

## Identifying Skill Needs in the Leather Industry: Insights from Learning Factories' Focus Groups and Survey Results



From February to April 2024, the Learning Factories consortium organised 4 focus groups gathering leather industry training experts to provide their feedback on the training needs for the validation of the Learning Factories' training curricula, which will prepare employees with the needed skills to support the green and digital transition. The workshops brought together 26 experts from a total of 7 countries including Spain, Romania, Portugal, France, The Netherlands, Italy, and Poland.

The workshops started with an introduction to the Learning Factories. For many of the participants, this was their first contact with the project. This was followed by a presentation of the Learning Factories' 4 short-term curricula, to which the experts were invited to give their feedback. The contents of the curricula cover the topics of leather goods design for circularity, AI supporting design and pattern making, 3D printing supporting prototyping and tools for industrialisation, and the digital transformation of the added value manufacturing operations.

The module on leather goods design for circularity will focus on topics such as EU legislation on eco-design, and designing for zero-waste, recycling, sustainability, and re-use. The module on AI supporting design and pattern making will cover topics such as AI tools, 2D pattern engineering, 3D modelling and virtual prototyping, quality control, cutting technologies, and CAM

technologies. The module on 3D printing supporting prototyping and tools for industrialisation will focus on topics such as additive manufacturing, software for design and virtual prototyping, and industrialisation of 3D printing. The module on digital transformation of added value manufacturing operations will cover topics such as preparation of parts, stitching, closing and jointing, finishing, machines, technologies, equipment, and digital quality control.

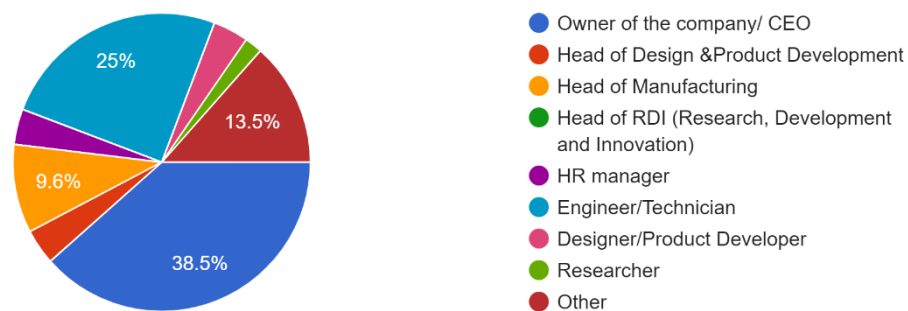
For each short-term curricula, a set of questions regarding its content were posed to invite the participants to give their feedback. The conclusions were that the chosen modules and their topics gave a good overview of the needs of leather goods companies and some additional aspects were suggested to improve their relevance.

The online survey gathered responses from 52 professionals working in 48 different companies in the leather goods industry in Portugal, Romania, Spain, Poland, and France, on their companies' readiness to implement digital technologies and their need for new skills and further training.

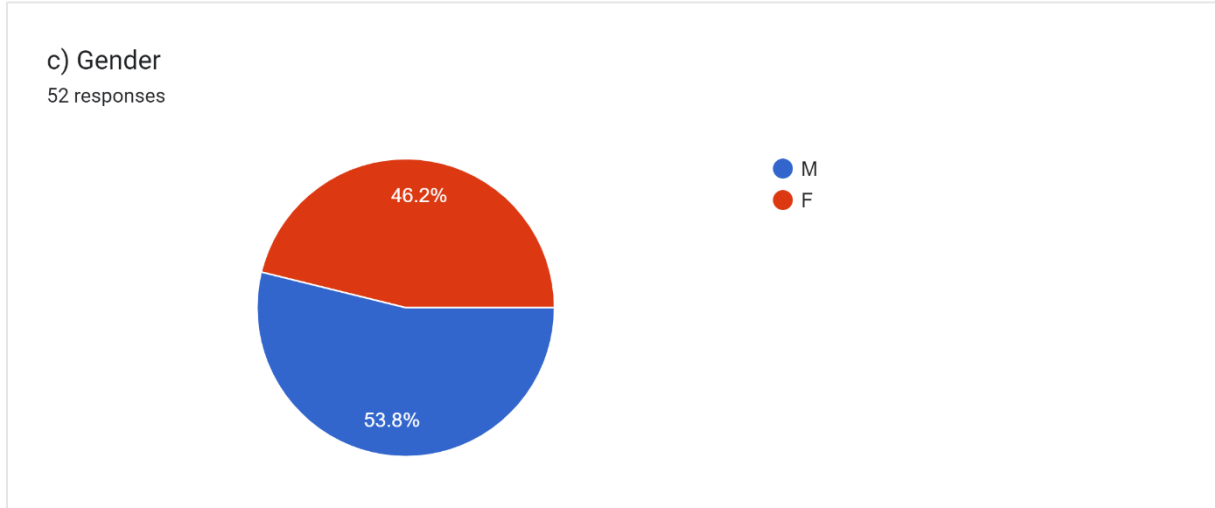
The most represented job positions of the respondents were company owners/CEOs (20 people), engineer/technician (13 people), and head of manufacturing (5 people), followed by head of design and product development (2 people), designer and product developer (2 people), HR manager (2 people), and researcher (1 person). In addition, 7 people had another position than those listed.

### 3. Please provide some information about yourself a) Your position in the Organization:

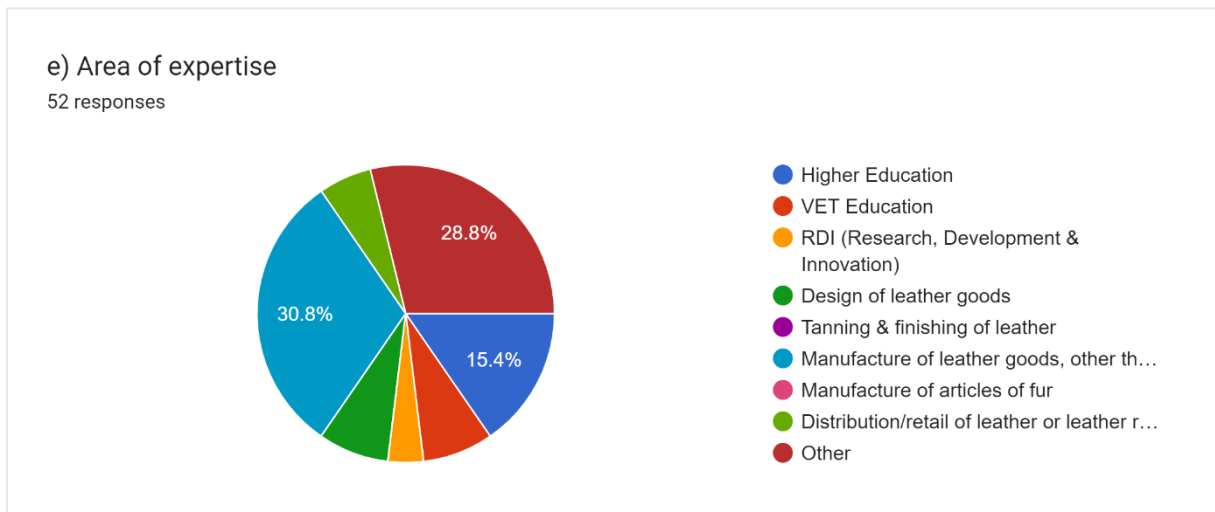
52 responses



The gender distribution of the respondents was quite balanced with 24 women and 28 men.



The most common areas of expertise of the respondents covered manufacturing of leather goods other than footwear (16 people), followed by higher education (8 people), VET education (4 people), design of leather goods (4 people), distribution of leather or leather related products (3 people), and research, development, and innovation (2 people). Furthermore, 15 people had other areas of expertise than those listed.

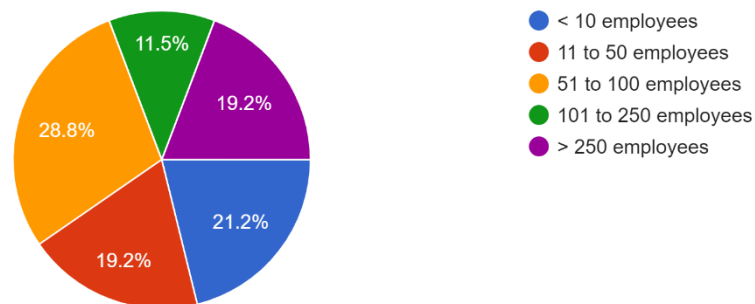


Most of the respondents worked in companies with 51-100 employees (15 people), followed by companies with less than 10 employees (11 people), 11-50

employees (10 people), more than 250 employees (10 people), and 101-250 employees (6 people).

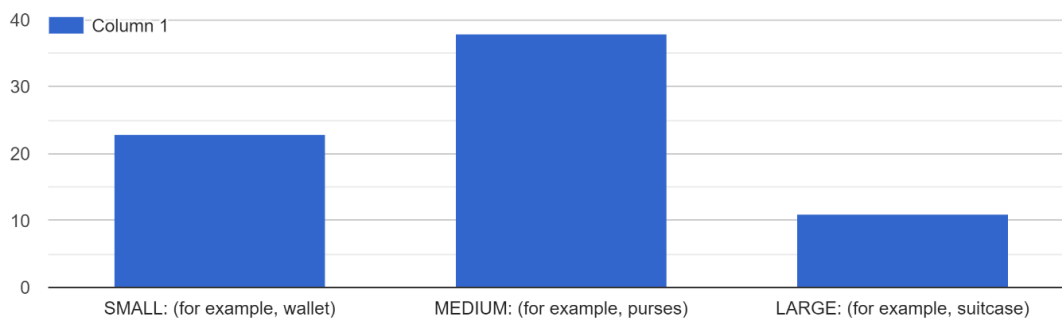
#### 4. How many employees does your Company have?

52 responses

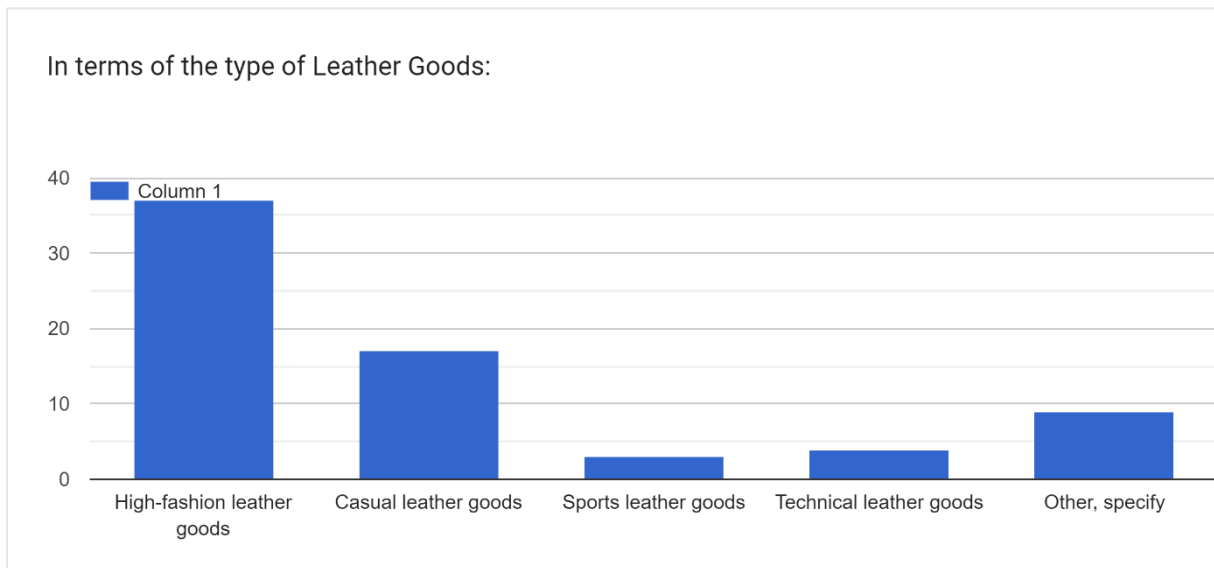


In terms of the type of leather goods produced by the companies, 38 respondents worked in companies that produced medium sized leather goods, such as purses, 23 worked in companies that produced small leather goods, such as wallets, and 11 respondents worked in companies that produced large leather goods, such as suitcases. Some respondents worked in companies that produced multiple types of leather goods.

#### 5. What type of LEATHER GOODS does your Company produce? (multiple answers possible) In terms of target group:



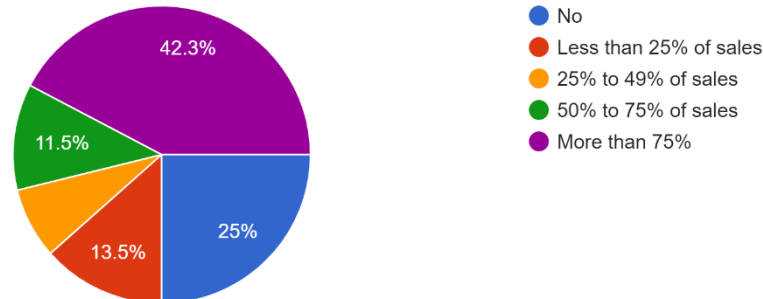
To be more precise, 37 respondents worked in companies producing high-fashion leather goods, 17 respondents worked in companies producing casual leather goods, 4 respondents worked in companies producing technical leather goods, 3 in sports leather goods, and 9 in other types of leather goods.



Most of the respondents, 22 people worked in companies exporting more than 75% of their sales, 13 respondents worked in companies not exporting any of their sales, 7 respondents worked in companies exporting less than 25% of their sales, 6 respondents worked in companies exporting 50-70% of their sales, and 4 respondents worked in companies exporting 25-49% of their sales.

## 6. Does your Company export some of its products?

52 responses

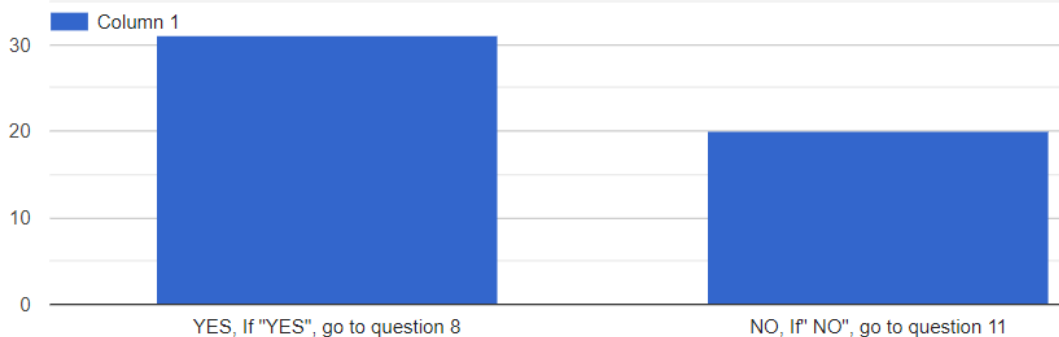


31 respondents stated that their company was prepared to adopt a digital manufacturing business model, while 20 respondents stated that their company was not prepared to do so.

## 7. Is your Company prepared to adopt a Digital Manufacturing business model?

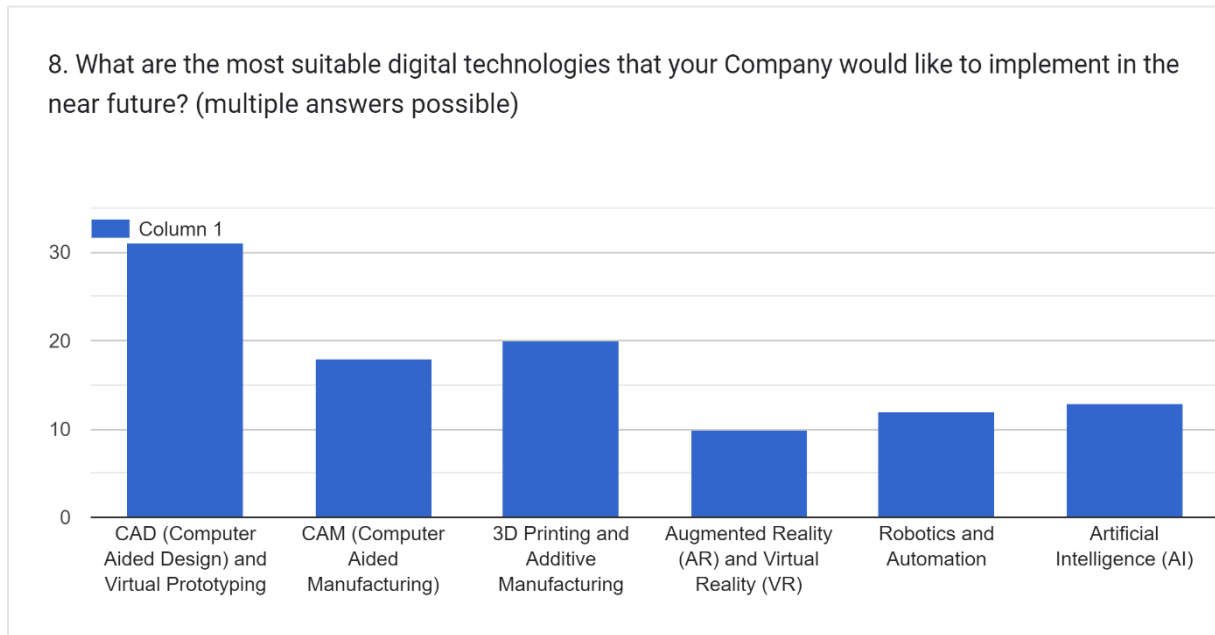


**Definition:** "Digital Manufacturing is a manufacturing process which, with the support of technologies such as virtual reality, computer networks, rapid prototyping and database, is based on customer demand so as to analyse, organise and recombine the product information, process information and resource information, implement the product design and function simulation as well as rapid prototyping, and then to perform rapid production to meet customer demand and quality standards." Source: Z. Zhou et al., *Fundamentals of Digital Manufacturing Science*, Springer Series in Advanced Manufacturing, DOI: 10.1007/978-0-85729-564-4, Springer-Verlag London Limited 2012, pag.6





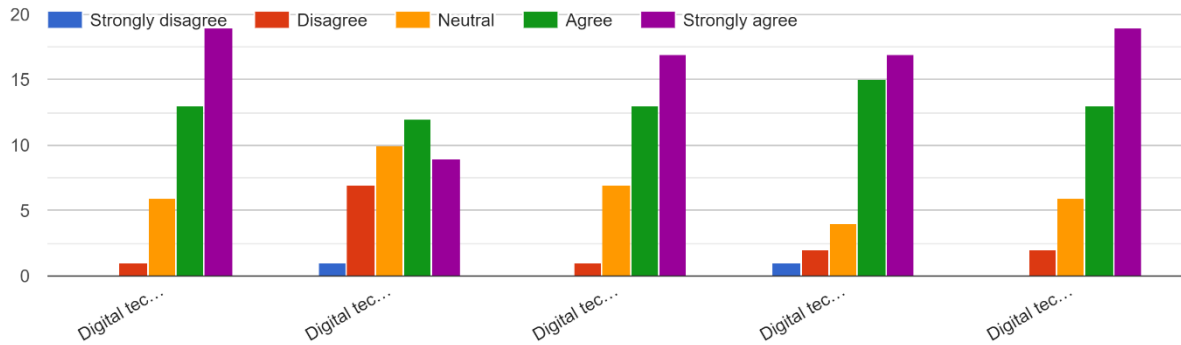
On the question of what digital technologies their companies would like to implement in the future, 31 respondents answered that their company would like to implement CAD and virtual prototyping, followed by 3D printing and additive manufacturing (20 respondents), CAM (18 respondents), AI (13 respondents), robotics and automation (12 respondents), and AR and VR (10 respondents).



Regarding the implementation of digital technologies in leather goods companies, the statements said the following:

1. “Digital technologies allow for more understanding resource savings thanks to more efficient processes.”
2. “Digital technologies make leather goods products more sustainable (durable, repairable, reusable, and recyclable)”
3. “Digital technologies provide better services to the user and clients by linking big data and sharing information through these technologies.”
4. “Digital technologies allow improved versatility and flexibility when modifying and adjusting products and manufacturing processes.”
5. “Digital technologies reduce the product development period, save production time, and increase manufacturing profitability.”

9. Regarding the implementation of digital technologies in Leather Goods companies, evaluate on a scale from 1 to 5 their BENEFITS (multiple answers possible)

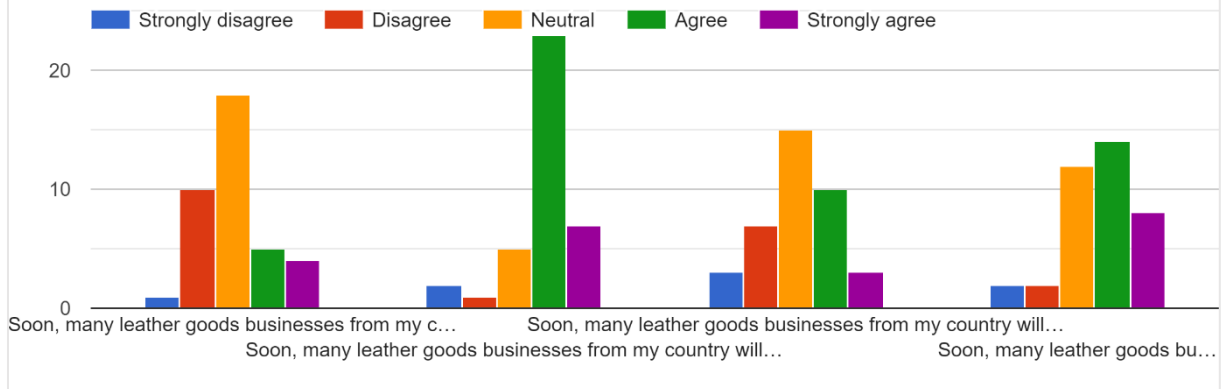


When it comes to the future of leather goods concerning digitalisation and digital manufacturing, the statements said the following:

1. “Soon, many leather goods businesses from my country will operate using robots, cobots, and automated production lines.”
2. “Soon, many leather goods businesses from my country will operate using CAD, virtual prototyping, 3D printing, and CAM”.
3. “Soon, many leather goods businesses from my country will operate by using Artificial Intelligence, Augmented and Virtual Reality.”
4. Soon, many leather goods businesses from my country can offer complete customisation services using various digital tools.”

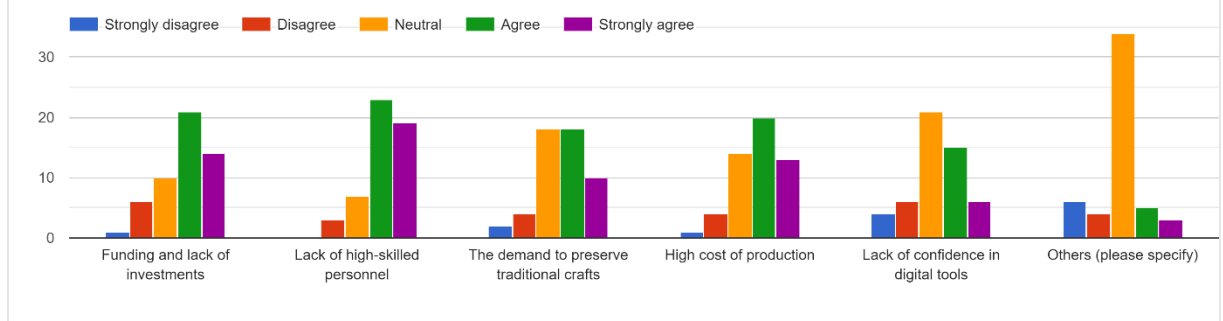


10. By rating from 1 (strongly disagree) to 5 (strongly agree), give us your perception of the future of Leather Goods in your country concerning DIGITAL MANUFACTURING. (multiple answers possible)



In terms of the obstacles that the leather goods sector is currently facing, 19 strongly agreed and 23 agreed that the lack of high-skilled personnel was an issue, 14 strongly agreed and 21 agreed that funding and lack of investments was a problem, and 13 strongly agreed and 20 agreed that the high cost of production was challenging.

11. What do you believe are the obstacles the leather goods sector in your country is currently facing in implementing the digital tools (Please rate each option from 1 to 5)



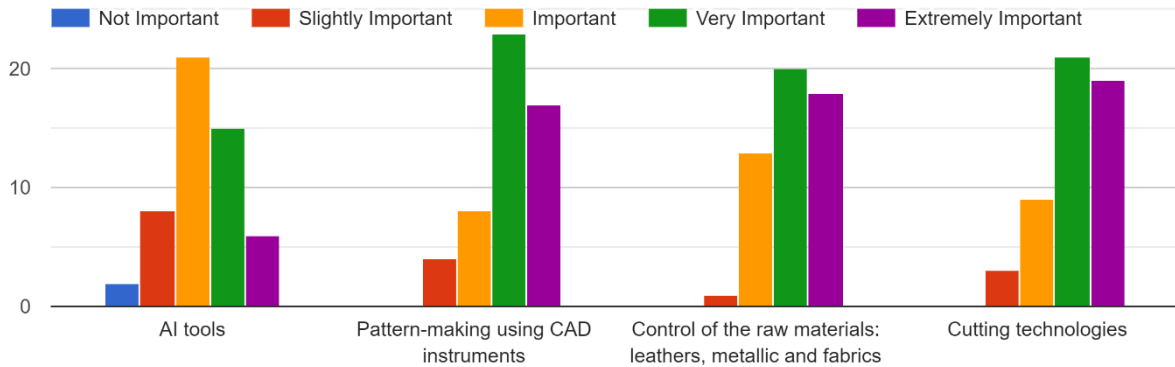
When it comes to the importance of knowledge/skills and training needs on leather goods design for circularity, 14 found new trends in design extremely important and 19 found it very important, 10 found designer assistance/expertise during manufacturing processes extremely important

and 28 found it very important, and 15 found identity and brands extremely important, while 21 found it very important.



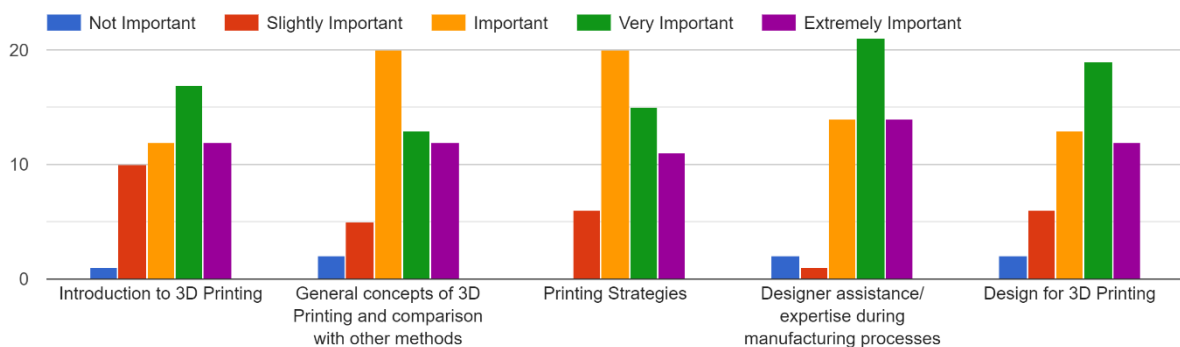
When it comes to the importance of knowledge/skills and training needs on AI supporting design and pattern making, 6 found AI tools extremely important while 15 found it very important, 17 found pattern-making using CAD instruments extremely important, while 23 found it very important, 18 found control of raw materials, leathers, and fabrics extremely important, while 20 found it very important, and 19 found cutting technologies extremely important, while 21 found it to be very important.

### ST-C2 AI supporting design and pattern making



Regarding the importance of knowledge/skills and training needs on 3D printing supporting prototyping and preparation of tools for industrialisation, 12 found introduction to 3D printing extremely important and 17 found it very important, 12 found general concepts of 3D printing and comparison with other methods extremely important and 13 found it very important, 11 found printing technologies extremely important and 15 found it very important, 14 found designer assistance/expertise during manufacturing processes extremely important and 21 found it very important, and 12 found design for 3D printing extremely important, while 19 found it very important.

### ST-C3 3DP supporting prototyping and preparation of tools for industrialisation



In regards to the importance of knowledge/skills and training needs on the digital transformation of the manufacturing operations, 11 found the operations for parts preparation extremely important and 26 found it very important, 11 found operations for parts stitching extremely important and 29 found it very important, 14 found operations for finishing extremely important and 21 found it very important, 21 found quality control of the finished product extremely important and 23 found it very important.

