



Methodology for the selection of the occupational profiles to be analysed

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Methodology for the selection of the occupational profiles to be analysed

The DIGIT-FUR team has implemented a selection process in order to identify those specific occupational profiles within the Furniture sector that will be affected the most by the impact of the Industry 4.0.

The first step of the process was to identify the last version of the International Standard Classification of Occupations (ISCO): ISCO-08 (year 2008). This classifies all the occupations according to a system based on four levels, going from 1 digit (the most general) to four digits classification (the most detailed).

A first selection of profiles was implemented looking at those occupations specific to the furniture sector and relevant for it. The selection was focused on the four digits classification. Following this first step, other aspects taken into consideration were the expected impact on those occupations by the sector digitization and their relevance for the sector in terms of volume of jobs.

The first draft list was discussed among the project team, the project external experts and the project associated organizations (EFBWW, EFIC and UEA).

This list included the following occupations:

- 7522 Cabinet-makers and related workers**
- 7523 Woodworking-machine tool setters and operators**
- 7534 Upholsterers and related workers**
- 8172 Wood processing plant operators**

To the above-mentioned occupations, we added other occupations not specific to the sector, but that we considered will be clearly affected by the sector digitization and that are relevant for the functioning of the sector companies.

- 1221 Sales and marketing managers**
- 1321s Industrial production manager**
- 1324s Supply Chain manager (Supply, distribution and related managers)**
- 2141s Maintenance & repair engineer (machinery maintenance and repair workers)**
- 2163s Furniture designers (Product and garment designers)**
- 8219s Furniture assembler**
- 9329 Manufacturing labourers not elsewhere classified**

The above-mentioned profiles represent the list that we are going to analyse during project next steps in relation to:

- Probability of impact of the digital transformation and processes automation on the profiles
- Change in the volume of jobs for this profile
- Changes in the profile tasks due to digitization
- Changes in the skills and knowledge needs due to these tasks changes
- Changes in the OHS risks due to these tasks changes.

Details of the profiles:

7522 Cabinet-makers and related workers [Link](#)

Cabinet-makers and related workers make, decorate and repair wooden furniture, parts, fittings, patterns, models and other wooden products using woodworking machines, machine tools and specialized hand tools.

7 Craft and related trades workers

75 Food processing, wood working, garment and other craft and related trades workers

752 Wood treaters, cabinet-makers and related trades workers

7522 Cabinet-makers and related workers

Tasks

The cabinet-maker

- Works in accordance with basic health and safety regulations, including environmental protection and efficient energy use
- Works in a customer-oriented manner
- Considers cost- and time-effectiveness when planning and organizing his/her work in his/her area of influence
- Contributes to continuous improvement of work processes in the company
- Coordinates work with the rest of the team, report to his/her team leader
- Cooperates with other departments (administrative, commercial and technical services)
- Assists in the implementation of quality assurance activities

(a) operating woodworking machines such as power saws, jointers, mortisers and shapers, and using hand tools to cut, shape and form parts and components;

- Selecting, controlling, mounting and replacement of cutting tools on the woodworking machines
- Operating woodworking machines

(b) studying plans, verifying dimensions of articles to be made, or preparing specifications and checking the quality and fit of pieces in order to ensure adherence to specifications;

(c) trimming joints and fitting parts and subassemblies together to form complete units using glue and clamps, and reinforcing joints using nails, screws or other fasteners;

(d) making, restyling and repairing various wooden articles such as cabinets, furniture, vehicles, scale models, sports equipment and other parts or products;

(e) decorating furniture and fixtures by inlaying wood or applying veneer and carving designs;

(f) finishing surfaces of wooden articles or furniture.

7523 Woodworking machine tool setters and operators [Link](#)

Woodworking machine tool setters and operators set-up, operate and monitor automatic or semi-automatic woodworking machines such as precision sawing, shaping, planing, boring, turning and woodcarving machines to fabricate or repair wooden parts for furniture, fixtures and other wooden products.

7 Craft and related trades workers

75 Food processing, wood working, garment and other craft and related trades workers

752 Wood treaters, cabinet-makers and related trades workers

7523 Woodworking-machine tool setters and operators

Tasks

The woodworking machine tool-setter and operator

- Works in accordance with basic health and safety regulations, including environmental protection and efficient energy use
 - Works in a customer-oriented manner
 - Considers cost- and time-effectiveness when planning and organizing his/her work in his/her area of influence
 - Contributes to continuous improvement of work processes in the company
 - Coordinates work with the rest of the team, report to his/her team leader
 - Cooperates with other departments (administrative, commercial and technical services)
 - Assists in the implementation of quality assurance activities
- a) verifying dimensions of articles to be made, or preparing specifications and checking the quality and fit of pieces in order to ensure adherence to specifications;
 - b) setting up, programming, operating and monitoring several types of woodworking machines for sawing, shaping, boring, drilling, planing, pressing, turning, sanding or carving to fabricate or repair wooden parts for furniture, fixtures and other wooden products;
 - c) operating preset special-purpose woodworking machines to fabricate wooden products such as coat hangers, mop handles, clothespins and other products;
 - d) selecting knives, saws, blades, cutter heads, cams, bits or belts according to work piece, machine functions and product specifications;
 - e) installing and adjusting blades, cutter heads, boring-bits and sanding-belts, and using hand tools and rules;
 - f) Selects, controls, mounts and replaces cutting tools on the woodworking machines
 - g) setting and adjusting various kinds of woodworking machines for operation by others; reading and interpreting specifications or following verbal instructions.

7534 Upholsterers and related workers [Link](#)

Upholsterers and related workers install, repair and replace upholstery of furniture, fixtures, seats, panels, convertible and vinyl tops and other furnishings of automobiles, railway coaches, aircraft, ships and similar items with fabric, leather, rexine or other upholstery material. They also make and repair cushions, quilts and mattresses.

7 Craft and related trades workers

75 Food processing, wood working, garment and other craft and related trades workers

753 Garment and related trades workers

7534 Upholsterers and related workers

Tasks

The upholsterer

- Works in accordance with basic health and safety regulations, including environmental protection and efficient energy use
 - Works in a customer-oriented manner
 - Considers cost- and time-effectiveness when planning and organizing his/her work in his/her area of influence
 - Contributes to continuous improvement of work processes in the company
 - Coordinates work with the rest of the team, report to his/her team leader
 - Cooperates with other departments (administrative, commercial and technical services)
 - Assists in the implementation of quality assurance activities
- a) discussing upholstery fabric, colour and style with customers and providing cost estimates for upholstering furniture or other items;
 - b) verifying dimensions of articles to be made, or preparing specifications and checking the quality and fit of pieces in order to ensure adherence to specifications;
 - c) making upholstery patterns from sketches, customer descriptions or blueprints;
 - d) laying out, measuring and cutting upholstery materials following patterns, templates, sketches or design specifications;
 - e) installing, arranging and securing springs, padding and covering material to furniture frames;
 - f) sewing upholstery materials by hand to seam cushions and joining sections of covering materials;
 - g) sewing rips or tears in material, or creating tufting, using needle and thread or hand operated machines for sewing-/locking;
 - h) tacking, gluing or sewing ornamental trims, buckles, braids, buttons and other accessories to covers or frames on upholstered items;
 - i) laying out, cutting, fabricating and installing upholstery:
 - Installing upholstery on the structure
 - Finishing of the upholstery
 - j) renovating antique furniture using a variety of tools including ripping chisels, magnetic hammers and long needles;
 - Ripping off the seats and sofas
 - Demounting of the (structural) parts
 - Renovating of the upholstery
 - k) collaborating with interior designers to decorate rooms and coordinate furnishing fabrics;
 - l) making quilts, cushions and mattresses.

- Filling up cushions
- Filling up mattresses

8172 Wood processing plant operators [Link](#)

Wood processing plant operators monitor, operate and control lumber mill equipment for sawing timber logs into rough lumber, cutting veneer, making plywood and particle board, and otherwise preparing wood for further use.

8 Plant and machine operators and assemblers

81 Stationary plant and machine operators

817 Wood processing and papermaking plant operators

8172 Wood processing plant operators

Tasks

The wood processing plant operator

- Works in accordance with basic health and safety regulations, including environmental protection and efficient energy use
 - Works in a customer-oriented manner
 - Considers cost- and time-effectiveness when planning and organizing his/her work in his/her area of influence
 - Contributes to continuous improvement of work processes in the company
 - Coordinates work with the rest of the team, report to his/her team leader
 - Cooperates with other departments (administrative, commercial and technical services)
 - Assists in the implementation of quality assurance activities
- a) examining logs and rough lumber to determine size, condition, quality and other characteristics to decide best lumber cuts to carry out, or operating automated equipment to convey logs through laser scanners which determine the most productive and profitable cutting patterns;
 - b) operating and monitoring log in-feed and conveyor systems;
 - c) Preparation of the work, by removing strange elements (in metal, stone...), removing bark, etc...
 - d) operating and monitoring head saws, resaws and multiblade saws to saw logs, cants, flitches, slabs or wings and remove rough edges from sawn timber into dressed lumber of various sizes, and to saw or split shingles and shakes;
 - e) Selecting, controlling, mounting and replacement of cutting tools on the woodworking machines
 - f) operating and monitoring plywood core-laying machines and hot-plate plywood presses and machines which cut veneer;
 - g) cleaning and lubricating sawmill equipment.

1221 Sales and marketing managers [Link](#)

Sales and marketing managers plan, direct and coordinate the sales and marketing activities of an enterprise or organization, or of enterprises that provide sales and marketing services to other enterprises and organizations.

1 Managers

12 Administrative and commercial managers

122 Sales, marketing and development managers

1221 Sales and marketing managers

Tasks

- a) planning and organizing special sales and marketing programmes based on sales records and market assessments;
- b) determining price lists, discount and delivery terms, sales promotion budgets, sales methods, special incentives and campaigns;
- c) establishing and directing operational and administrative procedures related to sales and marketing activities;
- d) leading and managing the activities of sales and marketing staff;
- e) planning and directing daily (sales and marketing) operations;
- f) establishing and managing budgets and controlling expenditure to ensure the efficient use of resources;
- g) overseeing the selection, training and performance of staff;
- h) representing the enterprise or organization at sales and marketing conventions, trade exhibitions and other forums.

1321s Industrial Production managers [Link](#)

Industrial production managers oversee the operations and the resources needed in industrial plants and manufacturing sites for a smooth running of the operations. They prepare the production schedule by combining the requirements of clients with the resources of the production plant. They organise the journey of incoming raw materials or semi-finished products in the plant until a final product is delivered by coordinating inventories, warehouses, distribution, and support activities.

1 Managers

13 Production and specialised services managers

132 Manufacturing, mining, construction, and distribution managers

1321 Manufacturing managers

industrial production manager

(Furniture production manager)

Tasks

- a) determining, implementing and monitoring production strategies, policies and plans;
- b) planning details of production activities in terms of output quality and quantity, cost, time available and labour requirements;
- c) controlling the operation of production plant and quality procedures through planning of maintenance, designation of operating hours and supply of parts and tools;
- d) establishing and managing budgets, monitoring production output and costs, and adjusting processes and resources to minimize costs;
- e) consulting with and informing other managers about production matters;
- f) overseeing the acquisition and installation of new plant and equipment;
- g) controlling the preparation of production records and reports;
- h) coordinating the implementation of occupational health and safety requirements;
- i) identifying business opportunities and determining products to be manufactured;
- j) researching and implementing regulatory and statutory requirements affecting manufacturing operations and the environment;
- k) overseeing the provision of quotations for the manufacture of specialized goods and establishing contracts with customers and suppliers;
- l) overseeing the selection, training and performance of staff.

1324s Supply Chain manager (Supply, distribution and related managers) [Link](#)

Supply chain managers plan, manage and coordinate all activities related to the sourcing and procurement of supplies needed to run manufacturing operations from the acquisition of raw materials to the distribution of finished products. The supplies can be raw materials or finished products, and it can be for internal or external use. Moreover, they plan and commission all the activities needed to be performed in manufacturing plants and adjust operations to changing levels of demand for a company's products.

1 Managers

13 Production and specialised services managers

132 Manufacturing, mining, construction, and distribution managers

1324 Supply, distribution and related managers

logistics and distribution manager

supply chain manager

Tasks

- a) determining, implementing and monitoring purchasing, storage and distribution strategies, policies and plans;
- b) preparing and implementing plans to maintain required stock levels at minimum cost;
- c) negotiating contracts with suppliers to meet quality, cost and delivery requirements;
- d) monitoring and reviewing storage and inventory systems to meet supply requirements, and control stock levels;
- e) overseeing the dispatch of road vehicles, trains, vessels or aircraft;
- f) operating recording systems to track all movements of goods, and ensuring reordering and restocking at optimal times;
- g) liaising with other departments and customers concerning requirements for outward goods and associated forwarding transportation;
- h) overseeing the recording of purchase, storage and distribution transactions;
- i) establishing and managing budgets, controlling expenditure and ensuring the efficient use of resources;
- j) establishing and directing operational and administrative procedures;
- k) planning and directing daily operations;
- l) overseeing the selection, training and performance of staff.

2141s Maintenance & repair engineer (machinery maintenance and repair workers) [Link](#)

Maintenance and repair engineers focus on the optimization of equipment, procedures, machineries and infrastructure. They ensure their maximum availability at minimum costs.

2 Professionals

21 Science and engineering professionals

214 Engineering professionals (excluding electro-technology)

2141 Industrial and production engineers

Maintenance and repair engineer

Tasks

The maintenance and repair engineer

- Works in accordance with basic health and safety regulations, including environmental protection and efficient energy use
 - Works in a customer-oriented manner
 - Considers cost- and time-effectiveness when planning and organizing his/her work in his/her area of influence
 - Contributes to continuous improvement of work processes in the company
 - Coordinates work with the rest of the team, report to his/her team leader
 - Cooperates with other departments (administrative, commercial and technical services)
 - Assists in the implementation of quality assurance activities
- a) establishing standards and policies for installation, modification, quality control, testing, inspection and maintenance according to engineering principles and safety regulations;
- b) inspecting plant to improve and maintain performance;
- c) directing the maintenance of plant buildings and equipment, and coordinating the requirements for new designs, surveys and maintenance schedules;
- Preventive maintenance
- Checks the operation of the machines, instruments (for measuring pressure, flow, temperature...) and the critical wear points, lubrication points, ...
 - Maintains the machine or installation preventively
- Predictive maintenance
- Analyses the working condition of installation or machines, to predict faults on the basis of indications (via measurements and data collection)
 - Formulates recommendations for possible interventions
- Corrective maintenance
- Locates and diagnoses a defect or malfunction
 - Replaces, repairs and tests the defective parts and adjusts them
 - Performs preparatory tests before releasing the machine or installation
- Adaptive maintenance: modifications, changes
- Provides technical support to other departments (production, quality...)
 - Plans, develops, executes approved modifications to the installation(s)
- d) advising management on new production methods, techniques and equipment;
- e) liaising with materials buying, storing and controlling departments to ensure a steady flow of supplies.

2163s Furniture designers (Product and garment designers) [Link](#)

Furniture designers work on items of furniture and related products. They design the product and are involved in its production as craftsmen and designers or makers. The conception of furniture combines innovative design, functional requirements and aesthetic appeal.

2 Professionals

21 Science and engineering professionals

216 Architects, planners, surveyors and designers

2163 Product and garment designers

industrial designer

furniture designer

Tasks

The furniture designer

- Works in a customer-oriented manner
 - Considers cost- and time-effectiveness
 - Contributes to continuous improvement of work processes in the company
 - Cooperates with other departments (administrative, commercial and technical services)
 - Assists in the implementation of quality assurance activities
-
- a) determining the objectives and constraints of the design brief by consulting with clients and stakeholders;
 - b) formulating design concepts for industrial, commercial and consumer products;
 - c) harmonizing aesthetic considerations with technical, functional, ecological and production requirements;
 - d) preparing sketches, diagrams, illustrations, plans, samples and models to communicate design concepts;
 - e) negotiating design solutions with clients, management, and sales and manufacturing staff;
 - f) selecting, specifying and recommending functional and aesthetic materials, production methods and finishes for manufacture;
 - g) detailing and documenting the selected design for production;
 - h) preparing and commissioning prototypes and samples;
 - i) supervising the preparation of patterns, programmes and tooling, and of the manufacturing process.

8219s Furniture assembler [Link](#)

Furniture assemblers place together all parts of furniture and auxiliary items such as furniture legs and cushions. They may also fit springs or special mechanisms. Furniture assemblers follow instructions or blueprints to assemble the furniture, and use hand tools and power tools.

8 Plant and machine operators and assemblers

82 Assemblers

821 Assemblers

8219 Assemblers not elsewhere classified

Furniture assembler

Tasks

The furniture assembler

- Works in accordance with basic health and safety regulations, including environmental protection and efficient energy use
 - Works in a customer-oriented manner
 - Considers cost- and time-effectiveness when planning and organizing his/her work in his/her area of influence
 - Contributes to continuous improvement of work processes in the company
 - Coordinates work with the rest of the team, report to his/her team leader
 - Cooperates with other departments (administrative, commercial and technical services)
 - Assists in the implementation of quality assurance activities
- a) assembling component parts and positioning, aligning and fastening units to assemblies, subassemblies or frames using hand or power tools, soldering and micro-welding equipment;
- Fixed assembling with glue, screws, nails, fasteners and demountable assembling
 - Finishing of the surfaces (filling up nail holes...)
 - Small corrections and reparations
 - Mounting and adjusting fasteners and special hinges, rails...
- b) reviewing work orders, specifications, diagrams and drawings to determine materials needed and assembly instructions;
- c) recording production and operational data on specified forms;
- d) inspecting and testing components and completed assemblies;
- e) rejecting faulty products.

9329 Factory Hand (Manufacturing labourers not elsewhere classified) [Link](#)

Factory hands assist machine operators and product assemblers. They clean the machines and the working areas. Factory hands make sure supplies and materials are replenished.

9 Elementary occupations

93 Labourers in mining, construction, manufacturing and transport

932 Manufacturing labourers

9329 Manufacturing labourers not elsewhere classified
factory hand

Tasks

The factory hand

- Works in accordance with basic health and safety regulations, including environmental protection and efficient energy use
 - Works in a customer-oriented manner
 - Considers cost- and time-effectiveness when planning and organizing his/her work in his/her area of influence
 - Contributes to continuous improvement of work processes in the company
 - Coordinates work with the rest of the team, report to his/her team leader
 - Cooperates with other departments (administrative, commercial and technical services)
 - Assists in the implementation of quality assurance activities
-
- a) conveying goods, material, equipment and other items to work areas, and removing finished pieces;
 - b) verifying specifications of goods, material, equipment and other items and checking the quality in order to ensure adherence to specifications;
 - c) loading and unloading vehicles, trucks and trolleys;
 - d) (d) clearing machine blockages, and cleaning machinery, equipment and tools;
 - e) carrying out manual sorting of products or components.
 - f) recording operational data on specified forms;