Future of manufacturing

Hand packers: Occupational report

New tasks in old jobs: drivers of change and implications for job quality

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Introduction

About the study
The overall purpose of the study is to provide a comparative, qualitative, contextualised and detailed analysis of five specific manufacturing occupations, listed below with their International Standard Classification of Occupations (ISCO-08) code:

- meat processing worker (ISCO 8160);
- chemical products plant and machine operator (ISCO 8131);
- hand packer (ISCO 9321);
- car assembler (ISCO 8211);
- inspection engineer (ISCO 2141).

The study is based on a comparative, qualitative analysis of five key occupations in four countries (Germany, Italy, Sweden and the UK), each covering different European regions (continental Europe, the Mediterranean, Scandinavia, and Ireland and the UK). The study focuses on how job content, tasks, applied technologies and working conditions are changing the jobs and their content.

The five occupations were selected as case examples of classical occupations in manufacturing, and how the occupations and their content are changing due to many different factors at contextual and company level. Many other occupations in manufacturing could have been chosen. Hence, the main purpose of these comparative occupational studies is not to analyse these occupations as an end in themselves, but rather to use them to illustrate how manufacturing in Europe is changing and how this affects European jobs.

Each case study combines a contextual level (for example, industry developments) and a company level. Each case study analyses the occupation in a specific country (for example, hand packer in Germany) and how industry developments, company strategies and other contextual factors affect the work tasks and job content of the occupation. In each country, the case study is based on desk research and interviews with employees in the occupation and employers in a case study company. In addition, interviews were conducted with relevant trade associations.

At company level, the main focus of the interviews has been to analyse the contents and work tasks of the occupation. This analysis is based on a framework developed by Eurofound, which divides the job content and tasks of hand packers into three generic categories (Eurofound, 2016):

- physical/manual tasks;
- intellectual tasks – such as processing and transformation of information;
- social tasks – such as interaction with other people (colleagues, customers and so on).

The information gathered from the case studies suggests that the framework is robust and applicable across all the occupations in this study.

The occupation of this working paper
This working paper focuses on the occupation ‘hand packer’. Hand packers represent a variety of occupations in the countries analysed. Their work and tasks are clearly defined in Sweden, while there are three different dual learning pathways in Germany leading to certificates. The situation concerning definitions and training is more blurred in Italy and the UK.

Hand packers work in many different manufacturing sectors, as packaging is still an in-house activity in many companies. However, hand packing and warehouse logistics has over time undergone some outsourcing and become a sector of its own. Hand packing is now frequently outsourced to specialised logistics companies, often coupled with complementary services such as storing, repacking, labelling and a general optimisation of the customers’ logistics processes.

The occupation includes hand labellers and hand wrappers. Their tasks include manual actions such as:

- weighing, selling, wrapping material and packages;
- filling up cans, bottles, boxes, and other containers;
- labelling packages, products and various packages.
Comparative analysis of the case studies: Contextual factors

This chapter discusses the main findings of a comparative analysis of the four case studies for the occupation, one per each selected country. It analyses the contextual factors and drivers of change in the hand packing industry, and how they influence the occupation’s job content and working conditions. Contextual factors include:

- market conditions;
- technological developments;
- policy context;
- industrial relations;
- other factors that influence the industry and the occupation.

Market changes: Increasing outsourcing of packaging and logistics

The growing interdependence of markets means that the main trend is the increasing outsourcing of packaging and logistics, which has become a sector in its own right. Companies in this sector do not manufacture any products themselves, but engage in packaging and logistics services for other companies as their core activity.

The contract packaging service industry carries out packing for manufacturing companies. The packing can take place onsite at the client’s companies or at the packaging company’s premises. Outsourcing hand packing is one way companies are shifting their focus to those parts of their production where companies are more specialised, thus exploiting the advantages of job specialisation. In addition, lower labour costs in other countries and lower transaction costs make outsourcing a viable strategy. This leads to external hand packing, which is a low-paid activity in a number of sectors. Moving activities into sectors with lower wages can lead to lower salary floors, as is the case in Germany, Italy and Sweden.

Over the past decade, all four case study countries have experienced a remarkable growth in the packaging sector. In Germany, for example, turnover in the sector grew from €47 billion in 2000 to €80 billion in 2014, with an increase of 150,000 employees (+39%) over the same period (DSLV, 2015). The relative weight of companies with more than 50 employees also tripled (from 18% to 52% of the market). In Sweden, the sector is growing 1% faster than the country’s gross domestic product, with large companies growing and setting the pace.

In the UK, the packaging services industry had about 1,170 businesses in 2017, employing about 22,900 people and an annual revenue of USD 5 billion (€4.16 as of 4 January 2018). Between 2012 and 2017, the packaging service industry experienced an annual growth of 2.6%. Although dwindling manufacturing and weak wholesale activities caused a drop in revenue in 2012–2013, revenue increased in the following years as businesses operating in key downstream industries chose to outsource packaging and labelling tasks to operators to improve their cost efficiency and the appearance and marketability of their products (IBISWorld, 2017).

Although the British Contract Manufacturers and Packers Association (BCMPA) was unable to provide any statistics, it believes that the amount of contract packaging in the UK is growing. The interviewed representative explained: ‘10 years ago, we had about 40 companies in the association, and now we have over 140’. The representative added that BCMPA found that there is no simple pattern as the industries and types of manufacturing companies that tend to prefer contract packaging instead of doing packaging ‘in-house’ by themselves. However, pharmaceutical companies are considered less likely to use external contract packaging than other industries.

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1 Germany also has a very high percentage of white-collar workers, representing 37% of the labour force, in order to fill the gaps among blue-collar workers (data from 2014).
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Technological change: Digitally automated technology and new packaging materials

Technological change is an important driver affecting the work organisation of packaging in the four case study countries. The main changes are digitally automated packaging machinery and new forms of packaging materials. Digitally automated packaging technology includes packaging machines such as filling machines, sealing machines, wrapping machines, strapping machines, labelling machines and coding machines that can complete various stages of the packaging process. Digitally automated packaging technology has many advantages.

- It enables flexible packaging and customisation.
- It can improve labour productivity as it is much faster than manual packaging.
- It can improve packaging quality and handle specialised requirements such as vacuum packaging, inflatable packaging, skin packaging and pressure filling.
- It can also enhance product hygiene by eliminating hand contact with products such as foodstuffs and medicines.

Automated packaging technology goes hand in hand with the technological development of new packaging materials (for example, aseptic paper-based packaging technology for food in Sweden). The interplay between digitally managed packaging machines and new packaging materials enables new forms of flexible packaging and work organisation.

The technological changes are closely related to the development of just-in-time production and customisation in connection with different consumer demands. A good example is the food industry, which has always been a major market driver of packaging technologies that enable foods to be transported, stored and preserved, and to avoid contamination and waste. One of the main current trends in the food packaging industry is convenience. Consumer demand for practical easy-to-handle products continues to grow, mainly due to flexible working hours, the worldwide increase in the number of working women and an increased number of single households. The demand for small and individual portions, in particular, fuels turnover. In Europe alone, 100,000 new products are released every year and the number is growing. This variety poses enormous challenges to the packaging industry and requires smaller batch sizes, while also demanding an increase in product and format changes. In addition, the saturated markets in western industrialised countries are experiencing strong competition, and quick reactions to fast-changing consumer trends are crucial. Differentiation at the point of sale with regard to packaging forms, designs and materials is also important for market success and growth.

These technological trends influence the occupation of hand packers who tend to work with decreasing batch sizes and increasing customisation, and different forms and sizes of packing in order to meet customer demand. The structure of the packaging machinery also needs to be extremely flexible and offer a wide range of formats and quick format changes. Production cycles have shrunk to a few minutes due to the small batch sizes. Under these conditions, a quick changeover time guarantees high productivity.

Managing and monitoring packaging tasks is now more important

In manufacturing industries, the packing of products and materials to be shipped and delivered to customers is a complex process requiring meticulous management and documentation procedures to ensure quality and efficiency. Over the past decade, digitalisation of the logistics of the packing process has become an important driver of efficiency and quality. In particular, the use of information and communication technologies (ICT) such as barcodes, radio frequency identification (RFID) technology and mobile devices to monitor, track and trace the process has become important to capture and transmit data.

Such digital technologies have a direct impact on the work tasks and job content of hand packers, who increasingly use digital tools to capture and transmit data verifying and documenting the packing process. Digital tools increase the speed and productivity of the process. For example, hand packers in warehouses and distribution centres can handle incoming and outgoing shipments by identifying either their barcode or RFID tag via handheld mobile computers, vehicle-mounted mobile computers...
or flexible conveyors with fixed readers. Packaging operations also benefit from mobile computer technology by enabling automatic and error-free order validation. Hand packers no longer need to estimate the correct carton to use because the system automatically identifies the proper carton size and sends that information to a mobile device. The carton can then be scanned to verify that the correct one has been chosen, while also keeping a real-time inventory of packaging materials.

The use of ICT in packaging has led to a gradual shift in the tasks performed by hand packers. Being able to manage and monitor is becoming more important at the expense of physical skills. This trend can be seen in all the case study countries. The use of digital tools leads to error-free order validation, optimisation of packaging materials and a reduction in worker involvement in tasks such as weighing and measuring. The adoption of these technologies has also had visible effects on time reduction and streamlining the information flow across the production circle.

Technologies such as barcodes and RFID also allow products to be monitored and tracked throughout the process from one worker to another along the value chain. In general, hand packers are dealing with increasing digitalisation in their daily routines. The changes are a challenge to low-skilled workers who lack basic ICT skills. This transformation affects the training required to become a hand packer and has led to growing difficulties in filling positions for high-skilled profiles in the sector (for example, in Germany and the UK). There is increasing pressure to arrange classes and courses to train the new generations of hand packers.

**Policy and regulation: Focus on sustainability, waste and traceability**

The increasing political focus on sustainability means that the packaging sector is confronted with higher consumer awareness concerning sustainability and the implementation of green policies aimed at a general reduction in waste and emissions.

The transition towards low-carbon energy means that manufacturing companies and packaging technology are under pressure to reduce their energy use. Within packaging, the trend is for thinner materials, a reduction in the use of resource-intensive materials, and new packaging solutions such as flexible packaging instead of more effort-intensive trays. With packaging machinery, savings are pursued by reducing the number of different packaging materials. This saves energy when packing and reduces material and transport costs.

The trend is seen in all four case studies. Sweden appears to be at the forefront of the transition with environmentally friendly packaging solutions, low-waste production lines, high use of green energy, lighter packaging, low-carbon footprint transportation, and the use of laser technology and natural branding to replace sticky labels on food products. The other three case study countries have experienced a less pronounced transition, but they all face pressure to reduce their energy use and the amount of packaging.

Consumer demands for sustainability, traceability and accountability are forcing the packaging industry, and in particular, the food industry, to revisit everything from ingredient sourcing and supply chain sustainability to packaging and labelling. There is also an increasing focus on hygienic quality standards as well as the enforcement of regulations at both EU and national level. The importance of hygiene is particularly visible in the food industry, where the production line must be designed and operated to prevent bacteria and dirt from affecting the products. Moreover, machines have to be designed with two main priorities in mind, that is, facilitating the cleaning process and speeding up cleaning phases (for example, the cleaning-in-place procedures in the UK).²

The increasing globalisation of trade and supply chains means that the traceability of products as well as comprehensive documentation of all production processes are increasingly important for manufacturing and packaging companies. Demands for traceability, as well as manufacturers’ increasing demands for a secure value-added chain from producer to consumer, require continuous and complete identification and tracking throughout the entire production and packaging chain. This affects the occupation of hand packers, who increasingly have to handle barcodes and fill in checklists and documentation forms that monitor the whole packing and delivery process.

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² Thanks to this, the UK packaging industry has a 3% wastage level compared with figures of more than 40% in countries such as India and Russia (The Packaging Federation, 2012).
Workforce changes: Automation may reduce number of hand packer jobs

Logically, the increasing automation of packaging tasks should reduce the level of employment as fewer people are needed to carry out the physical tasks. Some of the case studies confirm this trend. In Sweden, for example, the public employment service expects labour market demand for hand packers to decrease within the next years due to the increasing automatisation and efficiency in manufacturing. A recent Swedish study indicates that the number of hand packers in employment fell about 15% between 2006 and 2011 due to automation (Fölster, 2015).

The interviewed managers of the labour department at the Italian case study company believe that the number of hand packers employed – including sorting staff, forklift truck operators and warehouse workers – is declining. However, this trend is difficult to verify by statistics as some of the hand packers are moved internally to other functions or have new work tasks.

The increasing customisation of package designs and the complexity of packaging tasks make it difficult to automate all processes. The case studies indicate that digital tools reduce manual work tasks, but increase other logistical tasks related to the management, monitoring and documentation of packing processes.

The case studies indicate that digitalisation and the increasing complexity of packaging widen the skill spectrum of hand packers. Thus, some hand packers develop into becoming advanced hand packers and ICT users, who monitor and coordinate other hand packers who are performing simpler tasks. The grading of hand packers’ tasks and areas of responsibility in the Italian case study provides a good example of this differentiation of advanced and simple hand packers.

Industrial relations

The distribution of hand packer jobs across many industries means that hand packers’ occupational identity and representation by trade unions are not clearly defined. In industrial relations, hand packers are typically designated as being part of a large group such as ‘hand packers and other manufacturing workers’ or ‘hand packers and warehouse workers’.

Looking at the four case study countries, most hand packers in Italy and Sweden tend to be covered by collective agreements while those in Germany and the UK are less unionised. However, outsourcing means that hand packers are increasingly being employed as temporary workers by external packaging companies undertaking contract packaging or by recruitment agencies. This trend may indicate an increase in the number of hand packers not covered by collective agreements.

In Germany, for example, increasing outsourcing of packaging and logistics to companies outside manufacturing is resulting in fewer unionised hand packers. In the UK, the lower number of unionised hand packers reflects the general low degree of unionised workers in the UK. In Germany, most hand packers in manufacturing are covered by various industry-wide collective agreements and, at workplace level, are often represented by a strong works council. Over the past decade, however, packaging, logistics and transport tasks have increasingly been outsourced – often so as to cut labour costs by moving activities into another industry with much lower wages. The collective agreements in the logistics sector are quite traditional as they still differentiate between white-collar and blue-collar workers, while other industries have moved towards unified pay scales with job descriptions based on skill requirements and not on status.

In the UK, hand packers are typically organised in Unite, which is the largest trade union in the UK and whose members work in almost every sector of the economy. However, many hand packers are not unionised because the UK average trade union density is low. At present, about a quarter (26%) of UK employees are union members, although the union density is much higher in the public sector (56%) than in the private sector (14%) (BEIS, 2016). According to BCMPA, contract hand packers are typically not unionised. Union representation among hand packers working in-house in manufacturing companies tends to be more common in large companies. Most non-union workplaces have no employee representation, and the regulations implementing the EU directive on information and consultation have not changed this.

In contrast, most hand packers in Sweden are covered by collective agreements, as Sweden has a very high level of trade union density with about 90% of workers protected by collective agreements (LO,
2011). However, the representation of hand packers is not concentrated in one trade union. Depending on which manufacturing sector they work in, hand packers are represented in trade unions such as the Swedish Transport Workers’ Union and the Union of Metalworkers (IF Metall). Some hand packers are members of Unionen, which is Sweden’s largest trade union in the private sector and the largest white-collar trade union in the world.

Similarly, most hand packers in Italy are covered by collective agreements at industry and company level. The working conditions and shift patterns of hand packers are set out in the relevant national collective bargaining agreement. They are then adapted to the company’s specific production features through a supplementary agreement negotiated at company level between the management and works council (Rappresentanze sindacali unitarie). The collective agreement is based on a staff grading system that differentiates payments and working conditions according to the actual content of the work task and the areas of responsibility of the hand packers.

Hand packers who deal with machine settings and coordinate staff working on production lines are graded higher than hand packers who work only on an automatic sorting line.
The occupation’s job content and tasks

The contextual factors discussed in the previous chapter affect the strategies, manufacturing processes and work organisation adopted at company level, and hence the content and work tasks of the occupation. Overall, the contextual analysis indicates that hand packing jobs are affected by increasing digitalisation and automation, which reduce the number of physical tasks while increasing the tasks related to monitoring, coordination and problem-solving. The increasing focus on sustainability, traceability, hygiene and accountability increases hand packers’ use of electronic documentation systems throughout the process of packing, storage and shipment. Packaging work is increasingly outsourced and carried out by temporary workers hired by external recruitment agencies or by companies that undertake contract packaging.

Based on the interviews in the case study companies, this chapter examines how the contextual changes are affecting the job content and work tasks of the occupation. The approach taken is to look across the four case study companies to deduce the main generic tasks and job content. Table 1 presents a summary of the occupation’s tasks, following the task framework developed by Eurofound researchers, which distinguishes between physical, intellectual and social tasks (Eurofound, 2016; Fernández-Macías and Bisello, 2016).

Table 1: Summary of job content and tasks performed by hand packers:

<table>
<thead>
<tr>
<th>Category</th>
<th>Tasks content and subcategories</th>
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</thead>
<tbody>
<tr>
<td>Physical/manual tasks</td>
<td><strong>Physical strength</strong></td>
</tr>
<tr>
<td></td>
<td>• Heavy lifting and transportation of goods to their destination</td>
</tr>
<tr>
<td></td>
<td>• Stock goods for delivery and prepare goods into loading units</td>
</tr>
<tr>
<td></td>
<td>• Load, unload and stow deliveries in transport units (for example, lorries or containers)</td>
</tr>
<tr>
<td></td>
<td>• Collect raw material, finished products and pallets from production lines</td>
</tr>
<tr>
<td></td>
<td>• Palletise cartons</td>
</tr>
<tr>
<td></td>
<td>• Selection and moving of relevant products or packing material</td>
</tr>
<tr>
<td>Dexterity</td>
<td>• Unpack, sort and place goods into storage as required, abiding with the warehousing system</td>
</tr>
<tr>
<td></td>
<td>• Repack the goods</td>
</tr>
<tr>
<td></td>
<td>• Label, mark and secure deliveries in accordance with statutory requirements</td>
</tr>
<tr>
<td></td>
<td>• Measure, weigh and test the strength of the packaging</td>
</tr>
<tr>
<td></td>
<td>• Deal with the machines that tend to need more frequent cleaning</td>
</tr>
<tr>
<td></td>
<td>• Preparation of packing facilities</td>
</tr>
<tr>
<td>Intellectual tasks</td>
<td><strong>Information processing</strong></td>
</tr>
<tr>
<td></td>
<td>• Check the goods, their quality and the delivery based on the accompanying documentation</td>
</tr>
<tr>
<td></td>
<td>• Check the quality of the packing and its appearance</td>
</tr>
<tr>
<td></td>
<td>• Read the instructions on how to transport and load different materials</td>
</tr>
<tr>
<td></td>
<td>• Process dispatch and accompanying documentation</td>
</tr>
<tr>
<td></td>
<td>• Apply the regulations relating to the sealing of deliveries</td>
</tr>
<tr>
<td></td>
<td>• Plan, organise and monitor the use of equipment and the means of conveyance</td>
</tr>
<tr>
<td></td>
<td>• Use company ICT systems, standard software and workstation-specific software</td>
</tr>
<tr>
<td></td>
<td>• Collaborate in the implementation of health and safety regulations</td>
</tr>
</tbody>
</table>
## Problem-solving
- Produce load lists/loading plans according to loading guidelines
- Show flexibility to procedural and technological changes
- Assist in logistics planning and organisational processes
- Assist in developing route schedules
- Solve minor issues in production and transportation lines

## Social tasks
### Serving/attending
- Communicate with other colleagues to ensure quality and continuity in production
- Team spirit

### Teaching/training/coaching
- Supervise and provide on-the-spot training to junior colleagues

### Managing/coordinating
- Communicate and cooperate with upstream and downstream functional sectors
- Control digitalised automated process (for example, packaging or sorting), and react to problems that occur
- Coordinate the packing of orders
- Help colleagues when needed
- Supervise the functioning of machines on production lines

The following sections analyse the different task categories in more detail.

## Physical/manual tasks
The range of tasks performed by hand packers has seen constant changes in recent years. Nevertheless, the many of tasks remain physical/manual, requiring dexterity and physical strength. The tasks requiring dexterity are associated with the core activity of the occupational group (that is, unpacking, packing and repacking) and a range of ancillary tasks that complement it, including labelling, measuring, weighing and testing the packaging material (for example, testing its strength). Given the growing importance of health standards in the economy (especially in the food sector), hand packers are also often required to clean the machinery they work with.

Depending on the segmentation of labour within the individual companies, hand packers may be asked to perform tasks in which physical strength plays a major role, such as loading and unloading packages, or transporting goods along different stages of the production/logistics process. Interaction with machines such as forklift trucks is also common. Tasks in connection with palletisation may also be included such as palletising cartons or collecting pallets of raw materials and finished products from production lines. The selection of relevant products to be packed is also linked to transportation to or from the packing area in the companies.

Nevertheless, given the increasing role of machines and ICT tools, there has been an overall reduction in physical and manual tasks. The automation of production lines has led to a transformation of the role of hand packers, leaning more and more on supervisory duties. Machines carry out manual tasks with a quicker and more constant flow, reducing the waste produced along the process and guaranteeing higher hygienic standards. The use of machines has also led to higher health and safety standards during working hours.

The effect of the use of the machines is more evident in physical tasks characterised by a high degree of repetition. There has been a reduction in these over the past few years, a trend that is likely to continue in the near future. However, universal adoption of fully mechanised production lines is far
from being reached and the adoption of technology is heterogeneous, according to the sector and the countries analysed in this report.

**Intellectual tasks**

Historically, the occupational group has had a limited number of intellectual tasks. However, the number of intellectual tasks is growing steadily – and thus occupying a higher share of working hours – due to the transformation of the economy (drivers such as globalisation, technology and regulation). This shift varies considerably depending on the country and sector analysed.

Information processing has a more prominent role than problem-solving in this occupational group. This task is done mainly through checking operations covering:

- the quality of the goods themselves and their packaging (including appearance);
- the tracking of raw materials and finished products;
- the monitoring of the stages of the production process most closely linked with the packaging;
- the procedures adopted to ensure the products comply with the regulations that the hand packers need to observe (for example, the presence of the proper documentation and sealing).

In Sweden, hand packers are also in charge of transforming customer orders into manufacturing or picking orders.

Problem-solving activities are linked to:

- core activities (for example, deciding which package would suit the product to minimising the production of waste and the space occupied);
- interaction with one or more pieces of machinery/software.

The growing role of mechanical, robotic and ICT support can lead to a series of issues, especially in the initial phase of implementation. The ability of hand packers to solve minor issues, to identify where in the production process problems arise, to pass the information to the most relevant colleagues and to liaise promptly with technical assistance can be key to saving time, material and money.

The introduction of new technology and regulations has been a significant driver of change in the tasks performed by this occupational group. Once a low-to-medium skilled occupational sector, the steadily growing importance of automation is altering the landscape. The four case studies indicate that ICT, electronic and mechatronic technicians will be in demand in the future for this occupational group, along with those able to manage and supervise the production processes that are becoming more automated every day.

It will also be important for employees with manual tasks who are still employed in the sector to gain ICT skills to be able to use computerised optical reading devices to manage the handling of goods as well as operational devices used in automated warehouses (as is the case in several manufacturing companies in Italy). Such skills are expected to become increasingly complex and the occupational profile of a forklift truck operator will become obsolete due to the automation process. This will call for more technicians with programming, maintenance and management skills in relation to the machines that will eventually be installed. Newly hired employees operating on production lines tend to be young and mainly male mechanical, electrical, ICT and mechatronics specialists. For the time being, the situation is diverse. While there are differences in the tasks assigned to different sub-occupational groups within hand packers with different experience and length of service in Germany and Sweden, this is not the case in Italy. Yet in the future, these factors will become central for all hand packers working with machines.

**Social tasks**

Hand packers typically work in teams in which they cooperate to carry out the packaging of orders and shipments within specific deadlines. Teamwork and cooperation with other hand packers is, therefore, an important element of the occupation to ensure quality and continuity in production.

Employee interviews in Sweden and the UK available on the Indeed.com platform also highlight the importance of team spirit and collaboration. This seems to speed up the learning process, reduce the
number of mistakes, and generate a good environment that makes workers more comfortable and satisfied with their working conditions.

Teaching, training and coaching are also part of the work. Typically, senior hand packers have a mentoring role towards new colleagues in connection with work supervision and on-the-spot training. The number of mentoring tasks may be expanding as packaging companies increasingly employ temporary workers from recruitment agencies to achieve flexibility. This means that permanently employed workers have to instruct temporary workers on a continuous basis.

Managing and coordinating activities are the most important of the social tasks performed by hand packers. The coordination of the packing orders, and the communication and cooperation with upstream and downstream functional sectors, are the two core tasks regardless of the level of technology involved in the process.

With the gradual automation of the logistics process, other tasks are gaining importance, most notably supervision of the functioning of the machines along the production lines, and the monitoring of digitalised automated processes (or alternatively, the coordination of other colleagues in charge of the process monitoring).

**Methods and tools of the work**

The previous sections analyse the content of the work in terms of the occupation’s physical, intellectual and social tasks. This section focuses on the methods, that is, the forms of work organisation used in performing the tasks. The framework developed by Eurofound differentiates between three dimensions:

- **autonomy** – extent to which the worker is free to carry out the task as they want;
- **teamwork** – extent to which the task is carried out in direct cooperation with a small group of co-workers;
- **routine** – extent to which the task is repetitive and standardised.

The case studies show that the work of hand packers tends to be routine in the sense that packing tasks are repetitive and standardised. At the beginning of a workday or week, the hand packer starts by reading an order (for example, a packing order), which specifies the products to be packed. Based on the order plan, the hand packer – often in collaboration with others – prepares the collection of products to be packed. In some cases, the collection and preparation of products to be packed is a complex process involving many different items. All processes are standardised, meaning that they have to be carried out consistently according to quality criteria and within a certain deadline.

Hand packers work in teams and help each other to complete the orders before the deadline. The teams have some autonomy when deciding how to prioritise the orders to optimise the work before the deadline.

In terms of tools, the Eurofound framework differentiates between two main types: machines (excluding ICT) and ICT. The case studies show that hand packers use machinery such as conveyor belts, packing and labelling machines and forklift trucks to move products to be packed and shipped. Increasingly, ICT is used to facilitate automation of the packaging process and its documentation. Electronic labelling technology (for example, RFID and barcodes) and other automatic identification technology is used to ensure that packages can be traced. In some cases, the products are expensive and fragile, and packages may contain important and critical goods (for example, dangerous or explosive materials). Thus, the tracking of goods – and packages in particular – is a critical function for manufacturing companies.
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Job quality of the occupation
The concept of job quality refers to the potential impact of the characteristics of jobs on the well-being of workers. Based on information from the case studies, this chapter discusses the job quality of the work of hand packers. The discussion uses a Eurofound model, which has the following four main dimensions of job quality (Eurofound, 2013):
- intrinsic quality of work (autonomy, skills and social support);
- employment quality (development opportunities and contractual stability);
- workplace risks;
- working time and work–life balance (duration, scheduling, flexibility and intensity);

A further dimension, pay/wages, was added for this study to enrich the analysis.

Intrinsic job quality

Intrinsic job quality has three main components:
- skills – how varied and stimulating the skills required in the job are;
- autonomy – to what degree the worker work on their own and can decide the pace of the work and how to carry out work tasks;
- social support – how stimulating and enriching the social environment of the job is.

Taken as a whole, intrinsic job quality can be understood as a measure of the richness of work as a creative human activity, which is what skills, autonomy and social support are all about.

The job title ‘hand packer’ might suggest that it is a very simple and repetitive manual job that consists of packing items or products into packages and which anyone could master after a short instruction. However, the UK case study company stated that only about 1 or 2 out of 10 recruited people have the skills needed to be a hand packer. The interviewed managers and hand packers also stated that it took several years for a hand packer to become fully familiar with all the logistical processes in the company.

The case studies show that the job of hand packers has developed into a challenging job where experienced hand packers perform complex logistical and coordinating tasks of packing and shipping products on time to many different customers. Although the job involves standardised routine tasks, the hand packer has to be able to manage the logistical complexity of coordinating the collection and packing of an increasing number of different products into customised packages.

The demands relating to traceability and documentation mean that the job of hand packers increasingly involves problem-solving and coordination. Working as a hand packer has thus become a job with increasing levels of autonomy, because the hand packer makes decisions on how to intervene and solve problems in the production.

The social support component of working as a hand packer appears to be an important part of the job’s quality. The case studies indicate that the teamwork of hand packers is intense and that this social stimulation enriches the quality of the job.

Overall, the case studies indicate that the intrinsic job quality of the job is improving as the job includes a more balanced set of physical as well as intellectual tasks related to problem-solving, coordinating and monitoring packing processes.

Employment quality

The development opportunities of the occupation appear to be improving. The increasing number of intellectual work tasks related to problem-solving implies that the job involves increasing levels of responsibility and career potential. The Italian case study company provides a good example of this, as its grading system shows that the occupation can develop into advanced hand packers who manage ICT systems and coordinate other hand packers. The case studies also indicate an increasing polarisation between simple hand packers who do routine tasks supervised by others and advanced hand packers who work with ICT and have coordination tasks.
The employment quality of hand packers varies considerably as they work in many different industries. In addition, the contractual stability of their job depends very much on whether they work in an industry that is covered by collective agreements. If this is the case, their working conditions, working time and payment will typically be subject to stronger safeguards as hand packers are represented together with all other production workers. However, the increasing trend of outsourcing and the use of temporary workers recruited by external agencies means that the contractual stability of some hand packers is less because they are not covered by a collective agreement.

Workplace risks
The case studies indicate that the health and safety situation of hand packers is improving, as the use of lifting equipment and automation technology has reduced the number of physical demanding tasks. In general, automation technologies have improved ergonomics by introducing conveyor rollers, pliers, anthropomorphic arms or forklift trucks to handle materials. Automated guided vehicles are increasingly reducing the need to use rider-operated forklift trucks (generally diesel-powered), which have been replaced by electricity-powered trucks with a view to reducing exposure to exhaust gases. But although the physical health risks have decreased, the mental demands and the speed of work may have increased and may lead to stress.

Working hours and work–life balance
The case studies indicate that the working hours and work–life balance are good for hand packers who are covered by collective agreements. However, the working hours and the speed of work may be hard for hand packers who are not covered by collective agreements. Employee interviews suggest that hand packers who have experienced poor working conditions typically complain about the high speed of work and the long working hours. The working day is described as ‘busy’, and the shift work and lack of staff benefits are considered unattractive. Dissatisfied hand packers claim the combination of a high speed of work and quality level demands is stressful, and some of them also report physical demanding tasks such as lifting heavy items.

Pay/wages
There are very large variations in the wage levels of hand packers depending on the industry, the coverage of collective agreements and the hand packers’ level of experience. The increase in outsourcing and use of temporary workers is regarded as leading to a downward pressure on wages. In the UK, for example, wage statistics indicate that the average hourly wage for hand packers is £8.10 (about €9.2) as of 4 January 2018 (Indeed.com, 2018). This is close to the National Minimum Wage which, in 2017, was £7.50 (about €8.5) per hour for those aged 25 or over. However, anonymous wage reports from recruitment agencies show that £6.50 (about €7.4) per hour is the wage level most frequently reported.

The case studies indicate that working as a hand packer can be a complex, logistical job where the hand packer develops valuable experience over time. The case studies also indicate an increasing polarisation between simple hand packers who do routine tasks supervised by others, and advanced hand packers who work with ICT and have coordination tasks. Hand packers who perform managerial and monitoring tasks using ICT are paid higher wages than hand packers who perform routine tasks supervised by others. This is reflected in the Italian case study company, where hand packers are graded according to the content of their work tasks.

In Sweden, the wage level of hand packers is €2,609 per month on average; it ranges from €3,138 to €2,155 (AllasStudier, 2017). Typically, wage levels increase with seniority. The interviewed case study company stressed the importance of experienced hand packers due to the time it takes to train new employees to become familiar with all the products and work processes.

In the UK, wage statistics show that the annual wage or salary for a hand packer is about £14,000 (about €15,780) for a new hand packer and £16,000 to £18,000 (about €18,030 to €20,280) for experienced hand packers (National Careers Service, 2017).
Conclusions

By its name ‘hand packer’ could appear to be a very simple, manual occupation that risks disappearing as more manufacturing processes become automated and digitalised. However, the occupation has evolved into a demanding job where experienced hand packers perform complex logistical and coordinating tasks in connection with packing and shipping products on time to many different customers. Although the job involves standardised routine tasks, the hand packer has to manage the logistical complexity of coordinating the collection and packing of an increasing number of different products into customised packages.

Digitalisation and automation technologies have eliminated some physical tasks, but at the same time, the number of new tasks in connection with monitoring, coordination and problem-solving is increasing. The increasing differentiation of packaging designs and sizes means that the number and logistical complexity of packaging tasks has increased and that full automation of all processes is not possible. In addition, demands relating to traceability and documentation mean that hand packers increasingly handle ICT systems to keep track of all packing and shipment processes as well as problem-solving and coordination in the case of unforeseen events.

The case studies indicate that the occupation of hand packer tends to become polarised between simple hand packers, who mainly do routine tasks instructed by others, and advanced hand packers, who work with ICT and have coordinating tasks and an increasing number of areas of responsibility. In contrast, the work of simple hand packers with no ICT experience can be automated or outsourced to temporary agency workers.
References

All Eurofound publications are available at www.eurofound.europa.eu

AllaStudier (2017), Handpaketerare [Hand packers], web page, accessed 19 January 2018


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