Smart Industrial Remoting: remote working in non-digitalised industries – Pilot Project

Problem Identification report (D.4)

Annexes

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PPMi

The study is implemented by PPMI

EUROPEAN COMMISSION

Directorate-General for Communications Networks, Content and Technology
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European Commission
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Annex 1. Company Digitalisation survey methodology

1.1. Pre-fielding

The pre-fielding phase included all the steps before launching and distributing the survey. First, we outlined the sampling approach and the target audience of the survey. Then we chose a survey mode and developed the English version of the questionnaire, which was later translated into five other languages. Finally, the survey was tested. The sub-section describes the steps in more detail.

1.1.1. Sampling design

The survey sample was chosen in line with the scope of the study. Therefore, it targeted companies that belonged to the pre-identified country-industry pairs: automotive industry in Hungary, textile industry in Portugal, construction industry in Romania, retail industry in Poland, and agrifood industry in Lithuania (see Figure 1 below).

Figure 1. Map of the countries in the scope of the study
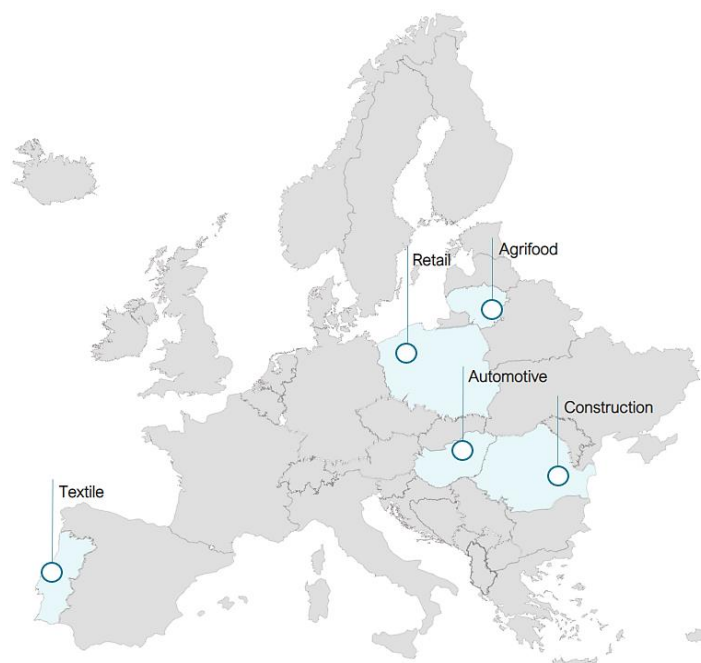
Source: own elaboration.

1.1.2. Survey mode

We used a web-based survey and programmed, managed, and disseminated it using the online survey tool Alchemer.[1] This tool features the full functionality necessary to ensure a user-friendly survey completion experience. It also enabled us to build a coherent survey logic, including

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[1] More information at: https://www.alchemer.com/

disqualification, display logic, URL redirect and others. Since Alchemer collects partial responses and respondent background data, it allowed us to assess the effectiveness of the dissemination efforts and the user-friendliness of the survey overall. The survey was accessible from a variety of devices, including desktop computers, smartphones, and tablets with different operating systems (Windows, macOS, iOS, Android).

1.1.3. Questionnaire design

The survey aimed to explore the problems companies face when adopting technologies that promote smart industrial remoting. The survey questionnaire was developed taking into consideration conclusions from the 'Smart Industrial Remoting: remote working in non-digitalised industries – Pilot Project Gap Analysis report' and the European Digital Innovation Hub (EDIH) Digital Maturity Assessment (DMA).[2]

The final questionnaire contained 22 questions in total, divided into 4 sections. The survey questions are included in Annex 2. The questionnaire covered the following main topics:

- key information about the company and respondent;
- factors affecting company digitalisation: its digital maturity, related investments, enablers of and barriers to digitalisation;
- the impact of COVID-19 on the company and its intentions to digitalise.

The final survey page also included an invitation for participants to learn more about the SIR study and to join the mailing list to hear about the study updates.

Both manual and automatic testing showed that survey completion took between 5 and 10 minutes, which helped to prevent respondent fatigue and ensure high-quality responses. A total of 18 questions were compulsory and two open-ended questions were optional. Several questions also had a display logic and appeared depending on the respondent's answers to the preceding ones.

1.1.4. Survey translation

Once finalised, the English master questionnaire was translated into the five national languages of the countries of focus in the study. Translations to Hungarian, Romanian, Polish and Portuguese were performed by professional translators. The Lithuanian survey translation was conducted by the project team. The translations were accompanied by a quality assurance process. Experts from the five Digital Innovation Hubs reviewed the translations for accuracy and suggested amendments that would improve clarity, precision, and readability. Whenever discrepancies arose, the research team decided which translation most accurately captured the essence of the question after considering the arguments presented by both sides. Afterwards, all the translations were uploaded to Alchemer and tested for concurrence between the content in all six languages.

1.1.5. Questionnaire testing

Before launching, we tested the survey together with the five hubs and implemented their feedback and suggestions. This helped to ensure the survey's validity and appropriateness, as

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[2] Available at: https://digital-strategy.ec.europa.eu/en/library/webinar-digital-maturity-assessment-tool

well as the proper functioning of the online survey tool. During the testing, we implemented the following steps:

- review of the technical implementation and debugging, which included testing the survey branching, validation of responses and filters, switching between the languages, and saving the survey progress;

- ensuring survey stability across browsers and operating systems by testing and reviewing visual displays, correct functioning of features/ responses and other aspects on computers (Windows and macOS, different browsers), tablets and smartphones (Android and iOS);

- content quality check, ensuring that the sequence of questions and filters have clear logic behind them and do not confuse the respondents.

1.2. Fielding

Once translated, the questionnaire was uploaded to Alchemer and piloted with a limited number of respondents to test if the survey was functioning properly. We used two modes to distribute the survey: open invitation and online survey panel aggregator CINT.[3] The CINT survey panel aggregator was launched because the open invitation survey method proved to be insufficiently effective during the first two weeks of the fielding period.

Throughout the fielding period, the research team closely monitored the survey completion progress. The research team was also closely monitoring the results of the different dissemination channels and adjusted them accordingly.

The overall results amounted to 396 complete respondents (on average, 70 per country), of which 293 were collected via CINT and 103 via our other dissemination tools. For a detailed description of survey respondent characteristics, see Annex 3.

1.2.1. Open invitation survey

The open invitation survey was published on the PPMI website. The survey link alongside survey dissemination materials (visuals and description) was distributed through:

- DIHs in each country and their communication channels, including direct contact (phone and email campaign) with companies identified through the hubs' databases;
- PPMI website;[4]
- DG CNECT dissemination channels;
- mailing list of the 'European industry digitalisation – the challenges ahead' workshop;
- email campaign done by the study team through contacting relevant associations and companies;
- social media campaigns (Facebook and LinkedIn pages of the hubs).

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[3] Available at: https://www.cint.com/
[4] The website post is available at: https://ppmi.lt/news-insights/ppmi-invites-industrial-companies-take-part-digitalisation-survey

During the dissemination of the survey, we also rose awareness about the study itself and offered the participants to be informed about the results and invited for potential interviews. A more detailed overview of the dissemination efforts is provided in Annex 5.

The survey visual that was translated into local languages and used in the dissemination is included in Figure 2 below.

Figure 2. Visual survey dissemination, English version

1.2.2. CINT panel aggregator

The CINT panels were launched with a pre-defined target to collect 70 responses per industry. The starting day was 10 August 2022 and the campaign lasted for 5 days.

The chosen target group profiles were based on the primary industry of their organisation selected by potential respondents. When choosing the profiles, we took into consideration the industry definitions used in this study.[5] Respondents that did not fit the country-industry pairs included in the study were screened out through the survey's respondent disqualification rules.

It should be noted that the survey sample was limited due to only a partial match between the survey target groups and the profiles available through CINT. For this reason, multiple target group profiles were selected on CINT, as illustrated in Table 1 below. In addition, the number of responses collected for the Lithuanian agrifood sector was low due to a mismatch between the target group of the study and the profiles provided by CINT.[6] This was mitigated by a sufficient number of responses collected through the open invitation survey.

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[5] Smart Industrial Remoting: remote working in non-digitalised industries – Pilot Project. Gap Analysis report. Annex 1.

[6] Lithuania had an incidence rate (completes/respondents) minimum of 10%. Due to the mismatch between the profiles available in CINT and the target group of the Company Digitalisation survey, the incidence rate dropped below 10% and the response collection was stopped.

Table 1. CINT panel target group profiles

Industry	Geographical scope	Target group profiles[7]	Wanted completes	Number of completes (number of completes included in the final dataset)
Automotive	Hungary	Automotive Manufacturing	70	71 (61)
Retail	Poland	Retail Wholesale	70	69 (59)
Textile	Portugal	Fashion, apparel Manufacturing	70	69 (61)
Agrifood[8]	Lithuania	Agriculture/fishing Manufacturing Hospitality, tourism Consumer packaged goods Retail[9]	75	14 (12)
Construction	Romania	Construction Engineering Architecture Carpentry, electrical installations, plumbing	70	70 (61)

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[7] Based on the primary industry of their organisation indicated by potential respondents.

[8] Because the incidence rate of the survey dropped to below 10%, on 11 August 2022 the survey was amended to include more detailed sub-categories of the agrifood sector in question 4 (agriculture; food and beverage production; food retail and wholesale; food services; suppliers of seeds; pesticides and/or fertilizer; machinery and repair for the agrifood sector; transport and logistics for the agrifood sector; food packaging).

[9] Added due to a revised estimate of <55 feasible completes.

1.3.   Post-fielding

After closing the survey, the data were analysed using **descriptive statistics**, which were summarised using easy-to-interpret and visually appealing graphs that serve as inputs for this report and study promotional materials. For detailed results, see Annex 4.

Having merged the responses collected through the open invitation and CINT, we proceeded with the data cleaning. First, we analysed the responses for the presence of duplicates, meaning those which had the same IP address and/or contact email. We disqualified some of them based on extra background information about the respondents provided by CINT. We also identified and disqualified the low-quality responses following criteria such as:

- completed by the employees with occupations that do not give a good overview of the company's digitalisation, investments and intentions connected to innovations (e.g., drivers, doctors, security guards, etc.);

- completed in an unusually low time that is significantly lower than the average length of interview (LOI), i.e., less than 3 minutes;

- chose the same answer in the multiple-choice questions (e.g., the first option, the last option, 'I don't know' where possible);

- entered suspicious responses in the open-ended questions (e.g., 'family support loan' in Q14);

- entered suspicious or unusual additional information about their company (e.g., a low number of employees but a very high turnover volume).

In addition to disqualifying responses by certain criteria, we also considered some of the partial responses as complete. This concerned the cases when a person quit the survey without answering some of the non-required questions (e.g., Q15 and Q16), or the questions in the 'Additional information' section, since those were not crucial for the problem identification itself. There were ten such cases in total. Other partial responses were disqualified and were not included in the data analysis. The resulting sample was 350 responses.

Annex 2. Company Digitalisation survey questionnaire

Thank you for agreeing to share your opinion and experience regarding the uptake of digital technologies in your company.

This survey is a part of a study on Smart Industrial Remoting. The goal of the study is to propose measures that can support digitalisation of European industrial companies and help them to overcome challenges that they face when digitalising.

The survey will take 5-10 minutes of your time. Your opinion will help us to better understand the main problems faced by companies when adopting digital technologies. This will allow us to better shape the support activities provided to industrial companies through the European Digital Innovation Hubs.

Please read our privacy statement for more information on how we handle your data for the purpose of the study.

ABOUT YOU

1. Please specify in which country you are based * [dropdown country-list]
    a. Hungary
    b. Lithuania
    c. Poland
    d. Portugal
    e. Romania
    f. None of the above [Disqualify]

2. Are you currently employed by a company or do you own a company? *
    a. Yes
    b. No [Disqualify]

3. [If 'a' is selected in Q2] Which of the following best describes your role within the company? *

    If you are employed by or own multiple companies, please think about the one which requires most of your working time. Please note: In this survey, we will refer to the company that you own or work for as "your company".
    a. Owner or partner
    b. Management
    c. Other employee, please specify_____

4. [If 'a' is selected in Q2] In which industry does your company operate? *

    Please, move the mouse cursor over the options to see a more detailed description of each industry.

    If the company operates in several industries, select the industry which generates most of the revenue.

    a. Agrifood
    b. Automotive
    c. Construction

d. Retail
e. Textile
f. Other, please specify ____

[respondents will be disqualified if they select a different industry from the one being studied in the country that they chose in Q1, unless they choose 'other, please specify'; moving mouse over each industry highlights its definition]

DIGITAL TRANSFORMATION

5. Please indicate for which purpose digital technologies (tools, solutions, processes) are used in your company? Please tick all that apply. *
   a. To interact with customers, partners, or suppliers
   b. To collect and analyse data for decision-making
   c. To digitalise and integrate business processes
   d. To manage and plan our production
   e. Other, please specify_____
   f. I don't know

6. How would you assess your company's digital maturity as compared to similar companies operating in this industry? *

   Digital maturity is company's ability to adopt and create value through the use of digital technologies.

   a. Much more digitally mature than other companies operating in my industry
   b. Somewhat more digitally mature than other companies operating in my industry
   c. Around the same level of digital maturity
   d. Somewhat less digitally mature than other companies operating in my industry
   e. Much less digitally mature than other companies operating in my industry
   f. I don't know

7. Which areas of your company's operations have been the focus of digital technology related investments in the last 2 years? Please tick all that apply. *
   a. Product or service design and engineering (including research, development, and innovation)
   b. Purchasing and procurement
   c. Inbound logistics and warehousing
   d. Operations (production of physical goods/manufacturing, packaging, maintenance, services)
   e. Marketing, sales & customer services (customer management, order processing, helpdesk, etc.)
   f. Delivery (outbound logistics, eInvoices, etc.)
   g. Project planning and management
   h. Support functions (e.g., administration, human resources)
   i. Collaboration with other internal site locations or other companies in the value chain
   j. (Cyber)security and compliance with Personal Data regulations/GDPR
   k. Other, please specify _____
   l. There were no digital technology related investments in the last 2 years
   m. I don't know

8. [If any option other than 'm' or 'l' is selected in Q7] Could you provide examples of specific technologies (tools, solutions, processes) adopted by your company? [Open-ended question]

9. [If any option other than 'm' or 'l' is selected in Q7] What are the key factors affecting your company's decision to invest in digital technologies? Please tick all that apply. *
    a. Financial support (e.g., grants, loans)
    b. Tax breaks
    c. Non-financial support (e.g., trainings, consultations, expertise)
    d. Regulatory requirements
    e. Strengthening the resilience to external shocks
    f. Changes in end-consumer expectations
    g. Pressure from other companies in the value chain or B2B clients
    h. Increasing profitability
    i. Increasing market share
    j. Other, please specify _____
    k. I don't know

10. Which of the below technologies are currently not present in your company but would be necessary to adopt in the next 2 years for your company to remain competitive? Please tick all that apply. *
    a. Information Management Systems (e.g., Enterprise Resources Planning, Product Lifecycle Management, Customer Relationship Management, Supply Chain Management, e-invoicing)
    b. Remote business collaboration tools (e.g., teleworking platform, videoconferencing, virtual learning, business-specific)
    c. Online presence (e.g., use of social media, enterprise website)
    d. E-Commerce sales (e.g., Business-to-Consumer, Business-to-Business)
    e. Cloud computing
    f. Artificial intelligence and big data analytics
    g. Internet of Things (IoT) and Industrial Internet of Things (I-IoT), sensors
    h. Additive manufacturing (e.g., 3D printers)
    i. Simulation & digital twins (e.g., real-time digital representations of physical objects/processes)
    j. Robotics and autonomous devices
    k. Virtual reality, augmented reality
    l. Other, please specify _____
    m. I don't know

11. [If any option other than 'm' is selected in Q10] To what extent is your company planning to take actions to adopt these digital technologies in the next 2 years? *
    a. The company is planning to adopt all technologies needed to stay competitive
    b. The company is planning to adopt some of these technologies needed to stay competitive
    c. Currently there are no plans in place for the identified technologies
    d. I don't know

12. In your opinion, what are the main obstacles your company faces in adopting the identified digital technologies? Please select all that apply. *
    a. Lack of human resources
    b. This is not a priority for company management

c. Lack of knowledge about relevant digital technologies
d. Lack of skills to implement the latest technologies
e. Lack of financial resources
f. It would not bring added value to the company due to our size
g. It does not fit with our processes and the business model
h. It carries additional risks or poses further uncertainties
i. Other, please specify _____
j. The company does not face any obstacles
k. I don't know

13. During the last 5 years, has your company received financial support from any public initiatives financed by regional, national or European funds aimed to promote the company's digitalisation? *
   a. Yes
   b. No
   c. I don't know

14. [If option 'a' is selected in Q13] Please, elaborate on the type of financial support you received and from which programme. [Open-ended question]

IMPACT OF COVID-19 ON YOUR COMPANY

15. What was the impact of the COVID-19 pandemic on your company? Please, select all options that apply.
   a. Reduced turnover
   b. Drop in demand for your company's products
   c. Staff lay-off
   d. Temporary shut-downs or reduced operations due to social distancing restrictions and closures
   e. Switching to remote operations due to social distancing restrictions
   f. Supply chain issues
   g. Other, please specify _____
   h. The COVID-19 pandemic had no impact on the company
   i. I don't know

16. Did the COVID-19 pandemic have any effect on of the adoption of digital technologies (tools, solutions, processes) in your company?
   a. Yes, it contributed to a faster adoption of digital technologies
   b. No, it did not have any effect
   c. Yes, we had to drop or postpone certain investments related to the adoption of digital technologies
   d. Other, please specify _____
   e. I don't know

ADDITIONAL INFORMATION

17. How many employees does the company currently have? *
   a. 1-9
   b. 10-49
   c. 50-249
   d. 250 or more

18. What was the annual turnover of the company for the year 2021? *
    a. Less than EUR 2 million
    b. EUR 2 – 10 million
    c. EUR 10 – 50 million
    d. EUR 50 million or more
    e. I don't know

This online survey is a part of a broader study, the goal of which is to propose measures that can support digitalisation of European industrial companies, especially SMEs. The study focuses on five industries: construction, retail, automotive, agrifood and textile. During the study, we will organise several public events to share our findings and gather insights from industry players.

19. Would you be interested to receive information about the workshops organised by the study team? *
    a. Yes
    b. No

20. Would you be interested to be informed about the results of the study? *
    a. Yes
    b. No

21. We might contact some survey participants and invite them for interviews to further discuss your experiences. Do you agree to be contacted for the purpose of an interview? *
    a. Yes
    b. No

22. [If 'a' is selected in any of Q19, Q20 or Q21] Please, share your email address with us. *

THANK YOU!

Thank you for taking our survey. Your response is very important to us.
You can now check out the webpage of our study!

DISQUALIFY PAGE

Sorry, you do not qualify to take this survey. Thank you for answering the previous questions!

Annex 3. Company Digitalisation survey respondent characteristics

A total of 1,545 responses were collected throughout the fielding phase. For a breakdown of the completed, disqualified, partial and removed responses, see the table below.

Table 2. Summary of the survey responses by status

Status	Complete	Disqualified	Partial	Removed	Total
Before data cleaning	396	955	194	–	1,545
After data cleaning	350	955	–	240	1,545

A total of 254 complete responses were collected through the CINT panels, while 96 responses were collected through the other dissemination channels. For the breakdown of these responses by industry, see the table below.

Table 3. Summary of the complete survey responses by industry

Industry	Automotive	Agrifood	Retail	Textile	Construction	Total
CINT	61	12	59	61	61	254
Other dissemination channels	16	39	8	14	19	96
Total	77	51	67	75	80	350

The complete responses were distributed relatively equally among companies of different sizes, without any of the categories dominating the sample. For a further breakdown, see the table below.

Table 4. Summary of the complete survey responses by company size

Company size	Number of responses
1-9 employees	82
10-49 employees	90
50-249 employees	84
250 or more employees	86

Company size	Number of responses
Total	342

Note: the total number is different from other summaries since it does not include those responses that were requalified from 'partial' to 'complete' if they had filled in the survey up to Question 16 included and skipped the 'Additional information' section.

The largest share of the complete responses (around 70% of those who could provide information about the turnover) came from companies with a yearly turnover of less than EUR10 million. Responses from companies with a higher turnover constituted less than one third. For a more detailed breakdown, see the table below.

Table 5. Summary of the complete survey responses by company turnover

Company turnover	Number of responses
Less than 2 million EUR	117
2 – 10 million EUR	77
10 – 50 million EUR	48
50 million EUR or more	32
I don't know	68
Total	342

Note: the total number is different from other summaries since it does not include those responses that were requalified from 'partial' to 'complete' if they had filled in the survey up to Question 16 included and skipped the 'Additional information' section.

Annex 4. Detailed Company Digitalisation survey results

Table 6. Detailed survey results

	AGRIFOOD	AUTOMOTIVE	CONSTRUCTION	RETAIL	TEXTILE	TOTAL	AGRIFOOD	AUTOMOTIVE	CONSTRUCTION	RETAIL	TEXTILE	TOTAL
	TOTAL NUMBER						PERCENTAGE					
Question 5. Please indicate for which purpose digital technologies (tools, solutions, processes) are used in your company? Please tick all that apply.												
To interact with customers, partners, or suppliers	41	51	58	52	59	261	80.4%	66.2%	72.5%	77.6%	74.6%	74.6%
To collect and analyse data for decision-making	34	45	37	34	46	196	66.7%	58.4%	46.3%	50.7%	56.0%	56.0%
To digitalise and integrate business processes	28	40	44	25	44	181	54.9%	51.9%	55.0%	37.3%	51.7%	51.7%
To manage and plan our production	36	49	49	29	57	220	70.6%	63.6%	61.3%	43.3%	62.9%	62.9%
Other purpose	3	5	3	2	4	18	5.9%	6.5%	3.8%	3.0%	5.1%	5.1%
I don't know	1	1	8	5	2	17	2.0%	1.3%	10.0%	7.5%	4.9%	4.9%
Total	**51**	**77**	**80**	**67**	**75**	**350**	**14.5%**	**22.0%**	**22.9%**	**19.1%**	**21.4%**	**100%**
Question 6. How would you assess your company's digital maturity as compared to similar companies operating in this industry? Digital maturity is company's ability to adopt and create value through the use of digital technologies.												

	AGRIFOOD	AUTOMOTIVE	CONSTRUCTION	RETAIL	TEXTILE	TOTAL	AGRIFOOD	AUTOMOTIVE	CONSTRUCTION	RETAIL	TEXTILE	TOTAL
	TOTAL NUMBER						PERCENTAGE					
Much less digitally mature than other companies operating in my industry	4	5	5	2	7	23	7.8%	6.5%	6.3%	3.0%	9.3%	6.6%
Somewhat less digitally mature than other companies operating in my industry	6	14	9	11	11	51	11.8%	18.2%	11.3%	16.4%	14.7%	14.6%
Around the same level of digital maturity	19	28	24	26	20	118	37.3%	36.4%	30.0%	38.8%	26.7%	33.7%
Somewhat more digitally mature than other companies operating in my industry	11	14	17	14	20	76	21.6%	18.2%	21.3%	20.9%	26.7%	21.7%
Much more digitally mature than other companies operating in my industry	10	13	20	11	15	69	19.6%	16.9%	25.0%	16.4%	20.0%	19.7%
I don't know	1	2	5	3	2	13	2.0%	2.6%	6.3%	4.5%	2.7%	3.7%
Total	51	77	80	67	75	350	14.5%	22.0%	22.9%	19.1%	21.4%	100%

	AGRIFOOD	AUTOMOTIVE	CONSTRUCTION	RETAIL	TEXTILE	TOTAL	AGRIFOOD	AUTOMOTIVE	CONSTRUCTION	RETAIL	TEXTILE	TOTAL
	TOTAL NUMBER						PERCENTAGE					
Question 7. Which areas of your company's operations have been the focus of digital technology related investments in the last 2 years? Please tick all that apply.												
Product or service design and engineering (including research, development, and innovation)	22	25	37	10	31	125	43.1%	32.5%	46.3%	14.9%	41.3%	35.7%
Purchasing and procurement	8	22	28	50	32	140	15.7%	28.6%	35.0%	74.6%	42.7%	40.0%
Inbound logistics and warehousing	9	37	24	33	35	138	17.6%	48.1%	30.0%	49.3%	46.7%	39.4%
Operations (production of physical goods/manufacturing, packaging, maintenance, services)	15	44	20	14	30	123	29.4%	57.1%	25.0%	20.9%	40.0%	35.1%
Marketing, sales & customer services (customer management, order processing, helpdesk, etc.)	14	14	19	43	29	119	27.5%	18.2%	23.8%	64.2%	38.7%	34.0%

	AGRIFOOD	AUTOMOTIVE	CONSTRUCTION	RETAIL	TEXTILE	TOTAL	AGRIFOOD	AUTOMOTIVE	CONSTRUCTION	RETAIL	TEXTILE	TOTAL
	TOTAL NUMBER						PERCENTAGE					
Delivery (outbound logistics, eInvoices, etc.)	6	13	21	27	27	94	11.8%	16.9%	26.3%	40.3%	36.0%	26.9%
Project planning and management	16	8	24	16	31	95	31.4%	10.4%	30.0%	23.9%	41.3%	27.1%
Support functions (e.g., administration, human resources)	8	25	16	16	20	85	15.7%	32.5%	20.0%	23.9%	26.7%	24.3%
Collaboration with other internal site locations or other companies in the value chain	10	10	9	15	12	56	19.6%	13.0%	11.3%	22.4%	16.0%	16.0%
(Cyber)security and compliance with Personal Data regulations/GDPR	6	13	20	21	18	78	11.8%	16.9%	25.0%	31.3%	24.0%	22.3%
Other operations	0	2	3	1	1	7	0.0%	2.6%	3.8%	1.5%	1.3%	2.0%
There were no digital technology	6	2	4	2	1	15	11.8%	2.6%	5.0%	3.0%	1.3%	4.3%

	AGRIFOOD	AUTOMOTIVE	CONSTRUCTION	RETAIL	TEXTILE	TOTAL	AGRIFOOD	AUTOMOTIVE	CONSTRUCTION	RETAIL	TEXTILE	TOTAL
	TOTAL NUMBER						PERCENTAGE					
related investments in the last 2 years												
I don't know	1	3	5	3	2	14	2.0%	3.9%	6.3%	4.5%	2.7%	4.0%
Total	51	77	80	67	75	350	14.5%	22.0%	22.9%	19.1%	21.4%	100%
Question 9. What are the key factors driving your company's decision to invest in digital technologies? Please select three most important ones.												
Financial support (e.g., grants, loans)	15	29	33	16	22	115	34.1%	40.3%	46.5%	25.8%	30.6%	35.8%
Tax breaks	5	15	11	8	8	47	11.4%	20.8%	15.5%	12.9%	11.1%	14.6%
Non-financial support (e.g., trainings, consultations, expertise)	8	14	8	11	11	52	18.2%	19.4%	11.3%	17.7%	15.3%	16.2%
Regulatory requirements	3	21	10	12	10	56	6.8%	29.2%	14.1%	19.4%	13.9%	17.4%
Strengthening the resilience to external shocks	15	13	19	13	23	83	34.1%	18.1%	26.8%	21.0%	31.9%	25.9%
Changes in end-consumer expectations	12	22	11	14	20	79	27.3%	30.6%	15.5%	22.6%	27.8%	24.6%
Pressure from other companies in the value	4	14	1	7	15	41	9.1%	19.4%	1.4%	11.3%	20.8%	12.8%

	AGRIFOOD	AUTOMOTIVE	CONSTRUCTION	RETAIL	TEXTILE	TOTAL	AGRIFOOD	AUTOMOTIVE	CONSTRUCTION	RETAIL	TEXTILE	TOTAL
	TOTAL NUMBER						PERCENTAGE					
chain or B2B clients												
Increasing profitability	25	31	35	31	37	159	56.8%	43.1%	49.3%	50.0%	51.4%	49.5%
Increasing market share	15	11	17	29	15	87	34.1%	15.3%	23.9%	46.8%	20.8%	27.1%
Other factors	1	1	4	0	3	9	2.3%	1.4%	5.6%	0.0%	4.2%	2.8%
I don't know	0	3	4	5	4	16	0.0%	4.2%	5.6%	8.1%	5.6%	5.0%
Total	**44**	**72**	**71**	**62**	**72**	**321**	**13.7%**	**22.4%**	**22.1%**	**19.3%**	**22.4%**	**100%**

Question 10. Which of the below technologies are currently not present in your company but would be necessary to adopt in the next 2 years for your company to remain competitive? Please tick all that apply.

	AGRIFOOD	AUTOMOTIVE	CONSTRUCTION	RETAIL	TEXTILE	TOTAL	AGRIFOOD	AUTOMOTIVE	CONSTRUCTION	RETAIL	TEXTILE	TOTAL
Information Management Systems (e.g., Enterprise Resources Planning, Product Lifecycle Management, Customer Relationship Management, Supply Chain Management, e-invoicing)	20	27	20	10	24	101	39.2%	35.1%	25.0%	14.9%	32.0%	28.9%

	AGRIFOOD	AUTOMOTIVE	CONSTRUCTION	RETAIL	TEXTILE	TOTAL	AGRIFOOD	AUTOMOTIVE	CONSTRUCTION	RETAIL	TEXTILE	TOTAL
	TOTAL NUMBER						PERCENTAGE					
Remote business collaboration tools (e.g., teleworking platform, videoconferencing, virtual learning, business-specific)	8	21	21	16	17	83	15.7%	27.3%	26.3%	23.9%	22.7%	23.7%
Online presence (e.g., use of social media, enterprise website)	14	19	18	26	24	101	27.5%	24.7%	22.5%	38.8%	32.0%	28.9%
E-Commerce sales (e.g., Business-to-Consumer, Business-to-Business)	14	13	16	10	15	68	27.5%	16.9%	20.0%	14.9%	20.0%	19.4%
Cloud computing	6	11	17	18	12	64	11.8%	14.3%	21.3%	26.9%	16.0%	18.3%
Artificial intelligence and big data analytics	12	17	21	24	21	95	23.5%	22.1%	26.3%	35.8%	28.0%	27.1%
Internet of Things (IoT) and Industrial Internet of	6	4	16	8	14	48	11.8%	5.2%	20.0%	11.9%	18.7%	13.7%

	AGRIFOOD	AUTOMOTIVE	CONSTRUCTION	RETAIL	TEXTILE	TOTAL	AGRIFOOD	AUTOMOTIVE	CONSTRUCTION	RETAIL	TEXTILE	TOTAL
	TOTAL NUMBER						PERCENTAGE					
Things (I-IoT), sensors												
Additive manufacturing (e.g., 3D printers)	6	18	18	12	19	73	11.8%	23.4%	22.5%	17.9%	25.3%	20.9%
Simulation & digital twins (e.g., real-time digital representations of physical objects/processes)	4	10	20	9	17	60	7.8%	13.0%	25.0%	13.4%	22.7%	17.1%
Robotics and autonomous devices	18	23	15	16	20	92	35.3%	29.9%	18.8%	23.9%	26.7%	26.3%
Virtual reality, augmented reality	11	14	25	10	22	82	21.6%	18.2%	31.3%	14.9%	29.3%	23.4%
Other technologies	0	1	1	0	0	2	0.0%	1.3%	1.3%	0.0%	0.0%	0.6%
I don't know	4	8	6	7	7	32	7.8%	10.4%	7.5%	10.4%	9.3%	9.1%
Total	**51**	**77**	**80**	**67**	**75**	**350**	**14.5%**	**22.0%**	**22.9%**	**19.1%**	**21.4%**	**100%**
Question 11. To what extent is your company planning to take action to adopt these digital technologies in the next 2 years?												

	AGRIFOOD	AUTOMOTIVE	CONSTRUCTION	RETAIL	TEXTILE	TOTAL	AGRIFOOD	AUTOMOTIVE	CONSTRUCTION	RETAIL	TEXTILE	TOTAL
	TOTAL NUMBER						PERCENTAGE					
Currently there are no plans in place for the identified technologies	7	13	15	13	14	62	14.9%	18.8%	20.3%	21.7%	20.6%	19.5%
I don't know	1	5	6	4	6	22	2.1%	7.2%	8.1%	6.7%	8.8%	6.9%
The company is planning to adopt all technologies needed to stay competitive	13	17	27	21	32	110	27.7%	24.6%	36.5%	35.0%	47.1%	34.6%
The company is planning to adopt some of these technologies needed to stay competitive	26	34	26	22	16	124	55.3%	49.3%	35.1%	36.7%	23.5%	39.0%
Total	**47**	**69**	**74**	**60**	**68**	**318**	**14.8%**	**21.7%**	**23.2%**	**18.9%**	**21.4%**	**100%**
Question 12. In your opinion, what are the main obstacles your company faces in adopting digital technologies? Please select all that apply.												
Lack of human resources	23	45	20	17	23	128	45.1%	58.4%	25.0%	25.4%	30.7%	36.6%
This is not a priority for company management	4	16	11	14	17	62	7.8%	20.8%	13.8%	20.9%	22.7%	17.7%

	AGRIFOOD	AUTOMOTIVE	CONSTRUCTION	RETAIL	TEXTILE	TOTAL	AGRIFOOD	AUTOMOTIVE	CONSTRUCTION	RETAIL	TEXTILE	TOTAL
	TOTAL NUMBER						PERCENTAGE					
Lack of knowledge about relevant digital technologies	19	21	22	14	13	89	37.3%	27.3%	27.5%	20.9%	17.3%	25.4%
Lack of skills to implement the latest technologies	13	23	12	13	17	78	25.5%	29.9%	15.0%	19.4%	22.7%	22.3%
Lack of financial resources	31	29	37	25	27	149	60.8%	37.7%	46.3%	37.3%	36.0%	42.6%
It would not bring added value to the company due to our size	5	5	12	5	10	37	9.8%	6.5%	15.0%	7.5%	13.3%	10.6%
It does not fit with our processes and the business model	1	5	10	2	6	24	2.0%	6.5%	12.5%	3.0%	8.0%	6.9%
It carries additional risks or poses further uncertainties	6	5	7	13	3	34	11.8%	6.5%	8.8%	19.4%	4.0%	9.7%
Other obstacles	0	3	1	1	1	6	0.0%	3.9%	1.3%	1.5%	1.3%	1.7%

	AGRIFOOD	AUTOMOTIVE	CONSTRUCTION	RETAIL	TEXTILE	TOTAL	AGRIFOOD	AUTOMOTIVE	CONSTRUCTION	RETAIL	TEXTILE	TOTAL
	TOTAL NUMBER						PERCENTAGE					
The company does not face any obstacles	3	3	7	8	7	28	5.9%	3.9%	8.8%	11.9%	9.3%	8.0%
I don't know	0	3	5	2	5	15	0.0%	3.9%	6.3%	3.0%	6.7%	4.3%
Total	**51**	**77**	**80**	**67**	**75**	**350**	**14.5%**	**22.0%**	**22.9%**	**19.1%**	**21.4%**	**100%**
Question 13. During the last 5 years, has your company received financial support from any public initiatives financed by regional, national or European funds aimed to promote the company's digitalisation?												
Yes	17	26	21	12	26	102	33.3%	33.8%	26.3%	17.9%	34.7%	29.1%
No	26	36	47	37	27	173	51.0%	46.8%	58.8%	55.2%	36.0%	49.4%
I don't know	8	15	12	18	22	75	15.7%	19.5%	15.0%	26.9%	29.3%	21.4%
Total	**51**	**77**	**80**	**67**	**75**	**350**	**14.5%**	**22.0%**	**22.9%**	**19.1%**	**21.4%**	**100%**
Question 15. What was the impact of the COVID-19 pandemic on your company? Please select all options that apply.												
Reduced turnover	12	37	38	35	41	163	23.5%	48.1%	47.5%	52.2%	54.7%	46.6%
Drop in demand for your company's products	4	27	25	16	18	90	7.8%	35.1%	31.3%	23.9%	24.0%	25.7%
Staff lay-off	3	24	17	13	44	101	5.9%	31.2%	21.3%	19.4%	58.7%	28.9%
Temporary shut-downs or reduced operations due	7	31	28	16	31	113	13.7%	40.3%	35.0%	23.9%	41.3%	32.3%

	AGRIFOOD	AUTOMOTIVE	CONSTRUCTION	RETAIL	TEXTILE	TOTAL	AGRIFOOD	AUTOMOTIVE	CONSTRUCTION	RETAIL	TEXTILE	TOTAL
	TOTAL NUMBER						PERCENTAGE					
to social distancing restrictions and closures												
Switching to remote operations due to social distancing restrictions	19	22	23	12	14	90	37.3%	28.6%	28.8%	17.9%	18.7%	25.7%
Supply chain issues	13	31	14	20	35	113	25.5%	40.3%	17.5%	29.9%	46.7%	32.3%
Other impact	1	3	1	3	1	9	2.0%	3.9%	1.3%	4.5%	1.3%	2.6%
The COVID-19 pandemic had no impact on the company	10	3	12	10	6	41	19.6%	3.9%	15.0%	14.9%	8.0%	11.7%
I don't know	2	1	1	1	1	6	3.9%	1.3%	1.3%	1.5%	1.3%	1.7%
Total	**51**	**77**	**80**	**67**	**75**	**350**	**14.5%**	**22.0%**	**22.9%**	**19.1%**	**21.4%**	**100%**
Question 16. Did the COVID-19 pandemic have any effect on of the adoption of digital technologies (tools, solutions, processes) in your company?												
Yes, it contributed to a faster adoption of digital technologies	21	38	33	15	31	138	41.2%	49.4%	41.3%	22.4%	41.3%	39.4%

	AGRIFOOD	AUTOMOTIVE	CONSTRUCTION	RETAIL	TEXTILE	TOTAL	AGRIFOOD	AUTOMOTIVE	CONSTRUCTION	RETAIL	TEXTILE	TOTAL
	TOTAL NUMBER						PERCENTAGE					
Yes, we had to drop or postpone certain investments related to the adoption of digital technologies	6	11	23	13	10	63	11.8%	14.3%	28.8%	19.4%	13.3%	18.0%
No, it did not have any effect	20	23	19	28	25	115	39.2%	29.9%	23.8%	41.8%	33.3%	32.9%
Other, please specify	1	0	0	0	1	2	2.0%	0.0%	0.0%	0.0%	1.3%	0.6%
I don't know	3	5	5	11	8	32	5.9%	6.5%	6.3%	16.4%	10.7%	9.1%
Total	**51**	**77**	**80**	**67**	**75**	**350**	**14.5%**	**22.0%**	**22.9%**	**19.1%**	**21.4%**	**100%**
Question 17. What was the annual turnover of the company for the year 2021?												
No answer	1	3	0	0	4	8	2.0%	3.9%	0.0%	0.0%	5.3%	2.3%
Less than EUR 2 million	25	6	49	20	17	117	49.0%	7.8%	61.3%	29.9%	22.7%	33.4%
EUR 2 – 10 million	10	24	13	12	18	77	19.6%	31.2%	16.3%	17.9%	24.0%	22.0%
EUR 10 – 50 million	5	19	5	10	9	48	9.8%	24.7%	6.3%	14.9%	12.0%	13.7%
EUR 50 million or more	2	14	0	7	9	32	3.9%	18.2%	0.0%	10.4%	12.0%	9.1%

	AGRIFOOD	AUTOMOTIVE	CONSTRUCTION	RETAIL	TEXTILE	TOTAL	AGRIFOOD	AUTOMOTIVE	CONSTRUCTION	RETAIL	TEXTILE	TOTAL
	TOTAL NUMBER						PERCENTAGE					
I don't know	8	11	13	18	18	68	15.7%	14.3%	16.3%	26.9%	24.0%	19.4%
Total	**51**	**77**	**80**	**67**	**75**	**350**	**14.5%**	**22.0%**	**22.9%**	**19.1%**	**21.4%**	**100%**
Question 18. How many employees does the company currently have?												
No answer	1	3	0	0	4	8	2.0%	3.9%	0.0%	0.0%	5.3%	2.3%
1-9	22	4	30	17	9	82	43.1%	5.2%	37.5%	25.4%	12.0%	23.4%
10-49	10	11	27	21	21	90	19.6%	14.3%	33.8%	31.3%	28.0%	25.7%
50-249	12	22	18	11	21	84	23.5%	28.6%	22.5%	16.4%	28.0%	24.0%
250 or more	6	37	5	18	20	86	11.8%	48.1%	6.3%	26.9%	26.7%	24.6%
Total	**51**	**77**	**80**	**67**	**75**	**350**	**14.5%**	**22.0%**	**22.9%**	**19.1%**	**21.4%**	**100%**