Tourism-related employment: importance and its measurement

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1. Introduction

Tourism is a people's industry in all its aspects. Not only because the core of the tourism industry is hospitality, but also because the local population is often part of the experience of visitors. From a socio-economic perspective, employment is important for the income, personal development and self-esteem of people. It also contributes greatly to the development of regions. Therefore, the quality of the workforce is a key indicator for the functioning of an industry. According to the World Tourism Organization (UNWTO) about 10 percent of the world's workforce is directly and indirectly related to tourism (UNWTO, 2018). Based on this, one might expect that tourism-related employment is high on the agenda of the industry and policy makers. However, the attention for employment in the tourism industry has ebbed away somewhat in the last two decades. For example, in the Netherlands in the 90's every two years research was carried out about the state of affairs of the employment situation in the tourism industry, often supplemented with research into the alignment between education programmes (qualifications) on the one side and the needs of the tourism industry on the other. However, this kind of research is hardly ever done anymore. Therefore, the main goal of this paper is to reinforce the attention for tourism-related employment again. Not least because of the underestimated effects of the quickly advancing digitalization on employment.

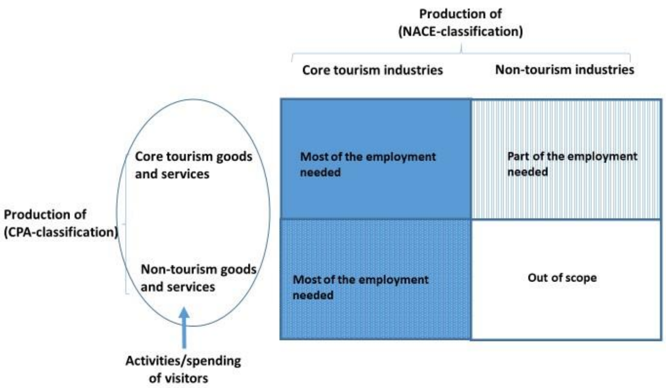
To do so, this paper, first of all, looks how tourism-related employment can be measured (par. 2). This is not a straight forward exercise. Secondly, the paper presents some basic tourism-related employment figures (par 3) from the Netherlands, compared to the EU-28. And, finally, the paper discusses, in general terms, the effects of digitalization on the employment in the tourism industry (par. 4).

2. Measurement of tourism-related employment

The demand for tourism goods and services determines how much of these products has to be produced. To produce these products also people need to be employed. Employment then is defined as the total demand for labour as a production factor. Subsequently, surveys can measure, for example, how many people have a job in an specific industry and what the characteristics of the workforce are. However, measuring tourism-related employment is not straight forward. The main problem is that tourism is not an unambiguous industry, like agriculture, manufacturing or education. The tourism industry is not defined as such in standard classifications used in statistics. It is a collection of industries, which serve visitors when they travel outside their usual environment. These industries range from, for example, travel agencies, transportation and accommodation services to food and beverage services, retail trade and information services. This paragraph deals with some of the issues related to the measurement of tourism-related employment.

When one sees figures about tourism-related employment, firstly, it should be realised that there are different types of employment figures with different scopes, that is: direct, indirect and induced employment. Direct employment is generated directly from the consumption or spending of visitors and government. This involves, for example, the travel agent, the taxi driver, the receptionist and manager of an hotel, who (almost) directly deal with the visitor. Most figures that are published on tourism-related employment are based on direct employment. That also accounts for the figures in the next paragraph of this paper. The disadvantage of direct employment figures is that they only partially reflect economic reality. For example, the food a visitor eats in a restaurant is produced by the agriculture industry and brought to the restaurant by the transportation industry. So, a part of the job of a farmer and a driver is indirectly generated by the activities of visitors. The main reason that indirect employment is often not taken into account is that they cannot directly be derived from basic statistics. One needs a model about which industries supply (down the value chain) to which other industries and which part of that indirect employment is generated based on the activities of visitors. Without going further into detail, the model and the tables of the National Accounts can be used for this. These tables, the supply and use tables, provide insight into the (financial) relationships between industries in the economy of a country. Based on these tables so-called tourism multipliers can be calculated. Translated to employment, a tourism multiplier expresses the number of indirect employed persons for each of direct employed persons. So if a tourism employment multiplier is, for example, 1,50 then for every person working directly in the tourism industry, 1,50 person is indirectly employed in other industries, which supply goods and services to the tourism industry. It is clear that trends like outsourcing and subcontracting can effect the size of direct and indirect employment figures, without changing the overall effect of tourism activities on employment. Another reason why indirect employment is not always taken into account is that it makes it more difficult to compare these figures with other industries in the National Accounts. In that case also indirect employment effects of these other industries should be included. Finally, employment is also generated by the spending of people, who earn their money in the tourism industry. This is called induced employment. Also here multipliers can be calculated.

Figure 1. Scope of tourism-related employment



A second issue of tourism-related employment is that the consumption of visitors and government do not generate all the employment in the industries which relate to tourism. Transportation services, like trains or busses for example, are mostly used by locals for travelling to and from their work or school. So only a part of the employment of transportation services can be assigned to the consumption of visitors and therefor tourism. That also accounts even more for, for example, the retail trade. Even hotels will be used for weddings or meetings of locals. So, the employment in some tourism-related industries is for their existence almost totally dependent on the consumption of visitors (e.g. accommodation services) and some only for a small part (e.g. retail trade). To determine which part of the employment of industries can be assigned to tourism, again the National Accounts tables can be used. On the basis of the total production of an industry and the total consumption (e.g. spending) of visitors on goods and services in that industry a so-called tourism ratio can be calculated. These tourism ratios can subsequently also be applied to the employment in an industry. If in an industry, for example, employs 100 persons and the tourism ratio (based on the tourism consumption part of the total production) is 0,72, then 72 employed persons can be assigned to tourism-related employment. If this is done for all tourism-related industries (starting from the activities or spending of visitors), the sum of all the tourism-related employment in these industries is then the total direct employment in the tourism industry. This method is much more accurate than simply adding up all the employment in a set of selected tourism-related industries. This last method leads either to overestimation if all the employment in selected industries is taken into account which serve visitors, totally or partly. Or underestimation if only the employment in some core tourism-related industries is taken into account.

Until now, the discussion has focused on measurement of the size of tourism-related employment, directly or indirectly generated. The question that goes with this, is by which variables the size of tourism-related employment is usually expressed? Mostly, the number of people employed is used, that is employers as well as employees. People employed have a job. A job is an employment contract between a person and an organization that indicates what kind of work must be performed with a (financial) reward in return. Some people will have more than one job, which is not unusual in tourism. So, there are more jobs than persons employed. Besides that, jobs do not have to be occupied. In that case there is a job vacancy. Also not uncommon in tourism, not everybody works full-time: people can only work a few hours per week. To be able to make good comparisons, the size of employment can also be expressed in labour volumes or full-time equivalents. Labour volumes are calculated as all hours worked by persons employed converted into full jobs. So one should be aware that the size of tourism-related employment can be expressed in one of these three variables, people employed (employees and employers), jobs and labour volumes. These different variables can lead to different numbers and trends.

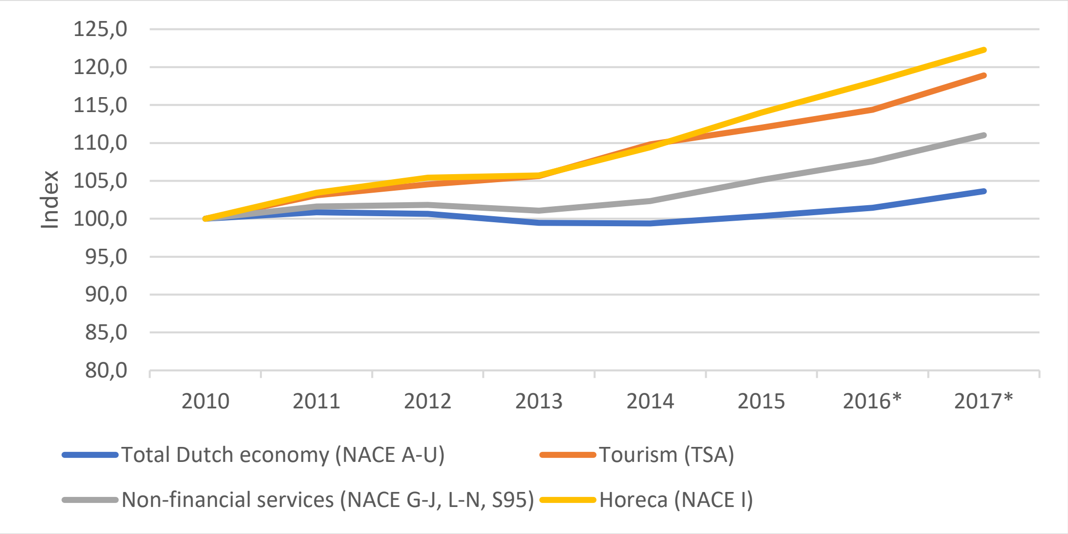
Finally, people employed and jobs have characteristics. For example age, gender and level of education or full-time and part-time or permanent or temporary jobs. The measurement of characteristics of jobs and people employed in tourism-related employment cannot be treated with the same method used for the size of tourism-related employment. If only a part of an industry serves visitors, one simply does not know which person (and thereafter characteristics) in that industry much be assigned to tourism-related employment, because most people serve visitors as well as locals. Therefore, figures on the characteristics of people employed or jobs in tourism-related employment can only be expressed on the basis of total industries, which are designated as tourism-related industries. In itself this is not a problem, because policy will be directed to the whole industry. So, one has to be aware that figures on characteristics are based on the employment in selected tourism-related industries and not on a part of the employment related to tourism.

3. Some basic figures on tourism related employment

This paragraph presents some basic figures on the size and characteristics of tourism-related employment in the Netherlands. The figures on the size of the employment are based on the National and Tourism Satellite Accounts of the Netherlands and are from 2010-2017. These figures concern direct employment. The figures on characteristics are based on a publication of Eurostat (Eurostat, 2017) and are from 2014. These figures only cover a part of the tourism industry, that is: NACE H51 (Air transport), I55 (Accommodation services) and N79 (Travel agencies, tour operators etc.) The figures are also not new, but the advantage is that a comparison can be made with the EU-28. Besides that, experience shows that characteristics in employment do not change that fast. The main conclusions will, grosso modo, also be valid for the 2017. The figures of Eurostat are based on the Labour Force Survey and the Structural Business Statistics (SBS) supplied by member states.

In 2017 tourism-related activities in the Netherlands, inbound and domestic, generated employment for 654 thousand people, employees as well as employers (TSA-figures). That is 7,2 percent of all persons employed in the Dutch economy and 14,1 percent of all the persons employed in the Non-financial services sector (NACE G-J,L-N and S95). In jobs and labour volume the tourism industry accounts for 761 thousand jobs and 455 thousand fte's. Although one should be careful with making comparisons, 654 thousand people employed is more than in industries such as Construction (NACE F – 457 thousand), Education (P – 526 thousand) or Human Health Services (NACE 86 – 568 thousand).

Figure 2. Number of persons employed by industry, 2010-2017 (index 2010=100).



Source: Statistics Netherlands, 2018

From the 654 thousand people employed in the Dutch tourism industry most (65 percent) were active in the Horeca (Accommodation and Food and beverage services – NACE I). Travel agents, tour operators etc. (NACE N79) accounted for about a small 4 percent of people employed in the tourism industry. That is comparable with people employed in Air transportation services (H51, including freight transportation). In the period 2010-2017 the Dutch economy grew with 405 thousand jobs. In the same period, thereof the tourism industry created 120 thousand more jobs.

Since 2010 the number of people employed in the tourism industry grew with 18,9 percent. For the Horeca (Accommodation and Food and Beverage services - NACE I) alone the growth was even higher: 22,3 percent. In the same period the total employment in persons in the total Dutch economy grew with 3,6 percent. For the Non-financial services sector this was 11 percent.

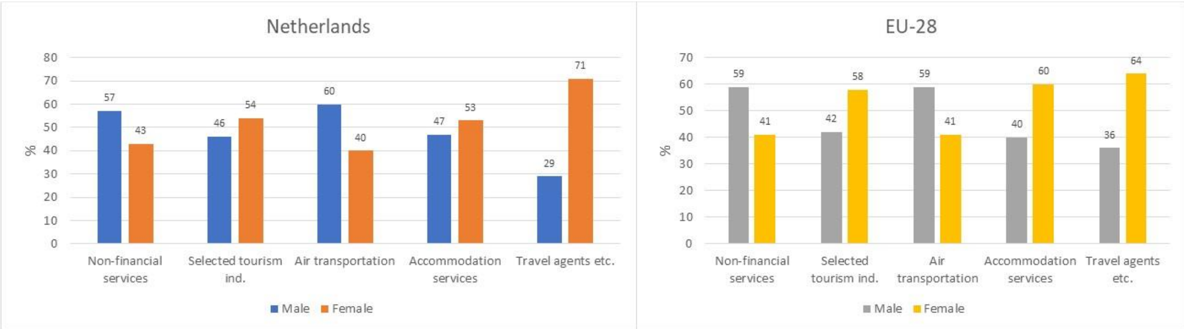
This shows that, at the moment, the tourism industry is one of the most important growth sectors within the Dutch economy. See Figure 2. It is expected that this growth rate will sustain for the coming years, because the current development of international tourism ("arrivals") even outgrowths the forecast of the UNWTO, that is an average growth of 3,3 percent per year until 2030.

Compared to the Non-financial services sector, selected tourism industries (H51, I55, N79) in the Netherlands provide more work for women and the young. In 2014 54 percent of the workforce in selected tourism industries were women, relative to 43 percent in Non-financial services. This last figure is comparable to the proportion of women working in the total Dutch economy. Especially Travel agencies etc. is an industry with a high portion of female workers (71 percent). The EU-28 provides a similar picture. See Figure 3.

The workforce in selected tourism industries in the Netherlands is relatively young compared to the Non-financial services sector. It supplies more work to the age group of 15-24. That accounts especially for Accommodation services. Compared to the figures of the EU-28, the workforce in selected tourism industries in the Netherlands is somewhat younger, especially again in the

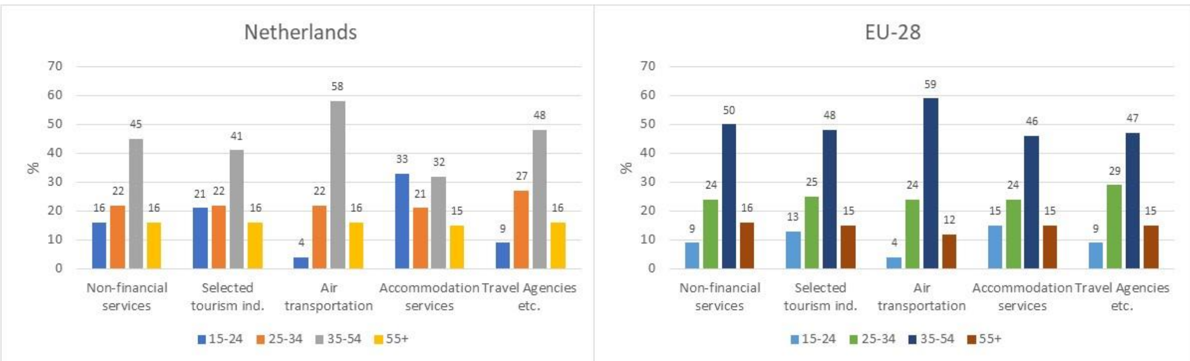
Accommodation services. In all the industries the workforce of 55+ is around 15 percent. See Figure 4.

Figure 3. Distribution of the workforce (persons employed) by gender and by industry, 2014.



Source: Eurostat, 2017

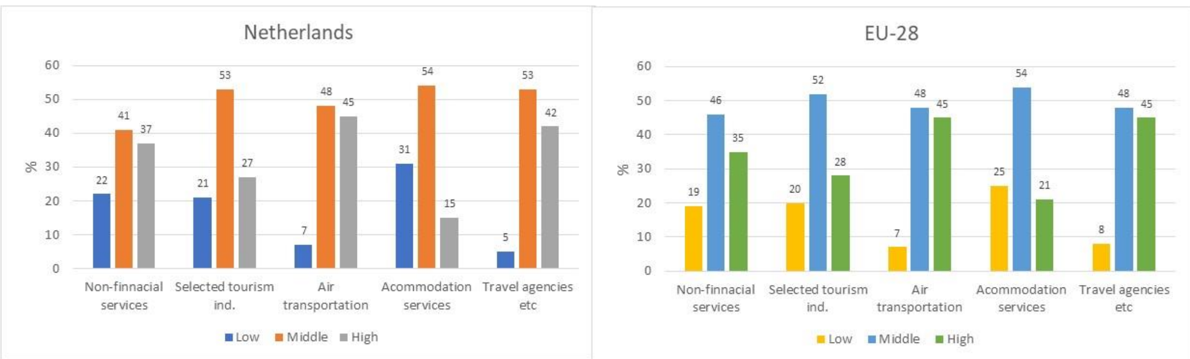
Figure 4. Distribution of the workforce (persons employed) by age group and by industry, 2014.



Source: Eurostat, 2017

Selected tourism industries in the Netherlands provide, relatively seen, <u>more work for people with low and middle skills:</u> 3 out of 4 persons employed were low or middle skilled in 2014. For the Non-financial services sector this distribution is 3 out of 5. Especially in the Accommodation services the number of low and middle skilled people is high: 4 out of 5 persons are low and middle skilled. As expected, in Air transportation and Travel agencies etc. the level of education of the workforce is higher. Figures are comparable with the figures of the EU-28. See Figure 5.

Figure 5. Distribution of the workforce (persons employed) by education and by industry, 2014.

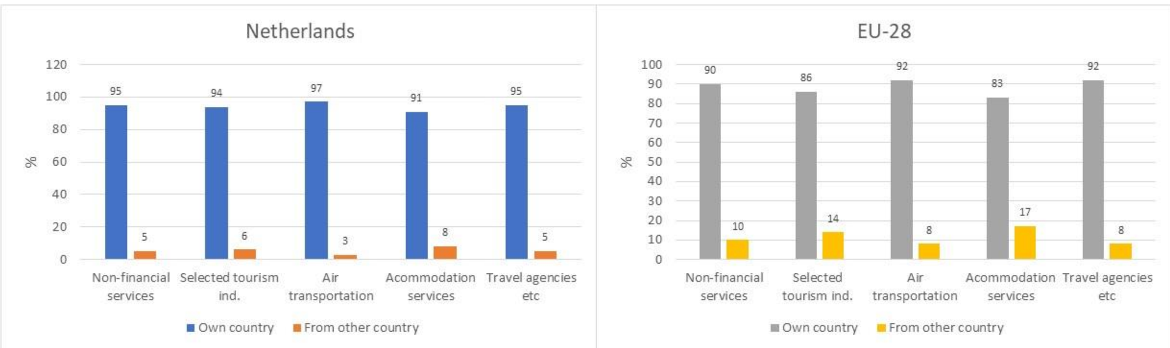


Source: Eurostat, 2017

In the Accommodation service in the Netherlands relatively <u>more foreign people</u> are working compared to the total Non-financial services sector. That is comparable with the EU-28. However, across all sectors the percentages of foreign workers in the EU-28 are higher than in the Netherlands. See Figure 6.

Jobs in selected tourism industries in the Netherlands look to be less stable than in the Non-financial services sector: relatively more people with temporary and part-time jobs, which they also hold shorter. About 30 percent of the workforce in selected tourism industries work in a temporary job. In the Accommodation services this is even higher: 45 percent. See Figure 7. The same picture can be seen in the distribution of part-time and full-time labour. There are also more part-timers working in selected tourism industries (56 percent) than in the Non-financial services sector. That especially accounts for the workforce of the Accommodation services. See Figure 8. Compared to the EU-28, much more people in the Netherlands work part-time and the proportion of temporary workers, the flexible layer of the workforce, is also much bigger. This account for all sectors discussed here, but it accounts especially for the Accommodation services. The time people hold their job in selected tourism industries is comparable with the Non-financial services sector, but again the Accommodation services stand out with 44 percent of the people holding their job for less than 2 years. The figures here are similar with the figures of the EU-28. See figure 9.

Figure 6. Distribution of the workforce (persons employed) by country of origin and by industry, 2014.



Source: Eurostat, 2017

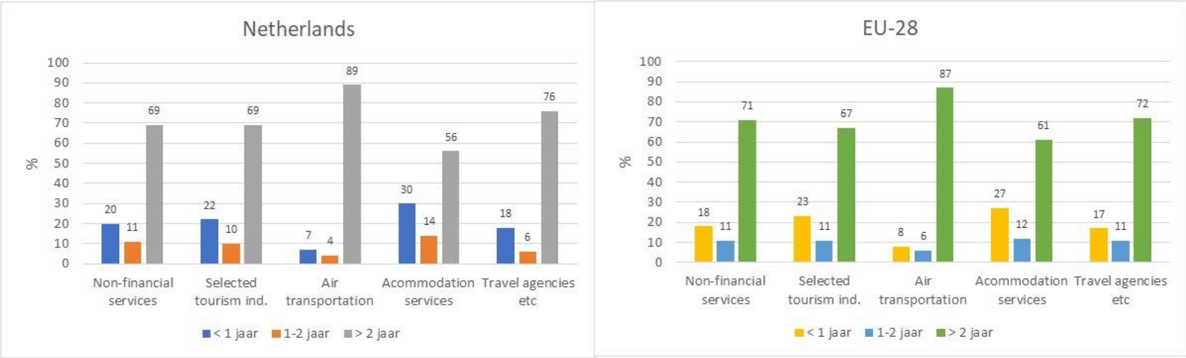
Figure 7. Distribution of the workforce (persons employed) by type of job and by industry, 2014.

Source: Eurostat, 2017

Figure 8. Distribution of the workforce (persons employed) by part-/full-time and by industry, 2014.

Source: Eurostat, 2017

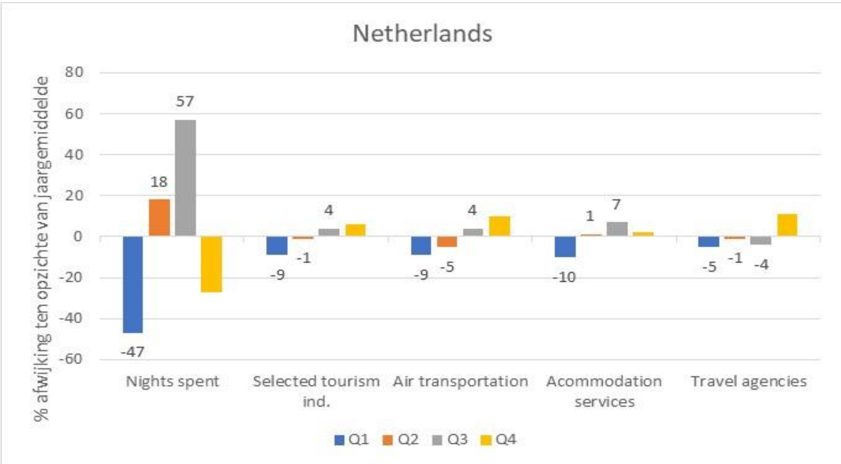
Figure 9. Distribution of the workforce (persons employed) by time in job and by industry, 2014.



Source: Eurostat, 2017

Tourism is a seasonal industry. Therefore the demand varies through the year. This is shown in Figure 10, with the nights spent in tourism accommodations as an indicator for the seasonal fluctuations in demand for tourism. As expected the number of nights spent in the third quarter are clearly higher than in the first and fourth quarter of the year**.** <u>These seasonal fluctuations in nights spent can, however, only partly be seen in seasonal fluctuations in employment.</u> Every industry has its own specific patron.

Figure 10. Seasonal variations in night spent and workforce (persons employed) by industry, 2014.

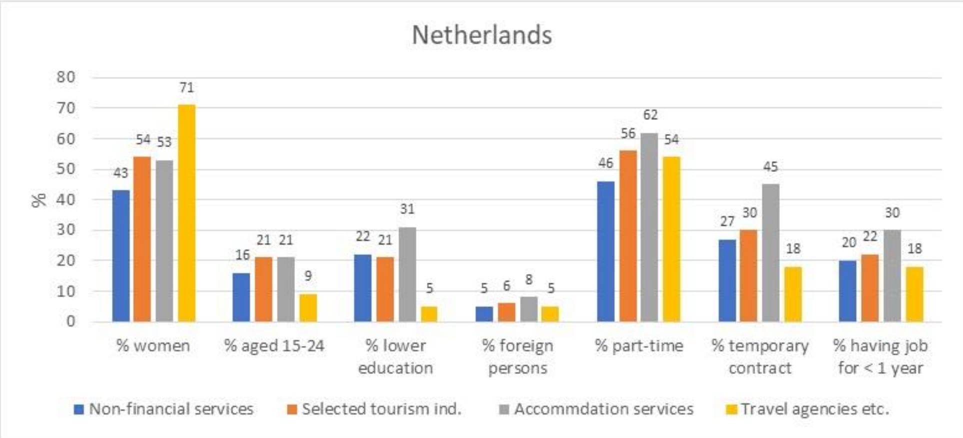


Source: Eurostat, 2017

In this section a number of basic figures was presented on tourism-related employment in the Netherlands. However, the available data offer more possibilities. More tourism-related industries can be examined, for example the Food and beverage industry, of which the characteristics of employment are probably similar to those of Accommodation services. It is also important to look at, for example, wages, labour costs and labour productivity. The figures of Eurostat show that hourly earnings and labour costs in the selected tourism industries and especially the Accommodation services are below the average for the economy as a whole, although in the Netherlands these figures are higher than the EU-28-average. Also the size of the companies where people work can be considered. Developments in certain variables (e.g. temporary work, part-time/full-time) is another important issue. This is especially important to monitor the trend towards a division in labour with a growing flexible layer of independent workers, of which employment conditions are lower than those with a permanent job. These are also important indicators for the Sustainable Development Goals (nr 8) where employment, decent work for all and social protection are promoted for the 2030 agenda. Furthermore, It is important to look at the alignment of the supply of labour by tourism-related education on the one hand and the demand of the industry (e.g. also the (expected) job vacancies) on the other. And finally, for the future, the effects of digitalization on tourism-related employment should be accounted for. This is the subject of the next paragraph.

Figure 11 presents a summary of the results presented above.

Figure 11. Summary of characteristics of persons employed by industry, 2014.



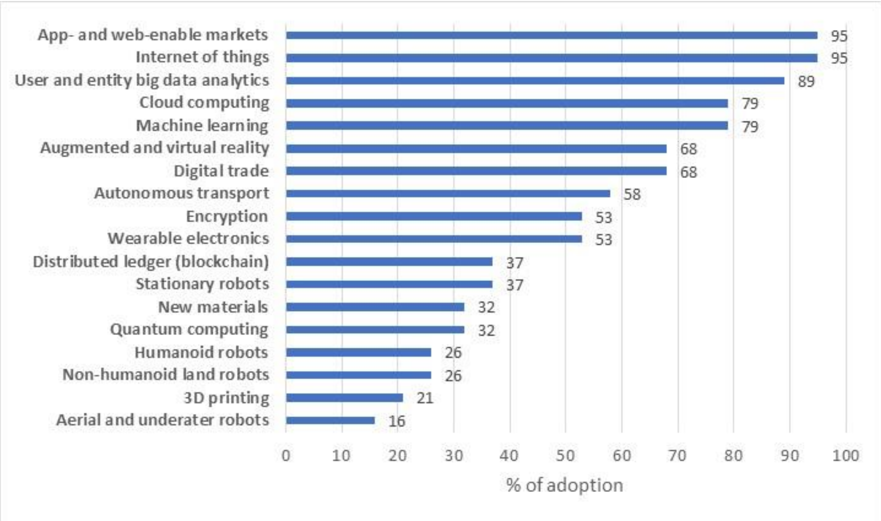
Source: Eurostat, 2017

4. Effects of digitalisation on tourism-related employment

Until today, the services sector, and especially the tourism industry, is regarded as a job creator in developed and especially underdeveloped regions (UNWTO, 2018). But it is increasingly questionable whether this will be still the case in the future when the continuing digitization of all aspects of society is taken into account. Digitalization seems to be accelerating the last two decades, by mutually reinforcing developments such as high speed internet, mobile, social media, big data analytics, the cloud, internet of things and especially artificial intelligence (e.g. algorithms) and robotization. Gartner calls these developments of the fourth industrial revolution 'the nexus of forces' (Gartner, 2014). It not only concerns the increasing digital support of (human) processes and the replacement of physical, dirty or hazardous tasks, but it is also more and more about tasks that require human intelligence. These developments will have their effects on the size and the structure (tasks and qualifications) of employment, also in the tourism industry. Internet, apps and social media have already drastically changed the way in which tourism producers relate to their (potential) customers and vica versa (e.g. web and app enabled markets). With the rise of the internet at the end of the last century, the employment in, for example, the industry of travel agents has already been hit hard. Many, especially small, travel agencies have disappeared in a short timeframe of 10-15 years. Tablets are used in restaurants to take orders instead of people. And, online platforms such as Airbnb and Uber have disrupted tourism sectors such as accommodation and taxi services in a very short time. In doing so, it is the question whether the quality of the (new) jobs in this online platform environment meets basic requirements of job security and a decent income.

For the future it can be expected that artificial systems, algorithms and intelligent robots take over many more tasks, also in the tourism industry. This not only concerns jobs which require low qualifications but more and more also those which require middle and even higher qualifications. Now it is still a novelty when a robot is used for the welcoming of guests, speeding up of the check-in, helping with information and customer services (e.g. bartending) and cleaning tasks in a hotel (see Henn-na hotel in Japan or Aloft hotels). Furthermore, one can think of self-driving taxis, busses or trains or hyperloops in the transportation sector or robots in tourism information centres. In an industry such as banking, advisers are already supported or even replaced by humanoid robo-consultants. This will also happen in the tourism industry. Of course, the speed and penetration in which digitalization will effect employment will vary per sector. This depends on, among others, the cost of labour, labour shortage (e.g. aging population), the cost of the technology available and the availability of skilled labour, flexibility of labour laws and sometimes pure necessity (e.g. sustainability). In the research of the World Economic Forum (WEF, 2018), businesses expect that around 2022 57 percent of all tasks, including information and data processing, is performed by machines and algorithms, compared to 29 percent in 2018. Also human-orientated tasks are becoming more and more within the scope of digitalization. In tourism that involves, for example, tasks such as communication, interaction and advising as well as coordinating, managing and reasoning and decision making. Although others still think that some of these social tasks are still difficult to digitize and that their successful deployment will also depend on the trust and acceptance of the users (e.g. visitors). It can also be, that the deployment of social-humanoid robots in, for example, health and elderly care, where hospitality is also key, may spill over to tourism.

Figure 12. Technology adoption in Aviation, Travel & Tourism (share of companies surveyed), 2018.

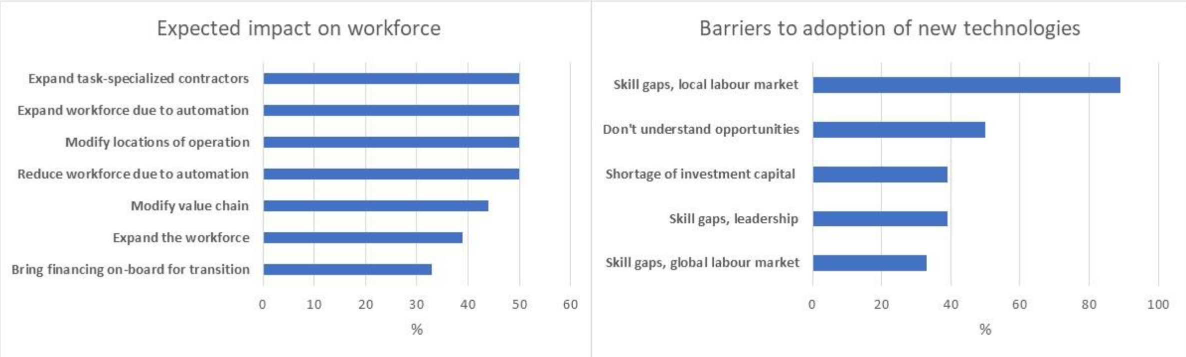


Source: World Economic Forum, 2018

The predominant view for the short term future is that jobs that will be lost due to digitization or robotization will be replaced by other new jobs and that, on balance, more jobs will be created than lost. However, the question is if this view is sustainable for the distant future. First, it is clear that more and more tasks of humans will disappear because of the advancing digitalization. Second, the new jobs that are created will require different, mostly higher, qualifications. The question is then whether people who are made redundant by digitalization also have the opportunity to obtain these higher qualifications. Third, in some cases, the cost of technology will be so low that there's no wage that people could accept that would make the job sustainable. Fourth, high-quality forms of digitalization and robotization will increasingly effect also jobs with middle and higher qualifications. And finally, internet has led to the situation where the competition for certain tasks has shifted from local to global. This puts pressure on wages and job security.

Although it is still difficult to predict how quick and how much influence digitization will have on employment in the services sector, including tourism, it is clear that even in the short term the effects will be greater than has been thought until now. Technology will make tasks and jobs redundant, others easier and will create new ones. How the balance works out is unclear. The ongoing and foreseeable trend of digitization makes it necessary to develop an employment vision for the tourism industry for the long run where opportunities and threats of digitalization and robotization on process- as well as on product-innovation and thereby employment should be taken into account. Important questions for the tourism industry are: what will happen as a result of the ongoing and accelerating digitalization? How will it affect people, their income and their job? Whose interests are being pursued? And what are the long-term implications on employment in the tourism industry? If managed wisely 'this could lead to a new age of good work, new and good jobs and improved quality of life for all, but if managed poorly, pose the risk of widening skill gaps, greater inequality and broader polarization' (WEF, 2018).

Figure 13. Expected impact of technology and barriers to adaptation in Aviation, Travel and Tourism, 2018



Source: World Economic Forum, 2018

The ongoing process of digitization forces businesses, also in the tourism industry, to look for more efficiency and flexibility, to compete with new products and business models and to expand or change to new markets, which for a growing part consists of digital-born consumers. In order to cope with these challenges and to remain competitive this requires a payable workforce (low labour costs) that has sufficient knowledge and skills that can deal with the continuing digitalization and that especially supplement technology (e.g. creativity, problem solving and originality). A workforce that is also proactive, flexible and willing to retrain if necessary. Lifelong learning and reskilling, enabled by governments, is an important part of this. Besides this, one must also realise that skill gaps of employees and managers can hinder the introduction of new technologies and therefor business growth. For the tourism industry this is not an easy task, because a relatively big part of the workforce has a temporary status. A negative effect of the need for more efficiency and flexibility of businesses is that it could create a division in the labour force with on the one side a small group of permanent employees and on the other side an ever growing group of independent temporary employees with limited work and income security. In fact, in tourism, as a seasonal industry, this division of labour in two or three different groups, with the so-called flexible layer, was already started in the 90's.

Figures 12 and 13 show some of the results for the Aviation, Travel and Tourism sector of the WEF-report which describes the adoption of new technologies by businesses, effects on the workforce and possible barriers to introduce new technologies in industries.

5. References

- Eurostat (2017), Tourism industry – tourism, Luxembourg;
- Gartner (2014), The nexus of forces is creating the digital business;
- UNWTO (2018), https://www.eturbonews.com/183854/unwto-tourisms-leading-role-in-creating-more-and-better-jobs, Madrid
- UNWTO (2011) Tourism towards 2030, Madrid;
- WEF (2018), World Economic Forum: the future of jobs report.