourism industries and, for example, total output (supply side) of these industries**,** tourism ratios per industry can be calculated. These tourism ratios can then be used to allocate employment in the selected industries to tourism, excluding employment generated by expenditures of non-visitors (***A*** in Figure 5). These tourism ratios are derived in the TSA.

However, separating ***A*** from ***B***, *i.e.* excluding non-tourism employment from tourism employment, solves only one part of the problem. The size of tourism employment outside the selected industries (***C*** in Figure 5**)** remains unclear. Again, the TSA is a good source of information, since it provides insight into which industries are more important (***B*** in Figure 5) and which industries are less important (***C*** of Figure 5) for tourism, by relating tourism consumption on the demand side to tourism goods and services on the supply side.

Thus, a connection between the employment module and the TSA is valid for at least two reasons: *i)* demand and supply of tourism can be linked, providing results such as tourism ratios, but also first estimates of the levels of direct and indirect employment generated by tourism; and *ii)* insight can be gained into which industries are important for tourism. Therefore, as far as possible, the employment module follows the selected industries in the TSA.

There are other good reasons for linking the employment module to the TSA. The TSA, based on national accounting principles, uses employment data such as labour volumes, expressed in full-time equivalents (FTEs) and in hours of work, and compensation of employees. See, for example, the production account and the make and use matrix in the TSA (Chapter 6). It is important that the totals of the TSA and the employment module match as far as possible (*one-figure strategy*). This is especially the case where employment data for the TSA are supplied through the SNA and are not directly provided by the employment module. Different data describing the same phenomenon will only further confuse users. These totals for, for instance, the number of jobs or FTEs in tourism industries can then be used to link and benchmark other employment data, such as hours of work and compensation of employees, but also (the characteristics of) people employed and occupational groups.

Both the employment module and the TSA benefit from the connection. The scope of the TSA is extended by including a set of detailed employment tables which do not fit within the TSA. This gives policy makers a better overall picture of the tourism industry, as well as providing time-series and additional tools for analysis and forecasting. Tourism employment should be seen not only as a production factor, but also as a social phenomenon (*e.g.* people employed, profiles, labour conditions and motives).

The connection also provides the possibility for confronting and matching employment data from various sources, thus improving the quality and comparability of the information (*statistical integration*). It also applies to other topics derived from and used in the SNA, such as productivity, labour coefficients, full-time/part-time ratios and labour cost. On the other hand, the TSA provides the employment module with an economic context that offers opportunities for insights into the relationships between, for example, labour markets and other economic processes. Such a system produces data on elements such as productivity and indirect employment effects, but also permits further differentiation of, for example, labour income by gender, working scheme or other variables.

Most importantly, the TSA provides the employment module with a central frame of concepts, definitions and classifications. This not only reinforces the consistency of the total framework, it also provides possibilities for connections with other extensions of the TSA, such as the characteristics of visitors,[60] specific characteristics of tourism-related industries[61] or the distribution and use of income (*e.g. statistical co-ordination*).

Thus, the main idea behind the linkage between the TSA and the employment module is to create a statistical framework within which different sources of micro-data on employment can be integrated, through the module, into the more aggregated meso and macro data of the TSA. In a normal TSA, labour is treated as a single homogeneous factor of production with no detail on the composition of employment. An integrated framework can provide a tool allowing consistent time-series on a meso and macro level to be compiled, as well as consistent and integrated time-series on detailed labour data, where labour market analysis (*e.g.* people employed, households) is integrated into the TSA (*e.g.* industries and institutional units). The ultimate objective is to create a Tourism Social Accounting Matrix (TSAM),[62] in which monetary data is linked with non-monetary data, such as data on employment.

In addition to jobs and hours of work, the core set of data in the TSA consists of data on the compensation of employees and the mixed income of the self-employed as part of the value added and distribution of income. In an integrated framework, this set of data is amplified by breaking down the compensation for labour into the various types of employment. This can lead to cross-tabulations of, for example, wages and salaries by gender, education, occupation and type of household. An example is given below. The next step is to integrate other employment data from basic surveys in such a way that the main variables match the employment data in the TSA and the module (as a benchmark). These main variables are jobs or FTEs, hours of work and compensation for labour. To make this possible, it is essential to adjust the basic employment data derived from, for example, household, labour force or establishment surveys so that they match the concepts and definitions of the macro-data of the employment module and the TSA (*micro-macro linkage*). Some elements of this process are described in the following section.

**The process**

The process of integration, or micro-macro linkage, entails bringing basic employment data into line with the concepts, definitions and classifications described in this module. In this way, a link can be made with the TSA. A good starting point could be "the number of jobs".[63] The employment module can then be elaborated with other elements of employment, using the number of jobs as a benchmark for the totals of these other elements (Figure 6). In addition, inter-relationships between these elements can be determined, allowing linkages to be made between variables such as FTEs, compensation of employees, occupation and (the characteristics of) people employed. Examples of such inter-relationships include:

- Number of jobs – number of jobs on the side = number of people employed.
- Gross average hourly wage * total hours paid for = gross yearly earnings.

60. For example, tourism ratios could be calculated for different types of visitors.

61. See, for example, the connection through a central business register.

62. Or a System of Economic and Social Accounting Matrix (SESAME). See SNA93.

63. Related to FTEs and compensation for labour, which also enter the TSA.

- Number of jobs of employees * average yearly gross earnings of employees = total compensation of employees.

The integration process is not a straightforward exercise and can differ according to the variables. It is not possible to describe all the aspects of this process in detail. Much depends on the availability of employment data in a given country. This section discusses three of the main issues which need to be tackled.

The first question relates to the selection of the *industries* which make up the tourism industry from a supply-side perspective. This topic has already been discussed in detail. To link the employment module with the TSA, it is obvious that the selection of industries in the employment module must be in line with the industries chosen in the TSA. In the TSA, there is a step from tourism consumption to tourism products and services to (producing) tourism-related industries. The group of producing industries should be the basis for the industries selected in the employment module. An additional aspect is the *level of detail*. The level of detail, for example a three- or four-digit selection of the ISIC classification, should be identical in both the TSA and the module. Otherwise, results such as tourism ratios cannot be produced. However, users should be aware of the limitations of the available employment data (quality levels), which is the main reason for choosing a three-digit level in this module, at least for the time being.

A second question concerns which *variables* to use to make the first connection with the TSA. In general, the national accounts, and hence the TSA, describe an economic process. In that process, labour volumes and labour cost play an important role in the production of tourism goods and services. On the other hand, tourism production leads to value added, part of which goes to the income of employees and the self-employed. The national accounts use jobs or better FTEs and hours of work as indications for labour inputs. For the value added of production and the distribution of income, the compensation of employees and the mixed income of the self-employed are important items. For the number of jobs and FTEs, this is done in annual averages. Annual totals are used for compensation of employees and hours of work. The mixed income of the self-employed plus the operating surplus is treated as a balancing item.

Thus, the self-employed are treated differently from employees in the national accounts' process. The position of employees is characterised by wages and salaries as costs in the production process and earnings in the distribution of income, while the position of the self-employed is defined by a mixed income. It is difficult to unambiguously determine the share of this mixed income that can be attributed to income through capital and entrepreneurship, and the share that can be attributed to income related to hours of work. This latter aspect is hidden in the balancing item of the value added of mixed income and operating surplus.[64] This is not separately identified in the national accounts. So jobs, FTEs and hours of work should be derived for employees and the self-employed, while compensation or total gross earnings related to labour is only derived for employees.

A third question concerns how the link between the available basic sources of employment data, such as a labour force or establishment survey for example, and the employment module/TSA should be made. Taking as an example "the number of jobs", this involves following the steps outlined in the previous chapter to ensure harmonisation, full or identical coverage and minimisation of errors. The same process can be used for hours of work, compensation of employees or other variables.

64. The SNA suggests that the wages and salaries of the self-employed could be imputed on the basis of the average hourly wage of employees and the number of hours of work of the self-employed. Whether or not this is an attractive option is open to question, however. It would be wise to investigate other possibilities such as tax registrations.

Figure 6. **The connection between the employment module and the TSA**

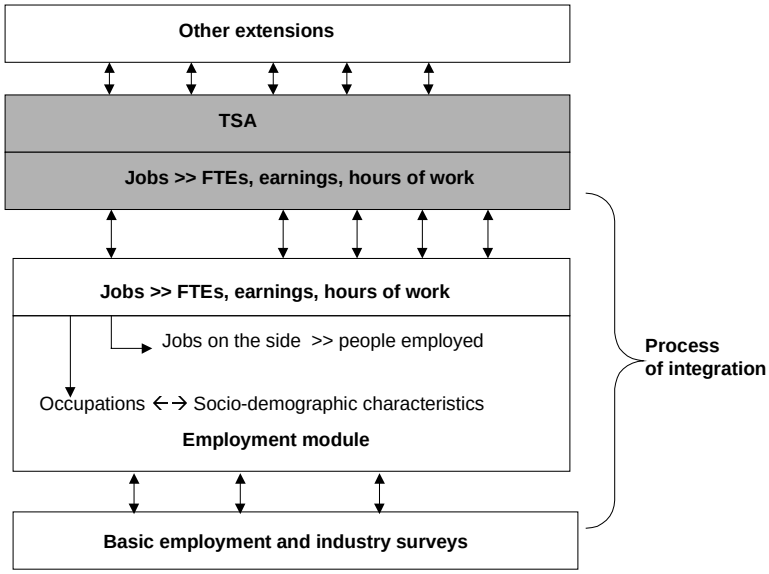
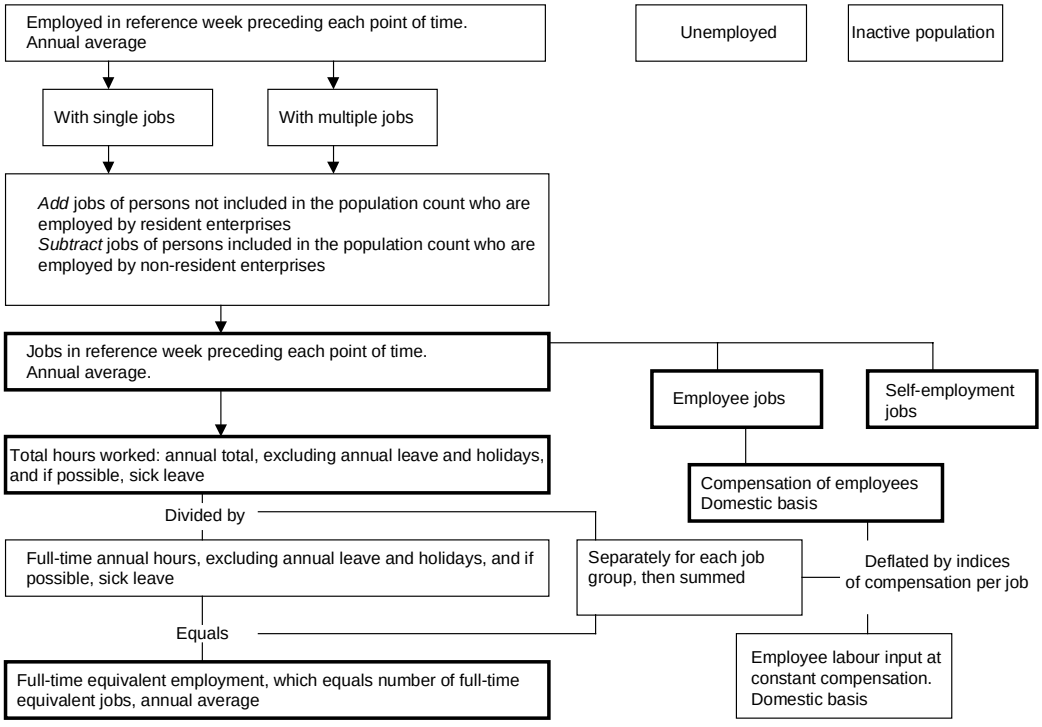



Figure 7. **Labour concepts of the System of National Accounts**[1]




*Note:* Boxes surrounded by thick lines related to the concepts of the SNA.
1. See SNA93, 1993, p. 408.

Since, in our example, the interest lies in the whole range of jobs, employees and self-employment, a household or labour force survey (LFS) has to be used as the basic source of information. If the interest lies, for example, in jobs or earnings of employees only, then an establishment survey or another reliable basic source could have been chosen instead of the labour force survey.

Other variants can be applied. It is possible, for example, to use two basic sources of information simultaneously, *e.g.* data on jobs of employees from a labour force survey and an establishment survey. In that case, the process of harmonisation, full or identical coverage and minimisation of errors has to be carried out for both surveys. At the end of this process, both sources have to be reconciled through a mathematical balancing method if the differences between the two sources are not too large. An alternative is to use one source as the central or basic source of information and benchmark this source against other available sources (for example, using the labour force survey as the basic source of information and benchmarking data against other sources such as an establishment survey or other "smaller" surveys to adjust for annual averages or seasonal effects). This latter alternative appears to be the most practical option. In general, for every variable, a different basic source could be chosen, depending on the sources of information available. In this sense, it is wise to start with an inventory of the available sources of information on tourism-related employment.

In our example, the main point of departure is the definitions and classifications for "the number of jobs" and related topics, such as working scheme (full-time/part-time) and status in employment (employees and self-employed), described in Chapter 9 on concepts and definitions. This is the goal to aim for. The employment data obtained from the basic sources of information, in this case the definitions and classifications specific to the LFS, need to be translated into, and brought into line with, the definitions and classifications of the employment module.

First, however, the LFS data relating to the selected tourism industries have to be selected on the basis of the ISIC classification.

The ***first step*** of the process, *i.e. harmonisation*, aims to remove differences in definitions, classifications and level of detail. In our example, this is done by bringing the LFS data into line with the definitions and classifications of the employment module. Possible questions and adjustments can include:

- The *main questions* are whether all the groups (people employed/jobs) covered by the data set fit the definitions and classifications of the employment module. Should some groups be excluded or should other groups be added? Are people employed/jobs assigned to the correct classification?

- In our example, the number of *jobs* has to be determined. However, the LFS is based on *people employed*. Therefore, adjustment has to be made by adding the second (and, if possible, third, etc.) jobs of employees and the self-employed to their main job (also in the LFS). In principal, only jobs on the side in the selected tourism industries should be added. The feasibility of this depends on whether the second, third, etc., job is assigned to a (proper) industry group or not. If one is interesting in obtaining a full indication of "moonlighting", irrespective of the industry in which it is taking place, then all jobs on the side are of interest.

- Jobs on the side in tourism-related industries of people whose main job is in an non-tourism industry should be included.

- If the LFS is based on people employed and jobs with a minimum of, for example, four hours of work per week or more, all jobs of one to fours hours of work should be added, if data are available (these should be obtained from another source of information or estimated).

- An *annual average* of the number of jobs has to be determined. This can be derived, if data are available, for the number of jobs for each month or quarter of the year (as a point in time). In this case, a simple annual average can be calculated by averaging the end-of-quarter or end-of-month figures. However, sometimes data are only available for a *single point in time*, based for example on a reference week. In this case, the first option is to use additional information to adjust the LFS data to an annual average,[65] for example by using establishment surveys for the (quarterly or monthly) number of jobs of employees. An alternative solution is to use estimates based on related data such as quarterly or monthly (changes in) output of characteristic tourism industries. If no additional data sources are available, then the point-of-time data is used to represent the average number of jobs per year. Of course, these can only provide an indication, especially when the moment of surveying falls outside the peak season for tourism. Therefore, the step from data on a single point or points in time does not simply involve averaging. Since tourism has a strong seasonal character, care needs to be taken in adjusting the data. Much depends on when and how frequently the available employment data are collected. Monthly data are preferable to quarterly data as they present a better picture of tourism.[66]

- If the connection with the TSA is made at the *four-digit level*, data from a three-digit level will sometimes have to be distributed over the four-digit classes.[67] This is only possible if distribution criterion from another source is available. This raises the question of the reliability of such adjustments. Data often has to be grouped[68] for reliability reasons; the question is how to merge the groups without too much information being lost.

- Is everybody who claims to be an employee or self-employed really an employee or self-employed? Do they fit the definitions and classifications of the employment module? Are these definitions applied in practice? Are, for example, contributing family workers, own-account workers and out-workers (partly) assigned to the class of the self-employed?

The ***second step*** is to achieve *full or identical coverage* by adjusting for differences in populations between the basic sources and the employment module. This is done by adding other categories of employees or the self-employed using data from other primary sources where necessary. Possible questions or adjustments include:

- The *main question* is are any groups left out which fit the definition of the employment module,[69] but which are not included in the basic source of information used?

- In our example, most categories will be included because the LFS gives a broad picture of employment. Much depends on the population definition and the way this definition is applied in practice.

- People above or below a certain age are sometimes excluded from the data set. The jobs of employed people aged 15 years and over should be included. If necessary, a category “child labour” can be added.

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65. Interpolation or extrapolation can also be used here.

66. Quarterly data can be adjusted for seasonal effects, for example, by using other data on a monthly basis.

67. Of course, this also accounts for the step from a two-digit to a three-digit classification.

68. This can be the effect of, for example, the sample size or confidentiality rules.

69. See Chapter 9.

- How are the jobs of workers for employment agencies treated? If they should be included, can they be assigned to the appropriate industry? The same holds true for groups like own-account workers, out-workers and casual workers. Are they included and if not, which sources of information are available on the jobs of these categories?

- Are the jobs of students, apprentices, trainees, etc., included if they have at least some kind of formal commitment? Are any data available on these groups?

- Have the jobs of inbound frontier and seasonal workers been added and, vice versa, have the jobs of outgoing frontier and seasonal workers been removed, from the data set?

- Should, for example, employment in swimming pools, museums, etc,. managed by governments or camping grounds run by farmers be included? Or, more generally, should employment generated by market activities of governmental agencies be included?[70] In any case, especially in the industries of "transport" and "recreation, cultural and sporting facilities", governmental activities should be included.

- Finally, in the case of *establishment surveys*, a threshold or cut-off method is often used. Are additional data sources available to estimate the number of jobs in the categories which have been left out?

The ***third step***, *minimisation of measurement errors*, involves an organised search for measurement errors (both systematic and non-systematic); a top-down analysis is usually the most effective. Some possibilities include benchmarking (totals) with other available sources; using interrelationships between variables, such as total number of jobs = total number of people employed + total number of jobs on the side; and comparing with data from previous periods. If problems with consistency are encountered, then one or more variables probably suffer from measurement errors (comprising sampling and/or non-sampling errors). The following summarises possible questions and adjustments:

- The *main question* is whether the data are internally and externally consistent when compared with other possible sources and identities?

- In our example with the LFS, comparisons of jobs of employees are usually only made with sources such as establishment surveys. For (the jobs of) the self-employed, the LFS is usually the unique source of information.

- Does the data set contain employed people who report being employees or self-employed but who work without pay or profit? This category should be excluded.

- Should black or illegal labour be included or excluded? Is it possible to detect this group in the LFS?

- Do the selected data relate to the selected tourism industries? Is the coding of the ISIC groups and classes correct?

- Are there errors in the observation of second jobs? Sometimes people report a main job, but also a job on the side with excessive hours of work. This could, for example, be simply a typing error.

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70. Market output is defined in the SNA as output that is sold at economically significant prices. Governmental activities, even if they are subsidised, can be included if their prices are considered to be economically significant from the point of view of cost and demand.

- Should adjustments be made for sampling errors or biases? For example, the underestimation of "smaller and irregular" jobs and the overestimation of "bigger and normal" jobs.
- Should adjustments be made for errors in observation, incorrect reporting or errors in editing?
- Are adjustments necessary for *comparability over time*, determining actual changes rather than actual levels (*e.g.* changes of establishments from one ISIC group or class to another)?

Text Table 3. **Adjustment to the definitions and classifications of the employment module/TSA**

| | **Characteristic tourism industries** | | | | |
|---|---|---|---|---|---|
| | Hotels, etc. | Transport | Travel agencies | Recreation | Etc., etc. |
| Number of jobs (full-time/part-time; employees/self-employed) based on the ***definitions and classifications used in the basic surveys*** (*e.g.* labour force or establishment surveys) | **……..** | **……..** | **……..** | **……..** | **……..** |
| Adjustments: | | | | | |
| • ***Harmonisation:*** adjusting for concepts, definitions and classifications. For example:<br>  • Step from people employed to jobs<br>  • Step to annual averages and totals<br>  • Step to the right level of detail | **+/-** | **+/-** | **+/-** | **+/-** | **+/-** |
| • ***Full or identical coverage:*** adjusting for differences in populations. For example:<br>  • Adding jobs of age groups not yet included<br>  • Treatment of students, apprentices, etc.<br>  • Adding jobs of people working through employment agencies | **+/-** | **+/-** | **+/-** | **+/-** | **+/-** |
| • ***Minimisation of measurement errors*** For example:<br>  • Erroneous coding of second, third, etc. jobs<br>  • Errors in observation and sample errors<br>  • Comparability over time | **+/-** | **+/-** | **+/-** | **+/-** | **+/-** |
| • *Balancing* (in the case of small discrepancies between two sources) | **+/-** | **+/-** | **+/-** | **+/-** | **+/-** |
| Number of jobs (full-time/part-time; employees/self-employed in the tourism-related industries) (in line with the ***definitions and classifications used in the employment module/TSA)*** | **……..** | **……..** | **……..** | **……..** | **……..** |

*Note:* The same adjustment process can be carried out for other connecting variables, such as hours of work, wages and salaries of employees or, in fact, any other variable.

If only one basic source of information is used, the adjusted data on the number of jobs of employees and the self-employed should now be consistent with the definitions and classifications used in the employment module. If more than one source has been used, for example using the LFS and an establishment survey to determine the number of jobs of employees, then a ***fourth step*** is necessary, *i.e. balancing.* In this step, the remaining discrepancies between different sources are eliminated using a mathematical balancing method, for example Powell's minimisation procedure.[71] Balancing should only be used if the discrepancies are fairly small. This step could also be used if employment data is derived separately through national accounts' procedures and through the employment module. Again, different sources of data should only be reconciled with this method if the discrepancies are not too large. A better approach is to set the TSA totals as target totals and reweigh the totals derived through the integration process of the employment module against the TSA totals. Otherwise, at least in the case of the compensation of employees, this could lead to the adjustment of GDP in the TSA.

Depending on the available employment data in a given country, the questions and adjustments can be elaborated or modified. A general outline is presented here using the number of jobs of employees and the self-employed as an example. The same process can be carried out for other connecting variables. The advantage of starting with "the number of jobs" is that the other variables, such as FTEs, hours of work, compensation and people employed, are closely linked with this variable.

**Full-time equivalents and hours of work**

Since jobs can be full-time or part-time, labour volumes in the SNA/TSA are mainly expressed in full-time equivalents (FTEs). FTEs provide a better concept than jobs for cross-industry comparisons. FTEs are not a head count of people employed, but they do provide an indication of the potential number of full-time jobs in an industry or job group. In general, the SNA indicates that FTEs should be calculated by dividing the total hours actually worked by the average annual hours actually worked in a full-time job. In the step from jobs to FTEs, the contribution of every job, small or big, is added to the (average) total of FTEs. Two employment categories should be distinguished: *i)* the self-employed, including contributing family workers, own-account workers and out-workers; and *ii)* employees including students, apprentices, etc., and those who work through employment agencies (see Chapter 9). However, methods for translating jobs into FTEs can differ.

For example, the simplest method is to take an already determined *full-time/part-time ratio* and recalculate the average annual number of jobs to obtain an average annual number of FTEs by multiplying the number of jobs by their part-time fraction.

If full-time/part-time ratios are not available, these ratios have to be estimated from the bottom up. An easy method is to set a standard number of hours for a "normal" full-time working week (or year) or take the contractual hours as an indication. Everybody who works equal to or more than this standard number of hours, say 35 hours a week, is a full-time worker, and anyone who works less is a part-timer. Full-time jobs count as one FTE while part-time jobs count as half an FTE.

These methods are rather crude. Since the length of a full-time job has changed through time and differs across industries, more sophisticated methods are preferable. The question is how to determine the weekly, or better the annual, average hours worked on a full-time job. Again, the starting point could be to set a standard number of hours, say 35 hours a week. With this "standard" for a normal full-time week or year, jobs can be classified as full-time or part-time. The average hours worked for

71. See also Round (1993).

full-time jobs can then be calculated. Dividing the total hours worked by the average for a full-time job, the annual average number of FTEs can be derived. In line with the SNA, the number of hours *actually* worked should be used, excluding annual leave, sick leave, holidays, strikes, etc. Averages are best based on *yearly* rather than weekly (contractual) working hours to allow differences in labour time to be better taken into account. Full-time equivalents should be calculated separately at the *lowest level* possible and then summed, by economic activity, by job group or by establishment. In the case of "normal" hours of work, much depends on the available data and the differences between types of work or even between gender.[72] For "average hours of a full-time job", the normal or contractual hours of work for that industry or job group can be used.

Text Table 4. **Translating jobs into FTEs: a simple example**
Total population of six workers

| Hours of work | Full-time | Part-time |
|---|---|---|
| 25 | | P |
| 10 | | P |
| 40 | F | |
| 15 | | P |
| 45 | F | |
| 35 | F | |
| 170 | 3 | 3 |

*Note:* Set number of full-time hours is 35.
*Method 1*: With a full-time/part-time ratio of, for example, 0.80: 6 x 0.8 = 4.8 FTEs.
*Method 2*: 3 full-timers + 3 part-timers = 4.5 FTEs.
*Method 3*: The average for full-timers is 40 hours (40+45+35/3) = 170/40 = 4.3 FTEs.

The last method can be further fine-tuned by distinguishing between employees and the self-employed. For *employees*, a labour agreement can provide a good indication of a normal full-time week. In the case of the *self-employed*, however, working hours can vary widely. The hours involved are difficult to compare with the contractual hours of employees since the number of hours of work can be excessive. Overtime and additional unpaid working hours at home are not taken into account in the calculation of contractual employee hours. For the self-employed, all such hours will appear in surveys. An additional difference in interpretation could be that the self-employed engage in other activities while they are working. No reductions are made for this in the reporting of weekly working hours. The main question is whether a different standard for a normal full-time working week or year needs to be defined for the self-employed. Usually this is not done and the method described above is applied, whereby the normal full-time working week for the self-employed is set at the same number of hours as for employees. Sometimes the self-employed with excessively long weeks are excluded and all workers who work longer than the normal working week are counted as one FTE. Only for the self-employed working less than a normal week is the ratio calculated between total hours worked and the average hours worked for a full-time job in that group.

In practice, total hours of work and the annual average full-time hours may have to be estimated because information on, for example, sick leave and annual leave is not directly available. If information is available on the average working hours of the total group and the average working hours of a full-time job, for example the agreed hours of work for that group, then the ratio between

72. Differentiation by gender can be necessary if labour contracts for men differ substantially from contracts for women.

these two figures can be used to derive FTEs. This calculation should, of course, be done by economic activity or by job group.

In interpreting *changes* in labour volumes over the years based on FTEs, it should be borne in mind that these can result from either changes in the number of jobs or changes in the average hours worked (for a full-time job). Furthermore, it should be noted that different methods can lead to different results (see, for example, Text Table 4).

Although FTEs are mainly used as the estimate for labour inputs in the SNA/TSA, total annual hours of work remains the best measurement unit for examining *productivity*, the main issue in the SNA. This relates to the total annual hours *actually* worked. These data, at least for employees, can usually be obtained from (quarterly) establishment surveys. The annual total can be a simple sum of four quarters. However, as for "the number of jobs", the processes of harmonisation, full or identical coverage and minimisation of errors have to be carried out. Also, a relationship must be ensured with the population used to derive "the number of jobs".

If data are available on annual average hours worked, the total number of hours worked for each industry can be obtained by multiplying this figure by the number of people employed or jobs, depending on the basis of the average. The average hours worked equals the aggregate hours worked by a group divided by the number of persons or jobs in that group. However, it is not always possible to estimate the hours *actually* worked, because information on annual leave, holiday, sick leave and other specific elements of hours paid for but not worked, is not always available. In that case *paid hours worked for*, including overtime, is a second-best option. This is also true for the calculation of FTEs. FTE as a measurement unit relates better to the compensation of employees and the way in which employment statistics are collected. The relationship between the two concepts is as follows: total hours actually worked = total hours paid for – total hours paid for but not worked.

If the annual average number of jobs or FTEs is determined, then tourism ratios can be applied to derive the employment "actually" attributed to tourism, excluding the employment generated by non-visitors, for the selected tourism industries. In general, tourism ratios represent the share of GDP of the selected tourism industries that can be attributed to tourism consumption.[73] These ratios can be calculated for the selected industries and used to differentiate between different types of visitors, *e.g.* overnight or same-day visitors, inbound or domestic tourists or business tourists. The results should be in line with the estimates of the levels of direct employment derived from a demand-side approach.

**Compensation of employees**

Cost of labour and distribution of income are important elements of the SNA. This relates particularly to the compensation of employees and the mixed income of the self-employed. In addition to return to labour, *mixed income of the self-employed* contains return to capital and entrepreneurship. These elements cannot unambiguously separated out. The total item of mixed income and operating surplus[74] is, therefore, used as a balancing item in the accounts without further differentiation. The *compensation or the total annual gross earnings of employees* is, in general, defined as all payments made directly to workers in connection with work carried out, including payments for social contributions and other collective fees made on behalf of the employee by the employer. The main components are:

73. See the TSA for the calculation of tourism ratios.

74. This balancing item is defined as value added – compensation of employees – taxes + subsidies.

- *Wages and salaries:* This item covers payments, whether in cash or in kind, for normal time worked, overtime and additional payments such as time paid but not worked for (*e.g.* holidays), all regular/irregular bonuses, tips, incentive pay or commissions, allowances for travel or disagreeable or hazardous circumstances and benefits in kind (*e.g.* meals, drinks, housing and transport to and from work). These are gross concepts, *i.e.* before any deduction for income tax, social security, contributions to pension schemes, etc. Wages and salaries do *not include* reimbursements by employers of expenditures made by employees to take up their jobs or carry out their work (*e.g.* moving expenses or the purchase of special clothing should be treated as intermediate cost of production), or payments made to employees unrelated to the amount of work carried out (*e.g.* payments made to workers absent from work because of illness, injury, maternity leave, etc., and severance payments).

- *Employers' social contributions:* Benefits, in cash or in kind, received by workers in addition to their wages and salaries and which are intended to provide for needs arising from sickness, unemployment, accidents, retirement, etc. This supplementary labour income includes: employers' contributions to pension, retirement and social security schemes, medical services, day nurseries, housing, sports, grants, year-end bonuses and all other voluntary or compulsory contributions paid by workers and covered by employers. When employers provide these benefits themselves, the remuneration should be imputed.

Compensation of employees should be presented in annual totals. Again, this information can usually be obtained from (quarterly) establishment surveys. The annual total can be a simple sum of four quarters. Again, however, the processes of harmonisation, full or identical coverage and minimisation of errors have to be carried out. If an average is available for gross annual earnings per job, an annual total can be derived by multiplying the number of jobs in each job group by the average annual compensation for jobs in that group.

In relation to the interpretation of *changes* in the annual compensation of employees and the self-employed, this item can be broken down into changes in the number of hours paid for (volume component) and changes in the price of labour, say an average hourly wage (price component).

In addition to income distribution (not included in the TSA), the cost of labour is a main issue in the SNA. However, there is a difference between the compensation of employees and labour cost.[75] The compensation of employees describes the total annual earnings of employees in return for labour, while labour cost stipulates the total cost for the employer related to the utilisation of labour. Compensation of employees differs from labour cost in that it includes imputed employer contributions to unfunded social insurance schemes and excludes any taxes regarded as labour cost, together with the cost of training, welfare, recruitment and the provision of work clothing, etc.

Earnings, either as compensation of employees or as mixed income of the self-employed, are major items in the SNA. Unlike jobs, FTEs or hours of work, these items appear in the actual accounts as part as value added (*e.g.* the production account in the TSA) or in the distribution of income. Compensation of employees can be used as the starting point for the connection with more detailed labour data. Through a micro-macro linkage (see Chapter 10), cross-tabulations (based on FTEs) can be made. A good example would be wages and salaries of employees (paid labour), subdivided by variables such as gender, education, nationality and industry (Text Table 5). This opens up possibilities for analysis of, for example, the composition of labour income by gender, education and industry; the share of income for women by industry; and the weight of non-residents in the total compensation for employees.

75. In SNA93, illegal labour (cost) is also estimated.

Text Table 5. **Paid employment (based on FTEs), by gender, education, nationality and industry**
Fictitious data

| | Hotels, etc | Transport | Travel agencies | Recreation, etc. | Total, tourism-related industries | Total, market industries | All industries |
|---|---|---|---|---|---|---|---|
| Compensation of employees, total *(Item in TSA*) | 12.12 | 36.9 | 4.2 | 5.9 | 70.8 | 674.3 | 783.4 |
| Resident, total | 10.1 | 30.4 | 4.0 | 5.8 | 50.3 | 611.6 | 713.3 |
| Male, low education | 3.1 | 10.2 | 0.2 | 1.1 | 14.6 | 130.2 | 150.9 |
| Male, middle education | 2.3 | 8.3 | 1.1 | 1.8 | 13.5 | 190.0 | 210.6 |
| Male, high education | 0.5 | 2.4 | 0.1 | 0.5 | 3.5 | 60.1 | 70.3 |
| Male, total | 5.9 | 20.9 | 1.4 | 3.4 | 31.6 | 380.3 | 431.8 |
| Female, low education | 3.4 | 5.3 | 0.4 | 1.4 | 10.5 | 100.3 | 130.5 |
| Female, middle | 0.6 | 3.4 | 2.1 | 0.9 | 7.0 | 110.7 | 120.9 |
| Female, high education | 0.2 | 0.8 | 0.1 | 0.1 | 1.2 | 20.3 | 30.1 |
| Female, total | 4.2 | 9.5 | 2.6 | 2.4 | 18.7 | 231.3 | 281.5 |
| Low education, total | 6.5 | 15.5 | 0.6 | 2.5 | 25.1 | 230.5 | 281.4 |
| Middle education, total | 2.9 | 11.7 | 3.2 | 2.7 | 20.5 | 300.7 | 331.5 |
| High education, total | 0.7 | 3.2 | 0.2 | 0.6 | 4.7 | 80.4 | 100.4 |
| Non-resident, total | 2.1 | 6.5 | 0.2 | 0.1 | 8.9 | 62.7 | 70.1 |

In general terms, the following steps are required to compile this kind of data:

- Connect data from a household or labour force survey (*e.g.* education, age and other variables) with data from an establishment survey (*e.g.* jobs, wages and hours of work).
- The connection should be made on the basis of common variables (*e.g.* gender, age and industry). The most reliable source of information is used as the standard against which to reweigh. This is done on a cell-by-cell basis and results in a data set which comprises all the necessary variables.
- The new data set is then used to derive salaries and wages by type of employment. As a final step, the data is raised to the level of the totals of the TSA.

The same procedure can be used for other employment variables, as well as for variables such as type of household. It can also be used to break down the mixed income of the self-employed into its component parts. However, a problem arises here since income related to work done has to be separated from income related to capital and entrepreneurship. A rather crude method is to use wages of employees as an indication.

As a starting point for providing a more comprehensive picture of earnings and hours of work for *employees*, one could use (by industry):

- Average annual number of jobs.
- Average annual hours worked per job:
  - Average annual normal hours worked per job.
  - Average annual hours overtime per job.
  - Average annual hours paid for per job (***A***+***B***).

- Average gross hourly wage per job, including overtime (based on ***C***).
- Average gross yearly wage per job, including overtime (based on ***C***).
- Total compensation of employees (1 * 5).
- Labour cost.

These data can be further differentiated into full-time/part-time, male/female and occupational groups.

**Concluding remarks**

The connection between, or the integration of, the employment module and the TSA is especially important as it creates a central framework which provides not only a coherent set of definitions and classifications, but can also function as a benchmark against which other employment data can be compared, leading to a better overall picture and increased comparability. Once integration has been achieved, additional subdivisions can be introduced by linking the detailed sources of information to aggregated accounts data. This not only holds for "jobs" and related topics, but also for "people employed". Within household or labour force surveys, jobs and persons employed can usually be linked. This relationship can be used to incorporate data on people employed into the central framework of the employment module and the TSA. Persons employed and jobs can be further subdivided according to personal characteristics such as occupation, education, nationality and hours of work. A further step is to create a TSAM, in which monetary data can be reconciled with non-monetary data, using other sources of data. Each indicator is computed from the same fully consistent statistical system, resulting in identical macro totals and improving the GDP estimate.

However, the realisation of such a broad framework is still far away. The connection between the employment module and the TSA should not be seen as the only and perfect solution. The TSA has its deficiencies and limitations[76] as an input-output model or an accounting system.[77] The process of micro-macro linkages requires a number of decisions and assumptions; this can have a negative effect on the quality of the resulting data. It can be difficult to achieve consistent aggregation of the micro data for each cycle. If large differences between the original data and the totals of the TSA subsist, even after the process of harmonisation, etc., reweighting is not sufficient. Careful consideration has to be given to the concepts, definitions and populations used. A search for measurement errors has to be implemented and data should be rechecked, even on a micro-micro basis. The compilation of a TSA can be slow because of the availability of basic data and this can lead to problems of timeliness. Finally, setting up such a comprehensive system can be time-consuming, especially if one tries to integrate all available employment sources every time. Not everybody is convinced of the desirability of such a linkage, and much depends on the statistical situation in a given country. This indicates that it is highly desirable that the employment module should be able to stand on its own. For example, the supply of actual tourism-related employment data should not have to wait until such time as the TSA is complete. The data in the employment module can be updated and tuned as the results of a new TSA become available.

76. For example, technical production functions are linear, consumer behaviour is assumed to be homogeneous, there are no supply constraints and the interactive effects are ignored. See Commonwealth Department of Tourism (1994).

77. Or applied general equilibrium model.

Although linking demand and supply of tourism for employment purposes through a connection with the TSA is a very useful exercise, some issues related to this approach need to be highlighted:

- Even using a demand-side approach, it is often difficult to allocate expenditures of visitors to the various activities related to tourism. The availability of reliable data can cause problems. Moreover, the employment elements, such as labour coefficients, which are used in demand-side methods, are calculated on the basis of supply-side statistics. A supply-side approach is required to obtain greater insight into the determinants that influence the development of tourism-related employment. A TSA alone cannot provide these determinants.
- Tourism share ratios should be used with care. If output in an industry increases by 10%, this can, for instance, be the result of a decrease (rather than an increase) in tourism expenditure and a proportionally large increase in non-tourism expenditures in that industry. In such a situation, it would be incorrect to use a ratio for the tourism share of employment. Therefore ratios can only be used as indications, at least in terms of levels of employment. Applying tourism ratios to characteristics of people employed, such as gender, age, nationality and occupation, would not supply meaningful information.
- In the case of labour policies, it is less important to know exactly which part of employment in an industry is generated by the expenditures of visitors. In many cases, labour policies will be directed to the total labour market of that industry or to a specific job group, regardless of whether the employment results from the expenditures of visitors or non-visitors. On the other hand, if the impact or effects of tourism flows and related tourism expenditures have to be analysed, demand-side approaches, such as input/output tables and other accounting models, continue to be the best methods. Econometric models can provide useful alternatives (although often more complex).[78]
- In practice, input/output models are usually restricted to quarterly or annual data. This, however, means that the seasonal character of tourism is only partly reflected.
- Finally, from a statistical point of view, much depends on the availability and accessibility of employment data for the selected tourism industries. Often the desired level of detail can lead to serious quality problems. Even if the steps described in this section are followed, differences in definitions and classifications between the available sources of employment data can act as a bottleneck.[79]

In general, this means that:

- For estimates of the levels of *direct* tourism employment, demand- and supply-side approaches can be used. The results can be reconciled using, for example, tourism ratios.
- For estimates of levels of *indirect* tourism employment, a demand-side approach is needed.
- For the description of the *composition* of tourism-related employment, only a total supply-side approach can be used, *i.e.* based on total industries. Some reconciliation can be achieved by using the same population for the estimates of the levels of direct tourism employment.

78. Commonwealth Department of Tourism (1994).

79. Other possibilities are the redesign of surveys or exact or synthetic matching.

*Chapter 11*

# THE TABLES OF THE EMPLOYMENT MODULE

This chapter provides a set of tables and a worksheet for compiling and presenting employment data in characteristic tourism industries (CTI). It follows the variables, definitions and classification described in Chapter 9. To the extent possible, these definitions and classifications are based on SNA or ILO concepts. For the compilation of the data, the reader is referred to Chapter 10 which presents a broad outline of how to move from basic employment data to data that can be incorporated into the TSA, using the employment module as an integration framework (*micro-macro linkage)*.

The tables use a *supply-side approach* to employment. The set of industries follows the selection of tourism industries chosen for the TSA (Text Table 1). This set of industries can be adjusted or elaborated if changes are made in the TSA in relation to the inclusion or exclusion of specific tourism industries. The main focus is on the composition of the labour force in the selected industries. However, depending on the point of interest, other variables can be included.

A *demand-side approach*, such as that provided by the input/output tables of the TSA, cannot provide information on these aspects of employment. However, a demand-side approach is a good method for estimating the *levels of tourism-related employment*. This can, for example, be done on the basis of the output or value added, gross or net, of tourism-related industries using labour coefficients or tourism ratios. This approach can provide a broader view on employment levels than a supply-side approach and can account for aspects such as indirect employment.

In general, this means that the levels or the totals of tourism-related employment in the TSA and the employment module should match as far as possible. At the very least, any differences should be explicable. Data on the composition of employment, however, is compiled uniquely from the supply-side perspective.

The aim of this chapter is to provide a set of tables for the compilation of tourism-related employment. These tables can be used to strengthen national and international comparability of tourism-related employment data, but they also allow analysis of the different concepts and definitions of the data sources used.

The employment module is a set of fourteen partly linked tables plus a summary table. The starting point is the number of jobs and the number of employees by tourism-related industry, broken down by status in employment (Table 1). The number of establishments in each tourism-related industry provides additional information. These three aspects are further broken down in the tables of the module. Jobs are distinguished by working scheme, average hours of work, average earnings, average seniority and permanency of job.[80] People employed are further distinguished by gender, age, education and nationality. The number of establishments is, *inter alia*, subdivided by size class. The linkage between people employed and jobs can be found in Worksheet 1.

80. The variable “irregular working hours” is left aside for the time being.

Table 12 contains the variables which link the employment module to the TSA, *i.e.* jobs, FTEs, total annual hours of work and total annual compensation of employees. It is particularly important that this last variable match between the employment module and the TSA (see the production account). It should be based on the number of jobs, and relates to other characteristics such as average wages and average hours of work. In return, the TSA provides a set of useful indicators, such as tourism ratios and gross output per job. These are presented in Table 13.

No specific multi-dimensional tables are included. Chapter 10 provides an example of the further breakdown of compensation of employees based on the link with the TSA.

Although at first sight it might appear that substantial resources will be required to compile the data for the tables, especially if it proves necessary to start from scratch, most of the tables can be filled from a single source, *i.e.* a household or labour force survey. If the number of people employed and/or the number of jobs can be compiled from that source, many of the other variables can be collected in the same process. It is also possible to gradually expand the amount of data presented (see next section). However, if the intention is to build a module that is fully incorporated in the TSA and integrates all possible employment sources from the outset,[81] the (start-up) process will require substantial resources.

An alternative is not to compile the totality of the data in every cycle of presentation. Some data, such as the characteristics of the labour force, will not change dramatically every year or quarter. Data on, for example, the number of people employed, jobs and FTEs, distinguished by status in employment, working scheme and earnings, should be presented on a regular basis (yearly or even quarterly), while other data can be presented less frequently (yearly or even less often).

On the other hand, employment is a complex phenomenon. The core data presented in this module cover only the tip of the iceberg. To obtain a complete picture of employment, a great deal more data needs to be collected with a wider scope and at a more detailed level of aggregation.

The level of detail is limited to the three-digit level of the ISIC classification, with the exception of travel agencies and car rentals. Although countries can provide information at the four-digit level, the three-digit level is maintained here for reasons of reliability and comparability. The connection with the TSA, however, should be ensured. If data are only available at the two-digit level, additional information should be compiled to enable the data to be broken out to the three-digit level.

A row "other tourism-related industries" is included in each of the tables. This row should be used for industries that are included in the TSA but which are not mentioned specifically in the other rows. This accounts, for example, for industries such as the retail of tourism commodities, etc. The industries included in this row should be presented separately as "of which" groups. If a country wishes to highlight specific classes belonging to the selected industries, these can also be presented as "of which" groups. Examples are health spas ("of which" class of group 551) or ski lodges ("of which" class of group 924). Employment in industries which fall outside the scope of the TSA can be included as memorandum items.

Only official statistical data should be used. As far as possible, the compilation of tourism-related employment data should follow existing procedures for the compilation of employment data in general. Deviating from these processes and sources will render the regular compilation of the data far more time-consuming. For the basic set of data, it will not be difficult to comply with the definitions and classifications set out in Chapter 9.

81. See, for example, the ideas behind a (Tourism) Social Accounting Matrix (SAM or TSAM).

The tables are grouped in six blocks:

- *Block I* (Tables 1 and 2): tables presenting the *general level* of employment in the selected characteristic tourism industries, with the number of establishments as additional information.
- *Block II* (Tables 3, 4, 5, 6 and 7): tables which distinguish employment by the characteristics of *jobs*, including average hours of work and average wages.
- *Block III* (Tables 8, 9, 10 and 11): tables which distinguish employment by the characteristics of *people employed*, such as gender, age, nationality, etc.
- *Block IV* (Tables 12 and 13): tables which provide the connection with the TSA.
- *Block V* (Table 14): breaks down *establishments* by size class and presents births and deaths of establishments.
- *Block VI* (Table 15): summarises the main variables by industry.

The objective of the exercise is to provide tourism-related employment data for each year with the aim of building up *time-series.* This should not necessarily only be related to a year with a completed TSA. For some core variables, *short-term indicators* (every quarter or even every month, at least during the tourism season) should be available. This should be the case, for example, for the general level of employment, expressed in jobs and FTEs, subdivided by status in employment, working scheme and wages and salaries of employees (particularly the variables presented in Table 15). In addition to time-series, it is possible to include *year-to-year changes* (in percentages), by comparing current data with that last recorded.

**Developing a set of employment data for tourism-related industries**

The development of an employment module for tourism-related industries is fully dependent on the statistical situation in a given country and the availability of employment data, as well as on the resources available. The following list shows the steps involved if starting from scratch:

***Step 1***: Make an *inventory of all available sources on employment* related to the selected tourism industries. This can include not only the "standard" household or labour force and establishment surveys, but also other, often smaller, social or industry surveys and data from business registers. The advantages and disadvantages of each source of information should be described. In addition to populations, definitions and classifications used, it is important to know if these sources can be linked, through common variables, with other sources (*e.g.* ISIC classification).

***Step 2****:* As a first step in compiling tourism-related employment data, the best option is to use *only household or labour force surveys*. This source provides a broad view on employment, although the data are not always accurate at all levels. Data can be presented on the number of people employed and/or the number of jobs, distinguished by variables such as status in employment, working scheme, gender, age and nationality. It should be kept in mind that the SNA definitions and classifications described in this module should be followed as far as possible. This is usually feasible, although some adjustments may be necessary. Concerning the population, problems can be expected to occur with the inclusion or exclusion of border and seasonal immigrant workers and workers working through employment agencies. Whether or not these groups can be included depends on the availability of data and the degree of detail. A further elaboration of the *occupational approach* could be made here. *Important tables:* 1, 3, 8 and 9.

***Step 3:*** This can be seen as a first step leading towards *the integration of the employment module and the TSA*. This can be done by adding more aspects and variables of employment. The step from jobs to full-time equivalents (FTEs), hours of work and compensation of employees is an important one and usually means that data from establishment surveys have to be included. As a first step, this could be done for *employees*. At a later stage, data for the self-employed could be added. In this stage, *tourism ratios* can also be applied. *Important tables:* the tables of step 1, Tables 4 and 5, and especially Tables 12 and 13.

***Step 4:*** The full potential of the integration of the employment module and the TSA can be realised in this step. Again, this may be done initially for employees, followed by the self-employed. Jobs or FTEs and the items of compensation of employees and mixed income of the self-employed are the central part of integration and the match between the TSA and the employment module needs to be perfect. The totals of other employment variables are benchmarked against the totals of these central variables, allowing labour analysis to be linked with other economic processes in the TSA. In this step, employment data from a demand-side approach could be (partially) reconciled with data compiled through the module (supply side).

***Step 5:*** This step entails gradually adding more and more variables, such as education (Table 10), nationality (Table 11), average seniority (Table 6), permanency of job (Table 7) and establishments by size class (Table 14). Quarterly (Table 2), or even monthly, indicators could be included.

***Step 6:*** This step entails expanding the framework on the basis of the ideas underlying the creation of a Tourism Social Accounting Matrix (TSAM or even a TSESAME),[82] and linking employment with possible extensions to the TSA. People employed and related topics can be integrated through the link with jobs in a household or labour force survey. This step also permits the inclusion of aspects such as indirect employment.

The employment module tables can be further improved. In addition, an elaboration with, for example, occupational groups, is necessary. It is especially important that *time series* be constructed over a number of years. As a starting point, data for more than one year could be compiled in one run.

**Remarks on the employment tables**

Worksheet 1 focuses on the calculation of the total population of tourism-related employment, expressed in jobs and people employed. If possible, data should be compiled as *annual averages*. Problems could arise with the groups of inbound labour and people working through employment agencies. Often little or no data on these groups are available or data cannot be assigned to the proper industry. In that case, these groups should be excluded. Sometimes the total hours of work of these groups is collected, allowing a crude estimate of, at least, the number of jobs using the average hours of work per job (Table 4). Establishment surveys can sometimes be used as an alternative. The main elements of this table are:

- Column 1: people employed with their main job in characteristic tourism industries (CTI).
- Column 2: jobs on the side in CTI of people with a main job in CTI (column 1).
- Column 3: jobs on the side in CTI of people with a main job outside CTI. This column could be split into people employed (first job on the side) and in second, third, etc., jobs. Here, the assumption is made that the number of people with a second, third, etc., job on the side will

82. Tourism System of Economic and Social Matrices and Extensions, see SNA93.

be very limited. Therefore, the number of jobs on the side equals the number of people employed for this group.

- Column 4: jobs of inbound labour, such as border workers or seasonal immigrant workers. Here, the number of jobs equals the number of people employed since there is usually little information available to subdivide this group. There can be a difference between labour force surveys (from which these groups are usually excluded) and establishment surveys (in which these groups are sometimes included).
- Column 5: jobs of people working through employment agencies. Again, the number of people equals the number of jobs.
- Column 6: total annual average number of jobs in CTI: 1 + 2 + 3, if possible, + 4 + 5.
- Column 7: total annual average of people employed in CTI: 1 + 3, if possible, + 4 + 5.
- Column 8: indication of "moonlighting": 2 + 3. A full indication of "moonlighting" should also include jobs on the side outside CTI (from column 1).

***Block I***

*Table 1*. Total number of *jobs* and *people employed*, distinguished by *status in employment* (self-employed/employees). The self-employed should include employers, contributing family workers and own-account workers. The data should be shown as *annual averages* (based on twelve months or four quarters). As additional information, the number of establishments is requested (from business registers; annual averages are preferred).

*Table 2*. Total number of *jobs of employees per quarter* (an indication of seasonality). Monthly data are preferred, but are not always easily available. Quarterly averages are the best option; otherwise, end of quarter data can be used.

***Block II***

*Table 3*. Jobs by *working scheme* (full-time/part-time). This should be an "annual average" based on the population used for the number of jobs. Point-in-time data provides only a second-best option. A distinction is made between the self-employed and employees. For employees, a further distinction is made between male/female. If data are not available for all subdivisions then, for example, only the totals could be filled.

*Table 4*. Jobs by average *hours of work*. This accounts for either hours *actually* worked (preferred for the TSA) or hours *paid for* (probably the most practical solution). A distinction is made between the self-employed and employees. For employees, a further distinction is made between an annual average of usual hours of work and an annual average of overtime hours. The calculation of these variables is total annual hours of work (or normal time or overtime) divided by total number of jobs.

*Table 5*. For jobs of *employees* only, the annual average *gross wages,* including overtime (and social contributions), hourly and yearly. Together with the number of jobs, these data can be used to derive total compensation of employees. If no distinction can be made between male and female, then only the totals can be filled.

*Table 6*. Jobs by average *seniority* (in months). This is an indication of the degree of labour turnover. A distinction is made between the self-employed and employees. This figure represents the average duration of work in the current job and is based on the data set used for the number of jobs.

*Table 7*. Jobs of employees by *permanency of job*. This should be "annual averages", meaning that the same data set is used to calculate the average number of jobs, or if no other data are available a point in time could be used.

***Block III***

*Table 8.* People employed (jobs can be used as an alternative) by *sex profile*. If no data are available on inbound labour and people working through employment agencies, then this figure is based on the population of column 1, 2 and 3 of Worksheet 1. This should be "annual averages", meaning that the same data set should be used as for the calculation of the average number of people employed (or jobs). Otherwise, a point in time is an alternative.

*Table 9.* People employed (or jobs as an alternative) by *age profile*. The column for child labour (< 15 years) can be used if needed and if data are available. See the remarks pertaining to Table 8.

*Table 10*. People employed (or jobs as an alternative) by *education level* (see ISCED classification). As a first step, the national education classification of the country should be used. See the remarks pertaining to Table 8.

*Table 11*. People employed (or jobs as an alternative) by *nationality*. This depends on how nationality is defined. See the remarks pertaining to Table 8.

***Block IV***

*Table 12*. This table includes the variables used in the TSA. It is possible that not all data are available, particularly in the case of total hours actually worked. The table consists of:

- Columns 1 and 2: total number of jobs and people employed (see Table 1).
- Columns 3 and 4: total hours actually worked or paid for, as an annual total. This total could be summed over months or quarters. Alternatively, the number of jobs (Table 1) multiplied by the annual average hours worked per job (Table 4) could be used.
- Columns 5 and 6: full-time equivalents (FTEs). This is an annual average.
- Column 7: compensation of employees, annual total. This could be the sum over twelve months or four quarters. An alternative is the annual average number of jobs (Table 1) multiplied by the annual average wages (Table 5). This variable is actually used in the production account and in the distribution of income account (not in the TSA) of the SNA.

*Table 13.* This table presents general indicators and calculations from the TSA, such as the tourism share of employment (tourism ratios) and gross output per job in the selected industries. The table includes:

- Column 1: number of jobs (Table 1).
- Column 2: number of FTEs (Table 12).

- Column 3: tourism ratios (see TSA for their calculation).
- Columns 4 and 5: *tourism share of employment* in CTI, expressed in jobs and FTEs, calculated by multiplying columns 1 (jobs) and 2 (FTEs) by column 3 (their tourism fraction). This can also be expanded to ratios for employment generated by the expenditure per visitor group (tourism ratios per visitor type) and the inclusion of indirect labour.
- Column 6: gross output per job (see the TSA).
- Column 7: Full-time/part-time ratio (see Table 3, columns 1 and 2).
- Columns 8 and 9: Employed/FTE ratio, distinguished between the self-employed and employees (see Table 1 and column 2).

***Block V***

*Table 14*. The number of establishments by size class. This total can come from annual averages or one point in time. Additional information is asked about births and deaths of establishments. This should be a percentage, calculated by dividing the number of births and deaths over the year of recording by the total (average) number of establishments. *Source:* business registers.

***Block VI***

*Table 15*. Summarises the core variables per industry (Tables 1, 3, 4, 5 and 12).

Worksheet 1. **Level of employment in characteristic tourism industries (CTI): Linking jobs and people employed (annual averages)**

| | People employed with main job in CTI<br>(1) | Jobs on the side in CTI and main job in CTI<br>(2) | Jobs on the side in CTI but main job *outside* CTI<br>(3) | Jobs of *inbound* labour workers in CTI<br>(4) | Jobs of people working in CTI through temporary agencies<br>(5) | Total number of *jobs* in CTI = 1+2+3+4+5<br>(6) | Total number of *people employed* in CTI = 1+ 3+4+5<br>(7) | Indication of *moon-lighting* = 2 + 3<br>(8) |
|---|---|---|---|---|---|---|---|---|
| *Tourism industries:* | Abs. | Abs. | Abs. | Abs. | Abs. | Abs. | Abs. | Abs. |
| 551 Hotels, etc.<br>552 Restaurants, etc.<br><br>601 Railways<br>602 Other land transport<br><br>611 Sea/coastal water transport<br>612 Inland water transport<br><br>621 Scheduled air transport<br>622 Non-scheduled air transport<br><br>6304 Travel agencies, etc.<br><br>7111 Car rental<br><br>921 Motion picture, etc.<br>923 Libraries, etc.<br>924 Sporting/recreational act.<br><br>Other tourism-related industries, of which:<br>……..<br>……..<br>…….. | | | | | | | | |
| Total tourism-related industries | | | | | | | | |

*Source:* OECD Tourism Committee.

Table 1. **Level of employment, expressed in jobs and people employed, with additional information on the number of establishments**
Annual averages

| | A. Jobs | | B. People employed | | C. Number of establishments |
|---|---|---|---|---|---|
| | Self-employed | Employees | Self-employed | Employees | Total |
| *Tourism industries:* | Abs. | Abs. | Abs. | Abs. | Abs. |
| 551 Hotels, etc.<br>552 Restaurants, etc.<br><br>601 Railways<br>602 Other land transport<br><br>611 Sea/coastal water transport<br>612 Inland water transport<br><br>621 Scheduled air transport<br>622 Non-scheduled air transport<br><br>6304 Travel agencies, etc.<br><br>7111 Car rental<br><br>921 Motion picture, etc.<br>923 Libraries, etc.<br>924 Sporting/recreational act.<br><br>Other tourism-related industries, of which:<br>……<br>……<br>……<br>…… | | | | | |
| Total tourism-related industries | | | | | |
| Total economy | | | | | |

*Source:* OECD Tourism Committee.

**Definition of employment:**.....
.....
**Definition of self-employed:**.....
.....
**Definition of employees:** .....
.....
**Age limits?** .....
.....
**Groups included or excluded?** .....
.....
**Workers of temporary agencies and inbound labour included?** .....
.....
**Sources:** .....

Table 2. **Total number of jobs of employees per quarter**
Indication of seasonality

| | Jobs of employees | | | |
|---|---|---|---|---|
| | 1e quarter | 2e quarter | 3e quarter | 4e quarter |
| *Tourism industries:* | Abs. | Abs. | Abs. | Abs. |
| 551 Hotels, etc.<br>552 Restaurants, etc.<br><br>601 Railways<br>602 Other land transport | | | | |
| 611 Sea/coastal water transport<br>612 Inland water transport<br><br>621 Scheduled air transport<br>622 Non-scheduled air transport<br><br>6304 Travel agencies, etc.<br><br>7111 Car rental<br><br>921 Motion picture, etc.<br>923 Libraries, etc.<br>924 Sporting/recreational act.<br><br>Other tourism-related industries, of which:<br>…….<br>…….<br>…….<br>……. | | | | |
| Total tourism-related industries | | | | |
| Total economy | | | | |

*Source:* OECD Tourism Committee.

Table 3. **Jobs by working scheme (full-time/part-time)**
Annual average or point in time

| | Jobs | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Total | | Self-employed | | Employees | | | | | |
| | | | | | Total | | Male | | Female | |
| | Full-time | Part-time | Full-time | Part-time | Full-time | Part-time | Full-time | Part-time | Full-time | Part-time |
| *Tourism industries:* | Abs. | Abs. | Abs. | Abs. | Abs. | Abs. | Abs. | Abs. | Abs. | Abs. |
| 551 Hotels, etc.<br>552 Restaurants, etc.<br><br>601 Railways<br>602 Other land transport<br><br>611 Sea/coastal water transport<br>612 Inland water transport<br><br>621 Scheduled air transport<br>622 Non-scheduled air transport<br><br>6304 Travel agencies, etc.<br><br>7111 Car rental<br><br>921 Motion picture, etc.<br>923 Libraries, etc.<br>924 Sporting/recreational act.<br><br>Other tourism-related industries, of which:<br>……..<br>……..<br>……..<br>…….. | | | | | | | | | | |
| Total tourism-related industries | | | | | | | | | | |
| Total economy | | | | | | | | | | |

*Source:* OECD Tourism Committee.

**Definition of full-time and part-time labour:** .....
.....
.....
.....
.....

Table 4. **Average yearly working hours (actually or paid for)**
For employees subdivided by normal time worked and overtime

| | Jobs | | | |
|---|---|---|---|---|
| | Self-employed | | Employees | |
| | Total | Total | Usual hours | Overtime |
| *Tourism industries:* | Abs. | Abs. | Abs. | Abs. |
| 551 Hotels, etc.<br>552 Restaurants, etc.<br><br>601 Railways<br>602 Other land transport<br><br>611 Sea/coastal water transport<br>612 Inland water transport<br><br>621 Scheduled air transport<br>622 Non-scheduled air transport<br><br>6304 Travel agencies, etc.<br><br>7111 Car rental<br><br>921 Motion picture, etc.<br>923 Libraries, etc.<br>924 Sporting/recreational act.<br><br>Other tourism-related industries, of which:<br>……..<br>……..<br>……..<br>…….. | | | | |
| Total tourism-related industries | | | | |
| Total economy | | | | |

*Source:* OECD Tourism Committee.

**Definition of average yearly hours of work/usual hours of work/overtime:** .....
.....
.....
.....
.....

Table 5. **Average gross wages of employees (hourly and yearly) per job, subdivided by gender**

| | Jobs of employees | | | | | |
|---|---|---|---|---|---|---|
| | Total | | Male | | Female | |
| | Hourly | Yearly | Hourly | Yearly | Hourly | Yearly |
| *Tourism industries:* | Abs. | Abs. | Abs. | Abs. | Abs. | Abs. |
| 551 Hotels, etc.<br>552 Restaurants, etc. | | | | | | |
| 601 Railways<br>602 Other land transport | | | | | | |
| 611 Sea/coastal water transport<br>612 Inland water transport | | | | | | |
| 621 Scheduled air transport<br>622 Non-scheduled air transport | | | | | | |
| 6304 Travel agencies, etc. | | | | | | |
| 7111 Car rental | | | | | | |
| 921 Motion picture, etc.<br>923 Libraries, etc.<br>924 Sporting/recreational act. | | | | | | |
| Other tourism-related industries, of which:<br>……..<br>……..<br>……..<br>…….. | | | | | | |
| Total tourism-related industries | | | | | | |
| Total economy | | | | | | |

*Source:* OECD Tourism Committee.

**Definition of gross hourly and yearly wages of employees:** .....
.....
.....
.....
.....

Table 6. **Average seniority of jobs**
In months

| | Jobs | | |
|---|---|---|---|
| | Total | Self-employed | Employees |
| *Tourism industries:* | Abs. | Abs. | Abs. |
| 551 Hotels, etc.<br>552 Restaurants, etc. | | | |
| 601 Railways<br>602 Other land transport | | | |
| 611 Sea/coastal water transport<br>612 Inland water transport | | | |
| 621 Scheduled air transport<br>622 Non-scheduled air transport | | | |
| 6304 Travel agencies, etc. | | | |
| 7111 Car rental | | | |
| 921 Motion picture, etc.<br>923 Libraries, etc.<br>924 Sporting/recreational act. | | | |
| Other tourism-related industries, of which:<br>……..<br>……..<br>……..<br>…….. | | | |
| Total tourism-related industries | | | |
| Total economy | | | |

*Source:* OECD Tourism Committee.

Table 7. **Jobs of employees by permanency of job**
Annual average or point in time

| | Jobs of employees | |
|---|---|---|
| | Permanent job | Job on contract basis |
| *Tourism industries:*<br><br>551 Hotels, etc.<br>552 Restaurants, etc.<br><br>601 Railways<br>602 Other land transport | Abs. | Abs. |
| 611 Sea/coastal water transport<br>612 Inland water transport<br><br>621 Scheduled air transport<br>622 Non-scheduled air transport<br><br>6304 Travel agencies, etc.<br><br>7111 Car rental<br><br>921 Motion picture, etc.<br>923 Libraries, etc.<br>924 Sporting/recreational act.<br><br>Other tourism-related industries, of which:<br>……..<br>……..<br>……..<br>…….. | | |
| Total tourism-related industries | | |
| Total economy | | |

*Source:* OECD Tourism Committee.

**Definition of permanent job:** .....
.....
.....
**Definition of job on contract basis:** .....
.....
.....

Table 8. **People employed by gender profile***
Annual average or point in time

| | People employed (or jobs) | | | | | |
|---|---|---|---|---|---|---|
| | Total | | Self-employed | | Employees | |
| | Male | Female | Male | Female | Male | Female |
| *Tourism industries:* | Abs. | Abs. | Abs. | Abs. | Abs. | Abs. |
| 551 Hotels, etc.<br>552 Restaurants, etc.<br><br>601 Railways<br>602 Other land transport | | | | | | |
| 611 Sea/coastal water transport<br>612 Inland water transport<br><br>621 Scheduled air transport<br>622 Non-scheduled air transport<br><br>6304 Travel agencies, etc.<br><br>7111 Car rental<br><br>921 Motion picture, etc.<br>923 Libraries, etc.<br>924 Sporting/recreational act.<br><br>Other tourism-related industries, of which:<br>……..<br>……..<br>……..<br>…….. | | | | | | |
| Total tourism-related industries | | | | | | |
| Total economy | | | | | | |

* An alternative method is to base the analysis on jobs.
*Source:* OECD Tourism Committee.

Table 9. **People employed by age profile***
Annual average or point in time

| | People employed (or jobs) | | | | | | |
|---|---|---|---|---|---|---|---|
| | Total | <15** | 15-24 | 25-34 | 35-44 | 45-55 | 55+ |
| *Tourism industries:* | Abs. | Abs. | Abs. | Abs. | Abs. | Abs. | Abs. |
| 551 Hotels, etc. | | | | | | | |
| 552 Restaurants, etc. | | | | | | | |
| 601 Railways | | | | | | | |
| 602 Other land transport | | | | | | | |
| 611 Sea/coastal water transport | | | | | | | |
| 612 Inland water transport | | | | | | | |
| 621 Scheduled air transport | | | | | | | |
| 622 Non-scheduled air transport | | | | | | | |
| 6304 Travel agencies, etc. | | | | | | | |
| 7111 Car rental | | | | | | | |
| 921 Motion picture, etc. | | | | | | | |
| 923 Libraries, etc. | | | | | | | |
| 924 Sporting/recreational act. | | | | | | | |
| Other tourism-related industries, of which: | | | | | | | |
| …….. | | | | | | | |
| …….. | | | | | | | |
| …….. | | | | | | | |
| …….. | | | | | | | |
| Total tourism-related industries | | | | | | | |
| Total economy | | | | | | | |

* An alternative method is to base the analysis on jobs.
** Row for child labour. Depends also on the age limit used.
*Source:* OECD Tourism Committee.

Table 10. **People employed by education level***
Annual average or point in time

| | People employed (or jobs) | | | | |
|---|---|---|---|---|---|
| | Total | No schooling | Primary | Secondary | Tertiary |
| *Tourism industries:*<br><br>551 Hotels, etc.<br>552 Restaurants, etc.<br><br>601 Railways<br>602 Other land transport<br><br>611 Sea/coastal water transport<br>612 Inland water transport<br><br>621 Scheduled air transport<br>622 Non-scheduled air transport<br><br>6304 Travel agencies, etc.<br><br>7111 Car rental<br><br>921 Motion picture, etc.<br>923 Libraries, etc.<br>924 Sporting/recreational act.<br><br>Other tourism-related industries, of which:<br>……..<br>……..<br>……..<br>…….. | Abs. | Abs. | Abs. | Abs. | Abs. |
| Total tourism-related industries | | | | | |
| Total economy | | | | | |

* An alternative method is to base the analysis on jobs.
** See ISCED classification or own classification.
*Source:* OECD Tourism Committee.

**Definition of no schooling:** .....
.....
**Definition of primary education level:** .....
.....
**Definition of secondary education level:** .....
.....
**Definition of tertiary education level:** .....
.....

Table 11. **People employed by nationality**
Annual average or point in time

| | People employed (or jobs) | | |
|---|---|---|---|
| | Total | Nationals | Non-nationals |
| *Tourism industries:* | Abs. | Abs. | Abs. |
| 551 Hotels, etc.<br>552 Restaurants, etc. | | | |
| 601 Railways<br>602 Other land transport | | | |
| 611 Sea/coastal water transport<br>612 Inland water transport | | | |
| 621 Scheduled air transport<br>622 Non-scheduled air transport | | | |
| 6304 Travel agencies, etc. | | | |
| 7111 Car rental | | | |
| 921 Motion picture, etc.<br>923 Libraries, etc.<br>924 Sporting/recreational act. | | | |
| Other tourism-related industries, of which:<br>……..<br>……..<br>……..<br>…….. | | | |
| Total tourism-related industries | | | |
| Total economy | | | |

*Source:* OECD Tourism Committee.

**Definition of nationality:**.....
.....
.....

Table 12. **Connecting table for the TSA with jobs (annual average), hours of work (annual total), full-time equivalents (annual average) and compensation of employees (annual total)**

| | Labour volume in jobs (see Table 1) | | Labour volume in total annual hours of work | | Labour volume in full-time equivalents (FTEs) | | Total compensation |
|---|---|---|---|---|---|---|---|
| | Self-employed | Employees | Self-employed | Employees | Self-employed | Employees | Employees |
| *Tourism industries:* | Abs. | Abs. | Abs. | Abs. | Abs. | Abs. | Abs. |
| 551 Hotels, etc.<br>552 Restaurants, etc.<br><br>601 Railways<br>602 Other land transport<br><br>611 Sea/coastal water transport<br>612 Inland water transport<br><br>621 Scheduled air transport<br>622 Non-scheduled air transport<br><br>6304 Travel agencies, etc.<br><br>7111 Car rental<br><br>921 Motion picture, etc.<br>923 Libraries, etc.<br>924 Sporting/recreational act.<br><br>Other tourism-related industries, of which:<br>……..<br>……..<br>……..<br>…….. | | | | | | | |
| Total tourism-related industries | | | | | | | |
| Total economy | | | | | | | |

*Source:* OECD Tourism Committee.

Table 13. **General indicators and tourism ratios from the TSA**

| | Total number of jobs (Table 1) (1) | Total number of FTEs (Table 1) (2) | Tourism ratios (TSA) (3) | Tourism share employment (1 or 2)*3 | | Gross output per job (TSA) | Full-time/ part-time ratio | Employed/FTE ratios (see Tables 1 and 12) | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Jobs | FTEs | | | Self-employed | Employees |
| *Tourism industries:* | Abs. | Abs. | Abs. | Abs. | Abs. | | | | |
| 551 Hotels, etc.<br>552 Restaurants, etc. | | | | | | | | | |
| 601 Railways<br>602 Other land transport | | | | | | | | | |
| 611 Sea/coastal water transport<br>612 Inland water transport | | | | | | | | | |
| 621 Scheduled air transport<br>622 Non-scheduled air transport | | | | | | | | | |
| 6304 Travel agencies, etc. | | | | | | | | | |
| 7111 Car rental | | | | | | | | | |
| 921 Motion picture, etc.<br>923 Libraries, etc.<br>924 Sporting/recreational act. | | | | | | | | | |
| Other tourism-related industries, of which:<br>……..<br>……..<br>……..<br>…….. | | | | | | | | | |
| Total tourism-related industries | | | | | | | | | |
| Total economy | | | | | | | | | |

*Source:* OECD Tourism Committee.

Table 14. **Establishments by size-class (annual average or point in time) and deaths/births (percentages)**

| | Total (Table 1) | Size class by number of employees | | | | 0-9 employees | | 10+ employees | |
|---|---|---|---|---|---|---|---|---|---|
| | | 0 | 1-9 | 10-99 | 100+ | Births | Deaths | Births | Deaths |
| *Tourism industries:* | Abs. | Abs. | Abs. | Abs. | Abs. | % | % | % | % |
| 551 Hotels, etc. | | | | | | | | | |
| 552 Restaurants, etc. | | | | | | | | | |
| 601 Railways | | | | | | | | | |
| 602 Other land transport | | | | | | | | | |
| 611 Sea/coastal water transport | | | | | | | | | |
| 612 Inland water transport | | | | | | | | | |
| 621 Scheduled air transport | | | | | | | | | |
| 622 Non-scheduled air transport | | | | | | | | | |
| 6304 Travel agencies, etc. | | | | | | | | | |
| 7111 Car rental | | | | | | | | | |
| 921 Motion picture, etc. | | | | | | | | | |
| 923 Libraries, etc. | | | | | | | | | |
| 924 Sporting/recreational act. | | | | | | | | | |
| Other tourism-related industries, of which: | | | | | | | | | |
| …….. | | | | | | | | | |
| …….. | | | | | | | | | |
| …….. | | | | | | | | | |
| …….. | | | | | | | | | |
| Total tourism-related industries | | | | | | | | | |
| Total economy | | | | | | | | | |

*Source:* OECD Tourism Committee.

Table 15. **Summary table**

| | Self-employed | | | Employees | | | | | | | | H. Tourism share jobs (Table 13) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A. Jobs Total (Table 1) | B. FTEs Total (Table 12) | C. Mixed income (TSA) | D. Jobs | | E. FTEs | F. Annual average hours of work | | | G. Gross annual earnings | | |
| | | | | Full-time (Table 3) | Part-time (Table 3) | Total (Table 12) | Total (Table 4) | Usual hours (Table 4) | Over-time (Table 4) | Gross annual wages (Table 5) | Compen-sation (Table 12) | |
| *Tourism industries:* | Abs. | Abs. | Abs. | Abs. | Abs. | Abs. | Abs. | Abs. | Abs. | Abs. | Abs. | Abs. |
| 551 Hotels, etc.<br>552 Restaurants, etc. | | | | | | | | | | | | |
| 601 Railways<br>602 Other land transport | | | | | | | | | | | | |
| 611 Sea/coastal water transport<br>612 Inland water transport | | | | | | | | | | | | |
| 621 Scheduled air transport<br>622 Non-scheduled air transport | | | | | | | | | | | | |
| 6304 Travel agencies, etc. | | | | | | | | | | | | |
| 7111 Car rental | | | | | | | | | | | | |
| 921 Motion picture, etc.<br>923 Libraries, etc.<br>924 Sporting/recreational act. | | | | | | | | | | | | |
| Other tourism-related industries, of which:<br>……..<br>……..<br>……..<br>…….. | | | | | | | | | | | | |
| Total tourism-related industries | | | | | | | | | | | | |
| Total economy | | | | | | | | | | | | |

*Source:* OECD Tourism Committee.

*Chapter 12*

# CONCLUSIONS AND AREAS FOR FURTHER RESEARCH

This book presents a first step in the development of a comprehensive employment module. Improvements can still be made. However, such a module will improve the availability of reliable employment, labour or human resource data for characteristic tourism industries. These data will provide the means to counteract the stereotypes and doubtful estimates circulating in this field, and are essential for the further development and innovation of the tourism industry in general. An integrated employment module will improve the comparability of data both within and between countries. This latter objective is, however, still far away, as definitions, methods and sources used in this field differ widely from one country to another. A balance has to be found between what is ideal and what is feasible, not only in terms of concepts and definitions, but also in the desired degree of detail. Since tourism does not fit into a "standard" statistical structure, the tendency is to require a very high level of detail in defining tourism-related topics. Many countries, however, simply do not have the resources to produce statistical data at such a high level of detail. This means that caution is required when comparing tourism-related employment data across countries.

Linking the employment module to the TSA represents a significant step forward, broadening the analytical capabilities of both the employment module and the TSA, and providing a solid statistical framework for further expansion. However, the employment module should also be able to stand on its own, so that it is in no way constrained by the timeliness of the TSA. This will also allow greater emphasis to be placed on employment as a social phenomenon.

"Counting jobs or people employed" from the supply side is only one side of the coin. In addition to the fact that it is difficult to define the tourism industry through the narrow set of industries of the ISIC classification, a supply-side approach has other limitations. For example, this method:

- Neglects so-called secondary effects, such as indirect and induced[83] employment effects of the expenditures of visitors. This can result in an underestimation of tourism-related employment. Some indication of these effects can, however, be derived from the TSA tables.
- Provides little direct insight into the responsiveness of employment growth to factors such as an increased number of visitors. Effects must always be related back to the expenditures of these visitors.

Demand-side approaches, such as simple expenditure methods, input/output methods, multiplier models or econometric models, recognise the relation between tourism expenditures and the impacts of these expenditures on tourism-related employment. These approaches are better suited for analysis of the impact of tourism flows and expenditures on, *inter alia*, employment levels, the importance of specific industries for tourism and thus for tourism-related employment, input/output relationships between industries (*e.g.* indirect employment), effects on tourism revenues received by governments

83. Again, the concepts of indirect and induced are used here in the context of employment. This does not correspond exactly to the way these concepts are used in the TSA (See Appendix A of the TSA).

and imports and exports of tourism services. In addition to the fact that the results of these methods are sensitive to the assumptions made and the availability of data, the major deficiency of demand-side approaches is that they cannot provide any information about the composition of tourism-related employment. For that kind of analysis, a supply-side driven method is an absolute necessity.

The objective here is to use both approaches simultaneously, matching them as far as possible through the linkage between the employment module and the TSA. The TSA provides better insights into the effects of tourism expenditures on levels of direct and indirect employment and the importance of tourism-related industries (*e.g.* tourism ratios) seen from the demand side. The link between the two systems allows this information to be translated back to the supply-side approach of the employment module, which is more suited to an overview of employment profiles and structures of these industries.

Improvements can always be made to any method used. Possibilities for enhancing the usefulness of the current employment module include:

- Improving the *concepts and definitions used* and the comparability of these concepts and definitions across countries, especially in the case of topics such as jobs, earnings, income, FTEs, hours of work and labour cost. Concepts and definitions often differ widely across countries and even within countries. This can mean that in some cases only the common core of an employment topic should be taken into account as a first step.

- Improving the *coherence of the framework* on the basis of "the job" and related topics, such as hours of work, earnings and labour costs, as the central variables. This would substantially strengthen the connection with the TSA. By linking data on jobs with data on people employed, further integration can be achieved between the more economic and the socio-demographic characteristics of tourism-related employment, including the inclusion of occupational groups. Also, the ideas underlying the concept of Social Accounting Matrices (SAM) can be further incorporated.

- Improving the definition/delimitation of tourism from the supply-side perspective, by including *more industries at the four-digit level*. A four-digit classification would improve the link with the TSA. Disaggregation to a four-digit industry level using the ISIC classification should follow the selection made in the TSA to the extent possible. However, the quality of the data remains an essential precondition.

- Further developing the *occupational approach* would provide a different, but very useful, view of tourism-related employment. This approach should be linked with the approach on the basis of economic activities.

- Adding more *objects of description and characteristics* and determinants of tourism-related employment, *e.g.* earnings and labour costs, vacancies, labour conditions and mobility, including in- and outflow of people working in the tourism-related industries[84] and informal labour. In addition, better indications of the employment effects of seasonality or the specific employment situation in SMEs would provide useful information. Furthermore, the use of business registers as a repository of information on businesses should be considered (*e.g.* size, births/deaths and employment). Also, more multi-dimensional tables or cross-sectional data could be added, accuracy constraints permitting.

- Supplying *time-series* and developing (short-term) indicators.

84. This could be based on longitudinal or retrospective research or by using social security numbers as a coupling variable when using different data sources.

- Moving from annual to *quarterly data* for a core set of variables. Because more reliable quarterly data is available, employment of employees is a better starting point than self-employment. In the case of quarterly data, seasonal adjustment is also an important issue.

- Including *more qualitative aspects of employment*, such as substitution of human labour by technology, new multiform labour structures and work organisations, motives, recruitment strategies and availability/unavailability of skilled labour (see also occupational approach). In general, data collection on all *context variables* should be improved.

- Making more elaborate analysis of the different tourism (sub) labour markets, using a mix of macro and meso methods.

Although significant progress has been made, a major problem in the area of employment in general, and tourism-related employment in particular, is the differences in concepts, definitions and methods applied both across and within countries. These concepts and definitions are often tied to data collection methods and specific objectives of surveys. Comparability problems would be partly eliminated if all data were derived from a single source, for example a household or labour force survey. However, this would entail the loss of other essential information. In presenting tourism-related employment data, it is essential to clarify the industries included and the concepts and definitions used. Using different methods and definitions can lead to quite different results.

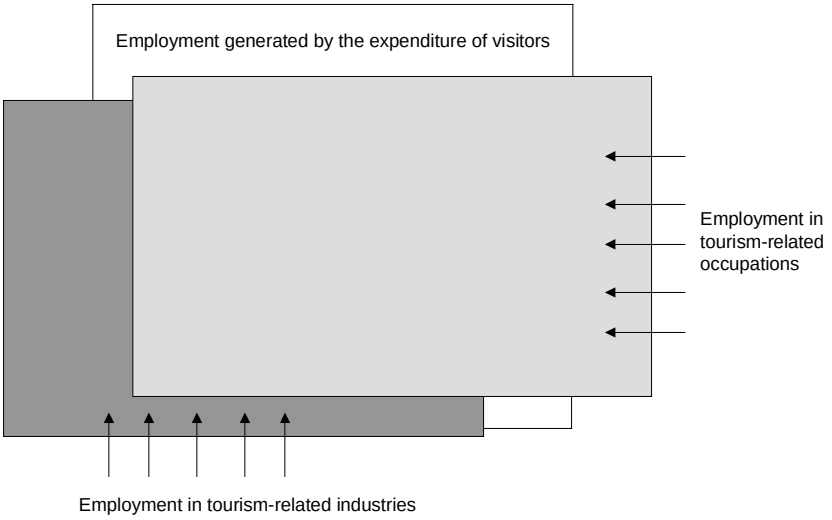
To improve data comparability, it is important to strengthen (inter)national co-ordination. The OECD strongly advocates co-operation with other international organisations, such as the European Commission (notably Eurostat), ILO, WTO-OMT, and with Member countries. The objective should be to design a common employment module. The development of statistical information should, however, also be in line with users' needs, thus contributing more effectively to policy making and the development of tourism in general.

*Appendix 1*

## AN ALTERNATIVE APPROACH USING A CLASSIFICATION OF OCCUPATIONS

To obtain greater insight into employment related to tourism, an alternative approach could be used, *i.e.* a distribution of the employed by occupation, using the International Classification of Occupations (ISCO-68 or ISCO-88).[85] If the ISIC classification is used, all persons working in a given establishment are classified under the same industry, irrespective of their occupations. Using the ISCO classification, on the other hand, people working in similar types of work are grouped together, irrespective of where the work is performed (Figure 8). Examples of tourism-related occupations include: cooks, managers of catering and lodging services, bartenders, taxi drivers, stewardesses, airline pilots, travel counsellors, cleaners and bus drivers. Occupation data are usually collected through household or labour force surveys. Occupations can also be characterised by variables such as gender, age, salary, nationality, etc. An important policy issue could involve matching the number of people in specific occupational groups on the demand side with the supply side (by training and education schemes, for example). Other topics could include, for example, relating occupations to earnings, mobility and size of enterprise.

Figure 8. **An industrial and occupational approach to tourism-related employment**




85. See ILO, *International Standard Classification of Occupations (ISCO-88*), Fourteenth International Conference of Labour Statisticians 1987, Geneva, 1990.

For practical reasons, the occupational approach is left aside here. Further theoretical development is necessary. Potential problems include, for example, coding, degree of detail and reliability of available data and identifying the occupations that are of particular importance to tourism can pose problems, although this could be partly solved by linking to the selected set of characteristic tourism industries through the classification of industries (ISIC), provided in most household or labour force surveys. In that case, the occupational approach is simply an elaboration of the supply-side method described in this module. An additional advantage of this approach is that the totals for occupational groups can be brought in line with the totals presented on the basis of the ISIC classification. If the intention is to go beyond the selected tourism industries, then the main problem remains the identification of typical tourism occupations. This is the identical definition/delimitation problem as that encountered with selecting characteristic tourism industries from a supply-side perspective. Also, it remains unclear which proportion of occupational jobs are generated by the expenditure of visitors and which by the expenditure of non-visitors. Nevertheless, an occupational approach to tourism-related employment is an essential addition to the industrial approach.

*Appendix 2*

## SOURCES OF EMPLOYMENT DATA

In general, employment data can be obtained from three main sources, namely:

- ***General household surveys***, such as employment or labour force surveys.[86] These surveys are a source of regular information on both the total labour force (employed plus unemployed persons) and the total inactive population. The data collected generally relate to employment during a specified brief period, either one week or one day. The statistical unit is the *person or household*. Depending on the country, these surveys are conducted on a monthly, quarterly, six-monthly or annual basis. This source covers the number of people employed, the number of jobs and all selected variables, although data on earnings and income are often not collected. The data usually provide the possibility to link to the ISIC classification of industries.[87] At the least, this source is needed for the number of (jobs of the) self-employed[88] and the number of jobs on the side. In addition to labour force surveys, countries often conduct other social surveys[89] which contain employment topics. The sample size of these surveys is usually much smaller and the periodicity is less frequent.

- ***Establishment surveys***. This source provides data on the number of workers on establishment payrolls for a specified period or working day. Sometimes, these surveys only cover a specified set of establishments (*e.g.* having more than a certain number of employees or having an annual output of more than a certain value). Usually these surveys relate to a sample of establishments and are conducted on a quarterly, annual or sometimes a monthly basis. *Establishments* or local kind-of-activity units are used as the statistical unit, mostly related to a business register based on an ISIC classification. Within the establishment, however, data is collected on *jobs of employees* (not people employed). Establishment surveys can generally be divided into two groups. The first group of surveys collects data on employment (jobs), earnings and hours of work. The second group collects data on labour cost. This source of information covers the number of jobs of employees and usually the selected variables [see Chapter 9, page 147, items a, b, e (partly), f, h and i]. Other business or industry surveys are used to collect data on other aspects of the production process, such as the structure and size of the output, the use of products, business revenues and expenses and value added, including wages and salaries and employers contributions. These industry surveys are often also used to collect limited employment data on the basis of jobs (*e.g.* full-time/part-time and temporary labour). Often, the national accounts use the employment data from these surveys, rather than data from employment statistics.

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86. Topics that are usually covered are, for example, employment, unemployment, hours of work, duration of employment/unemployment, industry, occupation, status in employment, level of education, permanency of job and usual activity and also, but less frequently, underemployment, wages and income, discourage job seekers, occasional workers and informal sector.

87. The way this variable is coded is not always of a good quality (obtained from the individual person and not directly from the employer) and therefore does not always coincide with the coding of the same variable in establishment surveys.

88. For the self-employed, there is usually less employment information available. This can be the effect of, for example, less frequently available sources, less accurate sources and less information on income (components).

89. Income distribution, spending and living conditions, for example.

- ***Social insurance statistics and administrative registrations***. This source covers the working population protected by health, accident or unemployment insurance schemes. Persons working a very short time or receiving very low pay are sometimes excluded. The statistical unit is a *job of an employee or an establishment*. The advantage of registrations is that data is already (electronically) available and can be re-used without the extra burden of surveying. However, the problem with registrations is that they are set up for administrative and not for statistical reasons. Therefore registrations are mostly used as an additional source of information. This source usually covers the selected variables [see Chapter 9, page 147, items a, b, e (partly), f, g and i]. These statistics are often the only source for employment topics such as inbound (border and seasonal) labour.

In general, the main strength of household surveys is that they provide a full picture of employment (jobs and people employed; employees and self-employed), although data on income and earnings is usually limited or absent. Furthermore, these surveys are the best source of information with respect to the socio-demographic characteristics of the workforce, such as age, gender, education and nationality. Furthermore, they can be used to make a link between jobs, people employed and occupational groups. A drawback of these surveys is that data on hours of work and earnings are often described less accurately.[90] This also occurs when data are disaggregated into smaller and smaller subgroups. The main sources of data on jobs of employees, (paid) hours of work, earnings and labour cost are establishment surveys. Another advantage of establishment surveys is the availability of information on size and other characteristics of the establishment.[91] A major drawback with these surveys is the incomplete coverage of employment, especially relating to the self-employed but also for "smaller" jobs. For data on the self-employed, household surveys have to be used. For data on earnings related to labour of this group, there is not usually a good source available.[92] This is because self-employment generates a mixed income rather than a clearly defined salary or wage related to a number of hours worked. In addition to the problems caused by using mainly administrative rather than statistical concepts and timeliness, incomplete coverage is the main disadvantage of register-based data. For data on occupational groups, household or labour force surveys are usually the only source of information.

In some countries, *labour accounting systems* have been developed. This is an integrated system of labour and employment statistics, based on information drawn from one or more of the above sources. In the statistical integration process, different employment phenomena such as people employed, jobs, hours of work, earnings and labour cost, are confronted on the basis of interrelationships. This source usually covers the number of people employed, the number of jobs and all selected variables, although often at a less detailed level than is desirable here.[93]

In addition to statistics covering the labour utilisation, different sources of information are available for other aspects of employment, such as vacancies, labour conditions (*e.g.* collective agreements or minimum wages), education and vocational training, strikes, unionisation and demographics.

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90. For example, many people do not have the exact information so they give an approximation and interviews are often conducted by proxy.

91. The availability of regional data means that it is also possible to use Geographic Information Systems (GIS).

92. See registrations based on taxes or other, often smaller, socio-economic statistics.

93. Within this framework, it is also possible to think of linking data of labour force, establishment, demographic and other relevant surveys on the basis of, for example, social security numbers or addresses, using imputation or other techniques to fill in the missing data. This can also be done on a reduced basis by linking the more economic characteristics of jobs with the characteristics of people employed (also directly through labour force surveys).

A useful source of information is provided by *business registers* (file or database). This source provides information on the size (*e.g.* by the number of people employed or by output) of an enterprise/establishment and regional information, but foremost it provides possibilities for statistical co-ordination between the different surveys, thus opening up the possibility of linking all kinds of basic data to macroeconomic accounts such as the TSA.

Often, (employment) data can be collected through *representative bodies*; this is frequently the case for data for the accommodation, food and beverage industries or for travel agencies. These data are often very detailed and cover all selected variables. However, they do not always match the official statistics, rendering data comparisons difficult.