Dossier for the implementation of an Agile Delphi process using the Methodology Agile Delphi (MAD)

Content

This document describes the main steps we propose for the deployment of a streamlined Delphi process, which we call Agile Delphi Methodology (MAD). This document will be filled in as we progress through the different steps, so that at the end of each Delphi process developed following MAD the complete information of the process will have been collected in it. The Figure 1 summarizes the main steps of the MAD methodology, where the agile methodology (PDCA) is combined with the steps of the traditional Delphi methodology.

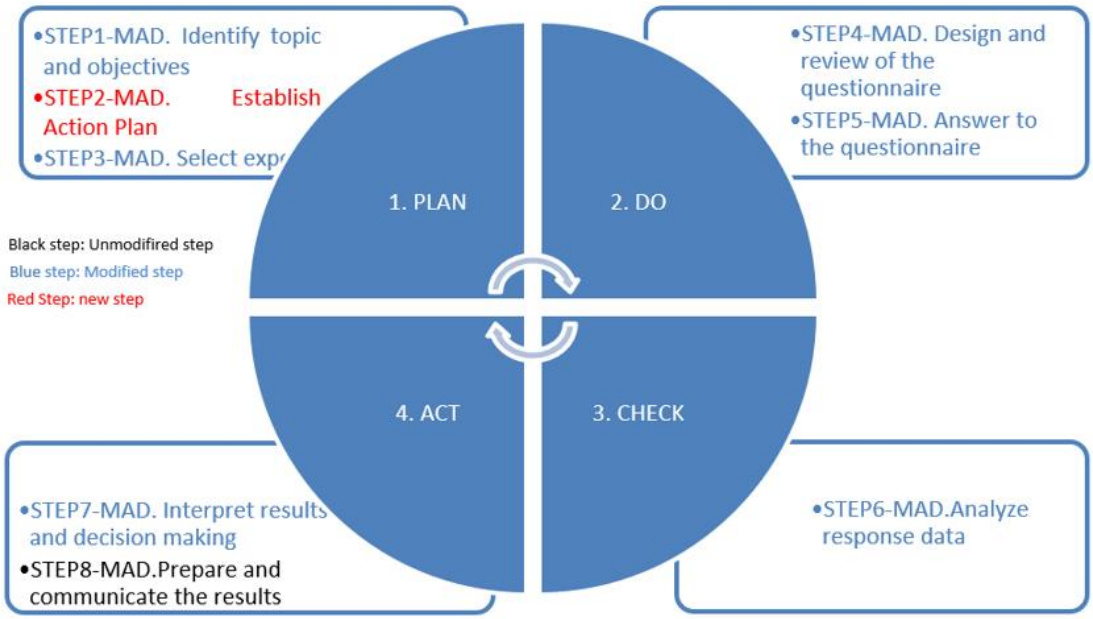


Figure 1 Summary of MAD methodology steps

Work teams:

- Delphi Process Owner Task Team initiated - IRSST Team
- Delphi expert work team - UC3M Team

Roles:

- Experts: group that has the responsibility to issue judgments and opinions, which are the core of the method.
- Coordinator: group that coordinates the process. The number of members varies from two to five people. There will be coordinators in each of the work teams.

1. PHASE: PLAN – R1

To describe the problem that you want to reflect on with the experts.

1.1 Step 1-MAD: Identify topic and objectives

After several meetings between the IRSST Team and the UC3M Team, the subject, its description, general objective and specific objectives of the study to be carried out were finally defined, see Table 1.

Time spent (in days): *10 days*

Table 1. Description of the Topic and Objectives

Subject:	Emerging Occupational Risks and Potential Benefits Derived from Digital Transformation in SMEs.
Subject Description:	Digital transformation is a process of innovation and change in organizations derived from the integration of technologies and services, which entails the possibility of the emergence of new emerging risks. It is focused on SMEs, as they represent more than 99% of the total business fabric. With this, the current DELPHI process will be able to estimate the challenges and challenges faced in this area of occupational risk prevention.
General Objective:	Identifying the impact of digital transformation Identifying new emerging scenarios subject to occupational risks.
Specific objectives: - ***Objective1:*** - ***Objective2:***	1. Determine the existence of occupational hazards and which are the ones with the greatest impact on Occupational Risk Prevention. 2. Weighing whether this digital transformation can bring positive value to prevention and the performance of the work of working people.

S	M	A	R	T	E	R
X	X	X	X	X	X	X

1.2 Step 2-MAD: Establish Action Plan

The action plan was defined. It is shown in Table 2

Table 2.Action Plan

CASE STUDY B- AGILE DELPHI METHODOLOGY					
ROUND	PHASE	STEP	START DATE	FINISH DATE	DAYS
1	1.Plan	STEP1-MAD	03/01/2022	03/11/2022	9
		STEP2-MAD	03/14/2022	03/18/2022	5
		STEP3-MAD	03/21/2022	04/20/2022	23
	2. Do	STEP4-MAD	04/18/2022	04/25/2022	6
		STEP5-MAD	04/26/2022	04/29/2022	4
	3. Check	STEP6-MAD	05/04/2022	05/04/2022	2
	4. Act	STEP7-MAD	05/04/2022	05/04/2022	1
		STEP8-MAD	05/05/2022	05/05/2022	1
2	1.Plan	STEP1-MAD	05/05/2022	05/05/2022	1
		STEP2-MAD	05/05/2022	05/05/2022	1
		STEP3-MAD	05/05/2022	05/05/2022	1
	2. Do	STEP4-MAD	05/06/2022	05/09/2022	4
		STEP5-MAD	05/10/2022	05/16/2022	5
	3. Check	STEP6-MAD	05/16/2022	05/17/2022	2
	4. Act	STEP7-MAD	05/17/2022	05/18/2022	2
		STEP8-MAD	05/19/2022	05/19/2022	1
3	1.Plan	STEP1-MAD	05/20/2022	05/20/2022	1
		STEP2-MAD	05/20/2022	05/20/2022	1
		STEP3-MAD	05/20/2022	05/21/2022	2
	2. Do	STEP4-MAD	05/21/2022	05/22/2022	2
		STEP5-MAD	05/23/2022	05/27/2022	5
	3. Check	STEP6-MAD	05/30/2022	05/31/2022	2
	4. Act	STEP7-MAD	06/01/2022	06/02/2022	2
		STEP8-MAD	06/03/2022	06/03/2022	1

1.3 Step 3-MAD: Selection and formation of the panel of experts

The final composition of the expert panel is shown in Table 3. Personal data cannot be published. They are anonymized

Table 3. Final List of Experts

Name and Surname Expert	***Institution***	***Position***	***Contact Email***
Expert1	*IRSST*		
Expert2	*IRSST*		
Expert3	*IRSST*		
Expert4	*IRSST*		
Expert5	*IRSST*		
Expert6	*IRSST*		
Expert7	*IRSST*		

Expert8	*IRSST*		
Expert9	*IRSST*		
Expert10	*IRSST*		
Expert11	*IRSST*		
Expert12	*IRSST*		
Expert13	*Quiron*		
Expert14	*Quentic*		
Expert15	*UC3M*		
Expert16	*UC3M*		

2. PHASE 2. DO – R1

To conduce a round of questionnaire, it is designed and reviewed the questionnaire of the round and the experts answer to the questionnaire.

2.1 Step 4-MAD: Questionnaire design and revision Round 1

In this step is designed the questionnaire

2.1.1 Questionnaire design Round 1

The draft questionnaire for Round 1 was developed by the Delphi Process Owner Task Team - IRSST Team, taking into account the topic and objectives identified. The draft questionnaire was defined in Table 4.

Time spent (in days): *15 days*

Table4. Draft Questionnaire - Round 1

Question 1:	Does the company/s in which you have worked in the last few years use ICT?
Possible answers to be selected by the expert:	a) Yes b) No
Specific objective covered	
Question 2:	If so, for how long?
Possible answers to be selected by the expert:	a. Categories {days, weeks, months, years} -> 1 to 4
Specific objective covered	
Question 3:	Age range
Possible answers to be selected by the expert:	a. Categories {18 to 32, 33 to 45, 46 to 54, Over 54}
Specific objective covered	
Question 4:	Genre
Possible answers to be selected by the expert:	a. Male b. Woman

	c. I prefer not to say d. Others
Specific objective covered	
Question 5:	Occupation:
Possible answers to be selected by the expert:	a. Advice on occupational safety b. Responsible for safety at work c. Superior Technician in PRL f. Technician in PRL of an external prevention service. g. Technician in PRL of own prevention service h. Senior technician in professional risks
Specific objective covered	
Question 6:	Post
Possible answers to be selected by the expert:	a. Manager b. PRL Technician c. Responsible for PRL Area d. Health and Safety Technician e. Management support technician f. ICT related
Specific objective covered	
Question 7:	What is your industry?
Possible answers to be selected by the expert:	a. Agriculture and fishing b. Industry c. Construction d. Services e. Not defined f. Academics g. Administration
Specific objective covered	
Question 8:	You believe that the digital transformation in SMEs will lead to an increase in risks that have an impact on the safety and health of workers.
Possible answers to be selected by the expert:	a) If b) No (branch to question 10)
Specific objective covered	Specific Objective 1
Question 9:	From the point of view of the ORP, what risks do you think the digital transformation produces in SMEs? (multiple answer).
Possible answers to be selected by the expert:	a. New emerging occupational hazards will appear b. It is perceived as the source that generates the greatest impact on occupational health and safety. c. New cross-cutting risks will emerge d. Increased occupational hazards due to sensor malfunctions, software failures, incorrect or malicious use by people (cybersecurity), electromagnetic interference. e. Occupational risks due to the vulnerability of computer systems. f. Known risks will continue to emerge in new contexts and occupational sectors. g. Occupational risks due to loss of skills due to digitalization. h. Difficulty in the management of occupational risk prevention.
Specific objective covered	Specific Objective 1

Question 9:	From a PRL point of view, what benefits do you think the digital transformation produces in SMEs? (multiple answer).
Possible answers to be selected by the expert:	a. Certain risks will be eliminated or reduced. b. improves working conditions c. New opportunities will appear for companies and workers, generating employment. d. Competitive advantages among them: more efficient processes and lower costs; production of higher quality and precision. e. improved decision making f. reduction of gender differences g. reduction of repetitive and hazardous tasks h. Increased labor flexibility and autonomy in the self-management of work. i. General improvement in the safety aspects of equipment and environmental conditions. j. New PPE devices and smart wearables increase the protection of people.
Specific objective covered	Specific Objective 1
Question 10:	You believe that the digital transformation in occupational risk prevention in SMEs will produce an increase in psychosocial risks (repercussions on the safety and health of workers in mental health).
Possible answers to be selected by the expert:	a) Yes b) No
Specific objective covered	Specific Objective 1
Question 11:	Do you think Digital Transformation has a negative impact on organizational risks?
Possible answers to be selected by the expert:	a) Yes b) No
Specific objective covered	Specific Objective 1
Question 12:	Do you think Digital Transformation has a negative impact on security risks?
Possible answers to be selected by the expert:	a) Yes b) No
Specific objective covered	Specific Objective 1
Question 13:	Do you think Digital Transformation has a negative impact on industrial hygiene risks?
Possible answers to be selected by the expert:	a) Yes b) No
Specific objective covered	Specific Objective 1
Question 14:	Do you think that new technologies will be able to mitigate psychosocial risks by collecting data from workers and identifying basic emotions?
Possible answers to be selected by the expert:	Scale (strongly agree .....strongly disagree)
Specific objective covered	Specific Objective 2
Question 15:	One of the issues that generates an ethical debate is the existing discrimination and inequality that society generates. Do you believe that the digital transformation of companies will be inclusive?

Possible answers to be selected by the expert:	a) Yes b) No c) Don't know or no answer
Specific objective covered	Specific Objective 2
Question 16:	To address the challenges posed by a digital transformation in companies. in terms of occupational health and safety, we must start with a single approach: put people at the center because any transformation, whether digital or not, starts with them. How do you agree with the above statement?
Possible answers to be selected by the expert:	Scale (strongly agree .....strongly disagree)
Specific objective covered	Specific Objective 2
Question 17:	In your opinion, what are the Challenges and Trends of digital transformation in companies and in the performance of employees? (open answer with two fields and character limit)
Possible answers to be selected by the expert:	Two-field, open-ended response with character limit
Specific objective covered	Additional information on digital transformation

2.1.2Questionnaire review and feedback Round 1

A meeting was held to review and provide feedback on the draft questionnaire. The IRRST Team and the UC3M Team participated in the meeting. At the meeting the following decisions were made by the UC3M Team:

Question 8:	You believe that the digital transformation in SMEs will lead to an increase in risks that have an impact on the safety and health of workers.
Possible answers to be selected by the expert:	a) If b) No (branch to question 10)
Specific objective covered	Specific Objective 1
Question 9:	From the point of view of the ORP, what risks do you think the digital transformation produces in SMEs? (multiple answer).
Possible answers to be selected by the expert:	a. New emerging occupational hazards will appear b. It is perceived as the source that generates the greatest impact on occupational health and safety. c. New cross-cutting risks will emerge d. Increased occupational hazards due to sensor malfunctions, software failures, incorrect or malicious use by people (cybersecurity), electromagnetic interference. e. Occupational risks due to the vulnerability of computer systems. f. Known risks will continue to emerge in new contexts and occupational sectors. g. Occupational risks due to loss of skills due to digitalization. h. Difficulty in the management of occupational risk prevention.
Specific objective covered	Specific Objective 1
Question 9:	From a PRL point of view, what benefits do you think the digital transformation produces in SMEs? (multiple answer).
Possible answers to be selected by the expert:	a. Certain risks will be eliminated or reduced. b. improves working conditions

	c. New opportunities will appear for companies and workers, generating employment. d. Competitive advantages among them: more efficient processes and lower costs; production of higher quality and precision. e. improved decision making f. reduction of gender differences g. reduction of repetitive and hazardous tasks h. Increased labor flexibility and autonomy in the self-management of work. i. General improvement in the safety aspects of equipment and environmental conditions. j. New PPE devices and smart wearables increase the protection of people.
Specific objective covered	Specific Objective 1
Question 10:	You believe that the digital transformation in occupational risk prevention in SMEs will produce an increase in psychosocial risks (repercussions on the safety and health of workers in mental health).
Possible answers to be selected by the expert:	c) Yes d) No
Specific objective covered	Specific Objective 1
Question 11:	Do you think Digital Transformation has a negative impact on organizational risks?
Possible answers to be selected by the expert:	c) Yes d) No
Specific objective covered	Specific Objective 1
Question 12:	Do you think Digital Transformation has a negative impact on security risks?
Possible answers to be selected by the expert:	c) Yes d) No
Specific objective covered	Specific Objective 1
Question 13:	Do you think Digital Transformation has a negative impact on industrial hygiene risks?
Possible answers to be selected by the expert:	c) Yes d) No
Specific objective covered	Specific Objective 1
Question 14:	Do you think that new technologies will be able to mitigate psychosocial risks by collecting data from workers and identifying basic emotions?
Possible answers to be selected by the expert:	Scale (strongly agree .....strongly disagree)
Specific objective covered	Specific Objective 2
Question 15:	One of the issues that generates an ethical debate is the existing discrimination and inequality that society generates. Do you believe that the digital transformation of companies will be inclusive?
Possible answers to be selected by the expert:	d) Yes e) No f) Don't know or no answer
Specific objective covered	Specific Objective 2

Question 16:	To address the challenges posed by a digital transformation in companies. in terms of occupational health and safety, we must start with a single approach: put people at the center because any transformation, whether digital or not, starts with them. How do you agree with the above statement?
Possible answers to be selected by the expert:	Scale (strongly agree .....strongly disagree)
Specific objective covered	Specific Objective 2
Question 17:	In your opinion, what are the Challenges and Trends of digital transformation in companies and in the performance of employees? (open answer with two fields and character limit)
Possible answers to be selected by the expert:	Two-field, open-ended response with character limit
Specific objective covered	Additional information on digital transformation

After analyzing the questions, it has been decided that in order to identify the risks (objective 1) and benefits (objective 2) produced by digital transformation in Burnout Syndrome in SMEs by the experts, 3 rounds will be done:

- 1st round: where there will be sociodemographic questions and two questions: one question asking about risks and the other about benefits. In both questions, the answer will be multi-answer and in addition the experts will be able to add other unidentified risks and benefits.
- 2nd round: the experts will prioritize the risks and benefits identified in the first round. Also, they will respond questions about Bournout syndrome in the SME companies
- 3rd round: specific questions will be asked about the risks, benefits, factors and mechanisms to mitigate Bournout Syndrome in order to reflect on their opinions.

For this reason, after analyzing the questions of the first round, the UC3M Team and the IRSST Team decided to leave in Round 1 from question number 1 to question number 10 of the draft defined by the IRSST Team. The rest of the questions, depending on the experts' answers, will be susceptible to be used in subsequent rounds if required.

Time spent (in days): *2 days*

2.1.3 Review of the modified questionnaire in Round 1

Time spent (in days): *4 days*
Finally, the questions in the Round 1 questionnaire will be as shown in Table 5.

Table 5. Final Questionnaire - Round 1

Question 1:	Does the company/s in which you have worked in the last few years use ICT?
Possible answers to be selected by the expert:	Yes No
Specific objective covered	Sociodemographic
Question 2:	If so, for how long?
Possible answers to be selected by the expert:	a. Categories {days, weeks, months, years} -> 1 to 4
Specific objective covered	Sociodemographic

Question 3:	Age range
Possible answers to be selected by the expert:	a. Categories {18 to 32, 33 to 45, 46 to 54, Over 54}
Specific objective covered	Sociodemographic
Question 4:	Genre
Possible answers to be selected by the expert:	a. Male b. Woman c. I prefer not to say d. Others
Specific objective covered	Sociodemographic
Question 5:	Occupation:
Possible answers to be selected by the expert:	a. Advice on occupational safety b. Responsible for safety at work c. Superior Technician in PRL f. Technician in PRL of an external prevention service. g. Technician in PRL of own prevention service h. Senior technician in professional risks
Specific objective covered	Sociodemographic
Question 6:	Post
Possible answers to be selected by the expert:	a. Directivo b. PRL Technician c. Responsible for PRL Area d. Health and Safety Technician e. Management support technician f. ICT related
Specific objective covered	Sociodemographic
Question 7:	What is your industry?
Possible answers to be selected by the expert:	a. Agriculture and fishing b. Industry c. Construction d. Services e. Not defined f. Academics g. Administration
Specific objective covered	Sociodemographic
Question 9:	From an ORP point of view, what risks do you think the digital transformation produces in SMEs? (multiple answer).
Possible answers to be selected by the expert:	a. New emerging occupational hazards (techno-stress, ergonomic, techno-addiction) will appear. b. It is perceived as the source that generates the greatest impacts on occupational health and safety (organizational, psychosocial, occupational, safety, industrial hygiene, cybersecurity). c. New cross-cutting risks will emerge (produced by cobots, robots, chatbots, additive manufacturing, augmented reality, exoskeletons). d. Increased occupational hazards due to sensor malfunctions, software failures, incorrect or malicious use by people (cybersecurity), electromagnetic interference (internet of things, fuzzy computing, werables). e. Occupational risks due to the vulnerability of IT systems (cyber-attacks, obsolete technologies, unintentional errors or illicit activities of employees,...)

	f. The already known risks will continue to appear in new contexts and occupational sectors (existing or more typified risks). g. Occupational risks due to the loss of skills due to digitalization (stress, burn out, job insecurity). h. Difficulty in the management of occupational risk prevention (failure to maintain safe and healthy conditions of places, workstations and tasks). i. Psychosocial risks (burnout, loss of skills, anxiety, technophobia, lack of control over the work). Others: << add by expert>>>.
Specific objective covered	Specific Objective 1
Question10:	From a PRL point of view, what benefits do you think the digital transformation produces in SMEs? (multiple answer).
Possible answers to be selected by the expert:	a. Certain risks will be eliminated or reduced. b. Improve working conditions c. New opportunities will appear for companies and workers, generating employment. d. Competitive advantages among them: more efficient processes and lower costs; production of higher quality and precision. e. Improved decision making f. Reduction of gender-based differences g. Reduction of repetitive and dangerous tasks h. Increased labor flexibility and autonomy in the self-management of work. i. General improvement in the safety aspects of equipment and environmental conditions. j. New PPE devices and smart wearables increase the protection of people. Others: << add by expert>>>.
Specific objective covered	Specific Objective 2

2.1.4Communication start of Round 1

Time spent: 1 hour

The communication data of the UC3M Team with the experts have been as defined in Table 6:

Table 6. Registration Start - Round 1

Round Start Date	26 April 2022
Date End Round	3 May 2022
Access to the questionnaire	https://forms.office.com/r/iKcHddUG4n
Date communication with experts	26 April 2022
Instructions	Good afternoon, The Delphi process in which you participate as an expert in occupational health and safety is about to start. The objective

	of the process is to identify new emerging scenarios subject to occupational risks arising from the digital transformation. Your participation in this Delphi process will consist of answering 4 quick and agile questionnaires that we will send you in stages over the next few weeks. Answering each of the questionnaires will take you a maximum of 10 minutes. Your data will be treated confidentially. The first questionnaire can be completed until Tuesday, May 3rd (inclusive). The link to answer the first questionnaire is the following: https://forms.office.com/r/iKcHddUG4n We would like to thank you in advance for your time and dedication to participate in this Delphi process. Best regards, Fuensanta Medina Domínguez. Professor at Universidad Carlos III de Madrid. Coordinator of the Delphi Process: Digital transformation and new emerging scenarios subject to occupational risks. Maria Isabel Sánchez Segura. Director of the IRSST-UC3M Chair. Professor at the University Carlos III of Madrid.

2.2. Step 5-MAD: Answer questionnaire Round 1

The data recorded from communications with experts in Round 1 are detailed in Table 7.

Table 7. Record of Communications with Experts - Round 1

Round Start Date	26 April 2022
Date End Round	3 May 2022
Access to the questionnaire	https://forms.office.com/r/iKcHddUG4n
Date communication with experts	26 April 2022
Reminder date for closing the round to experts	29 April 2022

3. PHASE 3. CHECK – R1

To check the responds of the experts.

3.1 Step 6-MAD: Analyze response data

Time spent (in days): *2 days*

The analysis of the data is done. The software used was Microsoft Excel and SPSS. The results are shown in the next phase.

4. PHASE 3. ACT – R1

The purpose of this phase is to interpret results

4.1 Step 7-MAD: Interpret Round 1 response data; make decisions and report on results

Time spent (in days): *2 days*

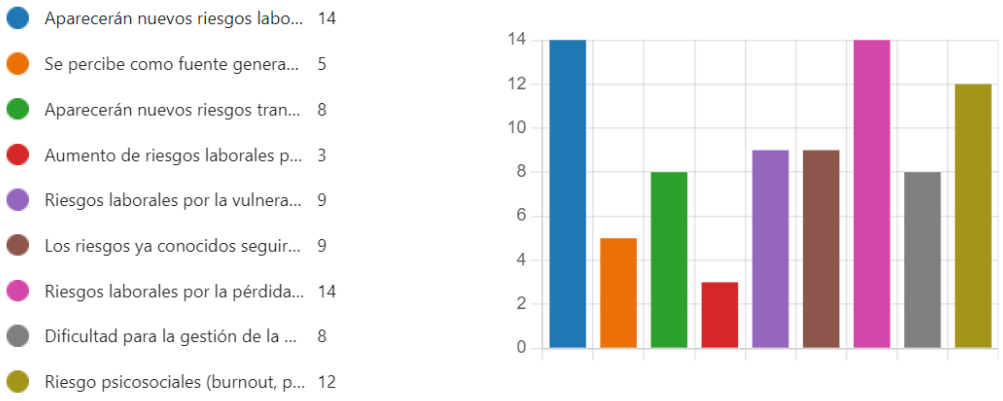
In Round 1, the two questions related to the defined objectives were analyzed:

- Question 7: Risks of digital transformation in SMEs
- Question 8: Benefits of digital transformation for SMEs

The extracted data are shown below.

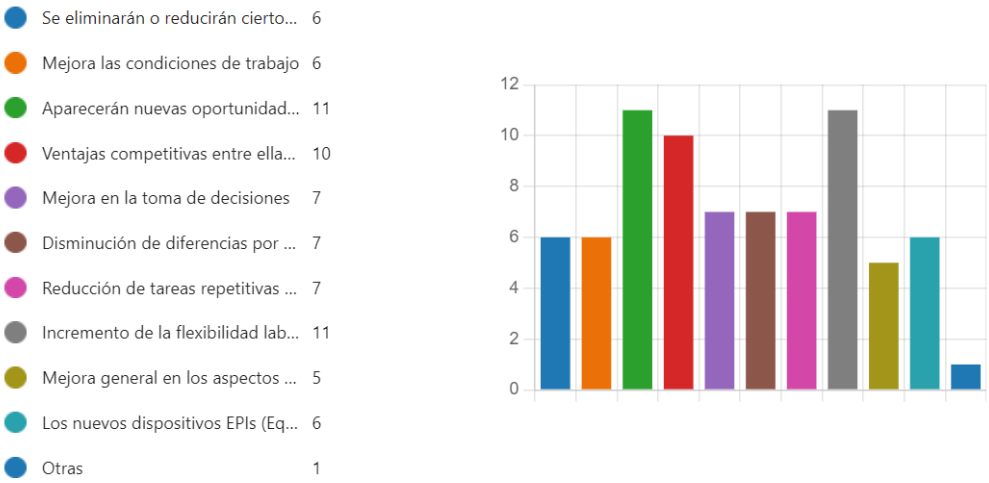
7. Desde el punto de vista de la Prevención de Riesgos Laborales (PRL) ¿Qué riesgos cree que produce la transformación digital en PYMES (Pequeña y Mediana Empresa)?

Más detalles



8. Desde el punto de vista de la PRL ¿Qué beneficios cree que produce la transformación digital en PYMES?

Más detalles



Analysis of the results: there is still too little data from Round 1 to communicate definitive conclusions to the experts, which is why a next round is required where more detailed questions will be asked about the risks and benefits identified; and, in addition, one of the psychosocial risks identified, burnout syndrome, will be examined in greater depth.

The expert team decided that it was needed a new round.

4.2 Step 8-MAD: Completion and communication of the Round 1 results report

5. PHASE: PLAN -R2

To describe the problem that you want to reflect on with the experts.

5.1 Step 1-MAD: Identify topic and objectives

There were no changes in the study objectives

5.2 Step 2-MAD: Establish Action Plan

There were no changes in the action plan

5.3 Step 3-MAD: Selection and formation of the panel of experts

There were no changes in the panel of experts

6. PHASE 2. DO – R2

6.1 Step 4-MAD: Questionnaire design and revision Round 2

The design of the Round 2 questionnaire was based on the analysis and interpretation of Round 1 data.

6.1.1 Questionnaire design Round 2

Time spent (in days): *2 days*

Table 8. Draft Questionnaire - Round 2

Question 1:	Email
Possible answers to be selected by the expert:	Free field to be filled in by experts
Specific objective covered	Sociodemographic
Question 2:	Rank from highest to lowest, what are, in your opinion, the RISKS produced by the digital transformation in SMEs (Small and Medium Enterprises). Drag up or down the sentences to prioritize from higher risk (1st position) to lower risk (last position)).
Possible answers to be selected by the expert:	New emerging occupational hazards will appear (techno-stress, ergonomic, techno-addiction) It is perceived as the source that generates the greatest impacts on occupational health and safety (organizational, psychosocial, occupational, safety, industrial hygiene, cybersecurity). New cross-cutting risks will emerge (produced by cobots, robots, chatbots, additive manufacturing, augmented reality, exoskeletons). Increased occupational risks due to sensor malfunctions, software failures, incorrect or malicious use by people (cybersecurity), electromagnetic interference (internet of things, fuzzy computing, werables). Occupational risks due to the vulnerability of IT systems (cyber-attacks, obsolete technologies, unintentional errors or illicit activities of employees, etc.).) Known risks will continue to appear in new contexts and occupational sectors (existing or more typified risks). Occupational risks due to loss of skills due to digitalization (stress, burnout, job insecurity). Difficulty in the management of occupational risk prevention (failure to maintain safe and healthy conditions in workplaces, workstations and tasks). Psychosocial risks (burnout, loss of skills, anxiety, technophobia, lack of control over work).

Specific objective covered	Specific Objective 1
Question 3:	Please justify the priority you have given in question 2 for those items you consider appropriate.
Possible answers to be selected by the expert:	Free field to be filled in by experts
Specific objective covered	Specific Objective 1
Question 4:	Rank from highest to lowest, which are the BENEFITS that you think the digital transformation produces in SMEs. Drag up or down the sentences to prioritize from highest benefit (1st position) to lowest benefit (last position)).
Possible answers to be selected by the expert:	Certain risks will be eliminated or reduced Improved working conditions New opportunities will arise for companies and workers by generating employment Competitive advantages among them: more efficient processes and lower costs, higher quality and precision production Improved decision making Decrease in gender-based differences Reduction of repetitive and dangerous tasks Increased labor flexibility, autonomy in work self-management, time management and work-life balance. Overall improvement in safety aspects of equipment and environmental conditions New PPE (Personal Protective Equipment) devices and smart wearables increase people's protection
Specific objective covered	Specific Objective 2
Question 5:	Please justify the priority you have given in question 4 for those items you consider appropriate.
Possible answers to be selected by the expert:	Free field to be filled in by experts
Specific objective covered	Specific Objective 2
Question 6:	Does your organization consider burnout as a psychosocial risk?
Possible answers to be selected by the expert:	Yes No NS/NC
Specific objective covered	Specific Objective 1
Question 7:	Do you personally consider that burnout syndrome should be considered by companies as a psychosocial risk?
Possible answers to be selected by the expert:	Yes No NS/NC
Specific objective covered	Specific Objective 1
Question 8:	Does the company you work for have information that supports the fact that using information and communication technologies to perform daily work has a negative impact on workers and promotes burnout syndrome among employees?
Possible answers to be selected by the expert:	Yes No NS/NC

Specific objective covered	Specific Objective 1
Question 9:	Does the company you work for have information that supports that using information and communication technologies to perform daily work reduces the possibility of burnout syndrome?
Possible answers to be selected by the expert:	Yes No NS/NC
Specific objective covered	Specific Objective 2
Question 10:	Does the company you work for have mechanisms in place that, using information and communication technologies, can prevent and mitigate burnout syndrome?
Possible answers to be selected by the expert:	Yes No NS/NC
Specific objective covered	Specific Objective 1 and 2
Question 11:	What would these technology-based mechanisms be?
Possible answers to be selected by the expert:	Free field to be filled in by experts
Specific objective covered	Specific Objective 1 and 2
Question 12:	If the company you work for does not use technology-based mechanisms to mitigate burnout syndrome, what other mechanisms are used in your company to prevent it?
Possible answers to be selected by the expert:	Free field to be filled in by experts
Specific objective covered	Specific Objective 1 and 2
Question 13:	Prioritize in order of importance, which of the following factors has the greatest impact on the occurrence of burnout syndrome:
Possible answers to be selected by the expert:	Digital transformation in companies Inappropriate organizational culture Poorly structured organizational policies Poorly defined processes
Specific objective covered	Specific Objective 1
Question 14:	If there are any factors that you feel are not in question 13, please specify them below.
Possible answers to be selected by the expert:	Free field to be filled in by experts
Specific objective covered	Specific Objective 1
….	

6.1.2Questionnaire review and feedback Round 2

A meeting was held with the participation of:

- expert work team in the Delphi process - Team UC3M
- Delphi process owner team.

At the meeting it was agreed not to modify or add any questions in Round 2 as it was in accordance with the Round 2 questionnaire.

6.1.3Review of the modified questionnaire in Round 2

Once revised, the final questionnaire is as defined in Table 9.
Time spent (in days): *1 day*

Table 9. Final Questionnaire - Round 2

Question 1:	Email
Possible answers to be selected by the expert:	Free field to be filled in by experts
Specific objective covered	Sociodemographic
Question 2:	Rank from highest to lowest, what are, in your opinion, the RISKS produced by the digital transformation in SMEs (Small and Medium Enterprises). Drag up or down the sentences to prioritize from higher risk (1st position) to lower risk (last position)).
Possible answers to be selected by the expert:	New emerging occupational hazards will appear (techno-stress, ergonomic, techno-addiction) It is perceived as the source that generates the greatest impacts on occupational health and safety (organizational, psychosocial, occupational, safety, industrial hygiene, cybersecurity). New cross-cutting risks will emerge (produced by cobots, robots, chatbots, additive manufacturing, augmented reality, exoskeletons). Increased occupational risks due to sensor malfunctions, software failures, incorrect or malicious use by people (cybersecurity), electromagnetic interference (internet of things, fuzzy computing, werables). Occupational risks due to the vulnerability of IT systems (cyber-attacks, obsolete technologies, unintentional errors or illicit activities of employees, etc.).) Known risks will continue to appear in new contexts and occupational sectors (existing or more typified risks). Occupational risks due to loss of skills due to digitalization (stress, burnout, job insecurity). Difficulty in the management of occupational risk prevention (failure to maintain safe and healthy conditions in workplaces, workstations and tasks). Psychosocial risks (burnout, loss of skills, anxiety, technophobia, lack of control over work).
Specific objective covered	Specific Objective 1
Question 3:	Please justify the priority you have given in question 2 for those items you consider appropriate.
Possible answers to be selected by the expert:	Free field to be filled in by experts
Specific objective covered	Specific Objective 1

Question 4:	Rank from highest to lowest, which are the BENEFITS that you think the digital transformation produces in SMEs. Drag up or down the sentences to prioritize from highest benefit (1st position) to lowest benefit (last position)).
Possible answers to be selected by the expert:	Certain risks will be eliminated or reduced Improved working conditions New opportunities will arise for companies and workers by generating employment Competitive advantages among them: more efficient processes and lower costs, higher quality and precision production Improved decision making Decrease in gender-based differences Reduction of repetitive and dangerous tasks Increased labor flexibility, autonomy in work self-management, time management and work-life balance. Overall improvement in safety aspects of equipment and environmental conditions New PPE (Personal Protective Equipment) devices and smart wearables increase people's protection
Specific objective covered	Specific Objective 2
Question 5:	Please justify the priority you have given in question 4 for those items you consider appropriate.
Possible answers to be selected by the expert:	Free field to be filled in by experts
Specific objective covered	Specific Objective 2
Question 6:	Does your organization consider burnout as a psychosocial risk?
Possible answers to be selected by the expert:	Yes No NS/NC
Specific objective covered	Specific Objective 1
Question 7:	Do you personally consider that burnout syndrome should be considered by companies as a psychosocial risk?
Possible answers to be selected by the expert:	Yes No NS/NC
Specific objective covered	Specific Objective 1
Question 8:	Does the company you work for have information that supports the fact that using information and communication technologies to perform daily work has a negative impact on workers and promotes burnout syndrome among employees?
Possible answers to be selected by the expert:	Yes No NS/NC
Specific objective covered	Specific Objective 1
Question 9:	Does the company you work for have information that supports that using information and communication technologies to perform daily work reduces the possibility of burnout syndrome?

Possible answers to be selected by the expert:	Yes No NS/NC
Specific objective covered	Specific Objective 2
Question 10:	Does the company you work for have mechanisms in place that, using information and communication technologies, can prevent and mitigate burnout syndrome?
Possible answers to be selected by the expert:	Yes No NS/NC
Specific objective covered	Specific Objective 1 and 2
Question 11:	What would these technology-based mechanisms be?
Possible answers to be selected by the expert:	Free field to be filled in by experts
Specific objective covered	Specific Objective 1 and 2
Question 12:	If the company you work for does not use technology-based mechanisms to mitigate burnout syndrome, what other mechanisms are used in your company to prevent it?
Possible answers to be selected by the expert:	Free field to be filled in by experts
Specific objective covered	Specific Objective 1 and 2
Question 13:	Prioritize in order of importance, which of the following factors has the greatest impact on the occurrence of burnout syndrome:
Possible answers to be selected by the expert:	Digital transformation in companies Inappropriate organizational culture Poorly structured organizational policies Poorly defined processes
Specific objective covered	Specific Objective 1
Question 14:	If there are any factors that you feel are not in question 13, please specify them below.
Possible answers to be selected by the expert:	Free field to be filled in by experts
Specific objective covered	Specific Objective 1
....	

6.1.4Communication start of Round 2

Time spent: 1 hour

The data of the UC3M Team communication with the experts in Round 2 are shown in Table 10.

Table 10. Registration Start - Round 2

Round Start Date	May 10, 2022
Date End Round	May 15, 2022

Access to the questionnaire	https://forms.office.com/r/hA3rmqK8pc
Date communication with experts	May 10, 2022
Instructions	Good afternoon, Continuing with the Delphi process in which you participate as an expert in occupational health and safety, we would like to thank you for your participation in the first questionnaire, and ask you to please continue with the process by filling out the second form that makes up this Delphi process. Here is the link for you to please answer the second questionnaire until May 15th (included). Link: https://forms.office.com/r/hA3rmqK8pc We would like to thank you in advance for your participation. Best regards

6.2 Step 5-MAD: Answer questionnaire Round 2

The experts will answer the questionnaire before the end date of the round. The data reported to the experts are as recorded in Table 11.

Table 11. Record of Communications with Experts - Round 2

Round Start Date	May 10, 2022
Date End Round	May 15, 2022
Access to the questionnaire	https://forms.office.com/r/hA3rmqK8pc
Date communication with experts	May 10, 2022
Reminder date for closing the round to experts	May 13, 2022

7. PHASE 3. CHECK – R2

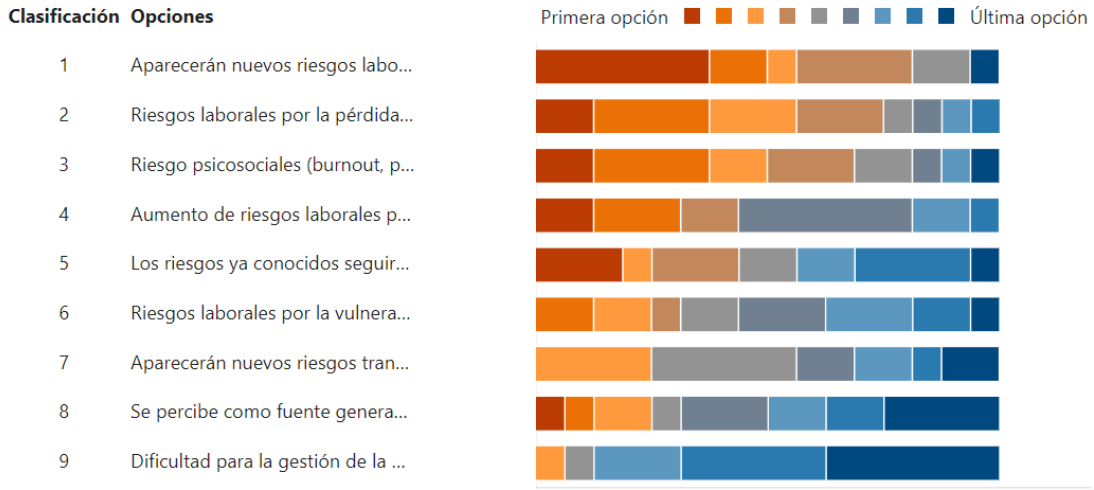
To check the responds of the experts.

7.1 Step 6-MAD: Analyze response data

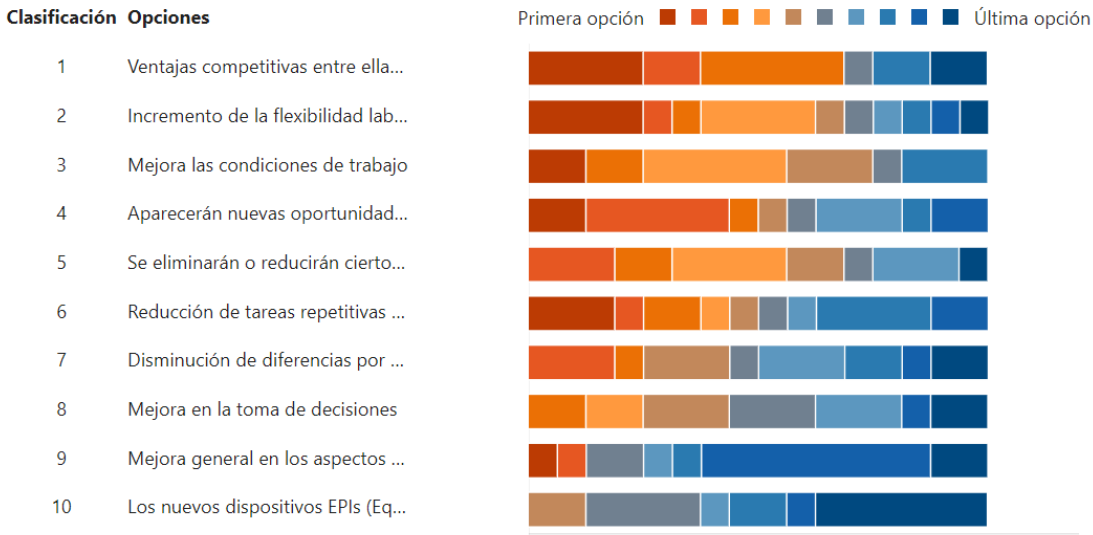
The UC3M Team accessed the Excel files generated with the Round 2 responses for the analysis of the answers. The data were processed in order to interpret the results given by the experts.

Time spent: 5 days
Some of the graphs obtained in the analysis are as follows:

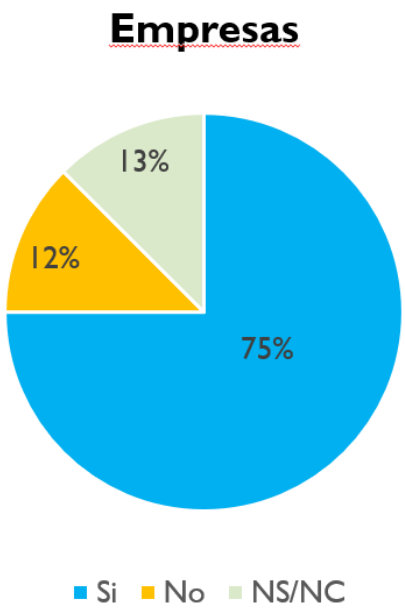
- Ranking, from highest to lowest, of the **RISKS** produced by digital transformation in SMEs (Small and Medium Enterprises).

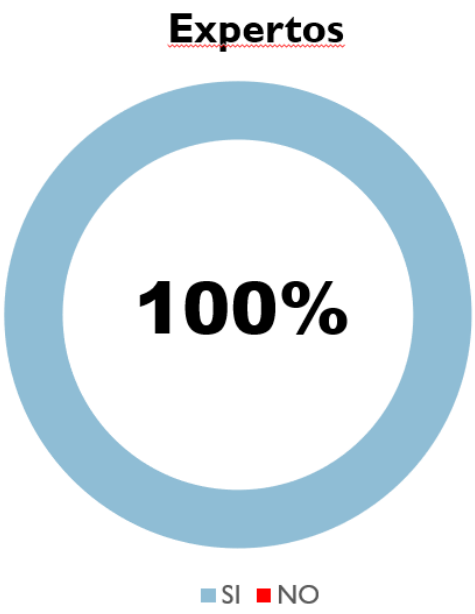


- Rank from highest to lowest, the BENEFITS that digital transformation produces in SMEs (Small and Medium Enterprises).

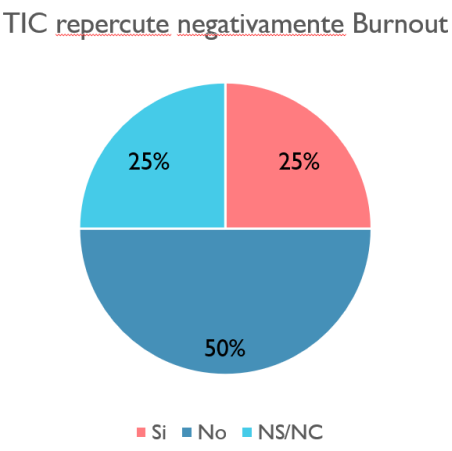


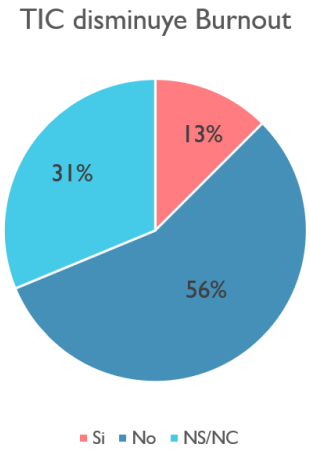
100% of the experts consider burnout to be a psychosocial risk, although only in 75% of the organizations where the experts work do they consider it as such.





- Companies with supporting data: ICT - Burnout





8. PHASE 4. ACT-R2

The purpose of this phase is to interpret results

8.1 Step 7-MAD: Interpreting the results and making decisions for the next round

After analyzing the data, we have arrived at the following interpretation of the results:

Objective of the study: To identify the impact of digital transformation by identifying new emerging scenarios subject to occupational risks.

Specific objectives of the process

- Specific Objective 1: Determine the existence of occupational hazards and which are the ones with the greatest impact on occupational risk prevention.
- Specific Objective 2: To assess whether this digital transformation can bring positive value to prevention and to the work performance of employees (BENEFITS).

Regarding the risks with the greatest impact on the prevention of occupational hazards, the experts have considered

- New emerging occupational hazards (techno-stress, ergonomic, techno-addition) will emerge
- Occupational risks due to loss of skills due to digitalization (stress, burnout, job insecurity).
- Psychosocial risks (burnout, loss of skills, anxiety, technophobia, lack of control over work).

Some of the experts' comments related to the risks:

- The digital transformation in SMEs entails a change and this, in my opinion, will affect people to a greater extent, who in many cases will have to adapt to new technologies and not these to people. I think it will have an impact mainly on psychosocial and ergonomic aspects and, to a lesser extent, on safety and industrial hygiene.
- Psychosocial risks and mental health are the risks that currently require more and better attention and approach.
- Technology failures (intentional or unintentional) can give rise to the most significant risks
- Impacts on the means of production generate all the rest
- Damage to the worker's health, such as cognitive problems, nervousness, sleep problems, etc., as well as the appearance of psychosocial risks such as techno-stress (techno-anxiety, techno-fatigue, technophobia), etc.
- Digitalization must be an integrating agent, and although it may initially generate stress due to a lack of skills, the developers of these technologies and the companies that implement them must manage the change so as not to leave anyone behind.
- It is more difficult to put measures on that which is not known and it is not known how it will be affected.

On what benefits do you think the digital transformation produces in SMEs.

- Competitive advantages among them: more efficient processes and lower costs, higher quality and precision production
- Increased labor flexibility, autonomy in work self-management, time management and work-life balance.
- Reduction of repetitive and dangerous tasks

Some of the expert comments related to benefits are:

- New opportunities will appear as and how, NNTT should be a source of quality of life. At the moment the labor market is abusing in hiring and work tasks.
- I do not believe that digital transformation in SMEs will contribute much to reducing gender differences...perhaps in large companies, but not in small companies, as I believe that it requires a profound change in values and principles, which does not necessarily go hand in hand with a digital transformation. I also fail to see the relationship between digital transformation and improved decision making.
- Increased control and automation translates into prevention (detecting risk before it materializes).
- With the creation of more secure and decent jobs, working conditions are improved.
- Digital Transformation is a process that will improve performance, expand reach and optimize business results. This transformation generates a change of mentality throughout the company, both internally and externally, for customers.

One of the types of risks most prioritized by the experts in questionnaire 1 was psychosocial risk, specifically burnout. Therefore, in the second questionnaire, in addition to prioritizing the risks and benefits of the digital transformation subject to occupational risks, we delved into analyzing the mechanisms to prevent and mitigate the risk of burnout. The main conclusions that can be drawn are:

- **100% of the experts consider** burnout to be a psychosocial risk, although only in 75% of the organizations where the experts work do they consider it as such.

- Only **25% of the** experts work in **organizations** that have data supporting that using information and communication technologies to perform daily work has a negative impact on workers and leads to burnout syndrome among employees.

- Only **13% of the** experts work in **organizations** that have data supporting that using information and communication technologies to perform daily work reduces the possibility of burnout syndrome (Burnout).

- **On the mechanisms that can prevent and mitigate burnout syndrome (Burnout)**

  - **Regarding mechanisms related to information and communication technologies (ICTs)**

    63% of the experts work in organizations that have ICT mechanisms that can prevent and mitigate Burnout syndrome

    Some of these mechanisms are:

    - Technological resources appropriate to the workstations.
    - Communication and collaboration assessment platform.

    Regarding ICT mechanisms that experts would consider interesting and that they would like their companies to have to prevent Burnout:

    - Survey and questionnaire applied from an internal platform. 360° performance evaluation and encounters
    - Communication channels suitable for personal, effective and varied relations between workers, middle management and those responsible for the organization, as well as with clients/patients, etc. served.
    - Automated early detection of mental fatigue symptoms, feedback mechanisms to assess the worker's condition, propose improvements and detect problems and opportunities.

  - **Regarding mechanisms that are not related to information and communication technologies**

    - Psychosocial studies, job adaptations, and job-specific information and training.
    - Ways and protocols to denounce it and act.
    - Protocol for digital disconnection
    - Autonomy in the organization of work, partial teleworking, support among colleagues and being able to express oneself freely with the hierarchical superior.

- **On the factors that have the greatest impact on the occurrence of burnout syndrome (Burnout):**

  71.4% of the experts consider that the factor that has the greatest impact on the occurrence of Burnout is not having an appropriate organizational culture, followed by poorly structured organizational policies, poorly defined processes and finally digital transformation.

8.2 Step 8-MAD: Completion and communication of the Round 2 results report

The UC3M team prepared a report with the analysis of Round 2 that will be sent in Round 3 so that the experts can take into account and reflect on their own opinions and those issued by the rest of the experts.

Time: 3 days (preparation of the report)

9. PHASE: PLAN -R3

To describe the problem that you want to reflect on with the experts.

9.1 Step 1-MAD: Identify topic and objectives

There were no changes in the study objectives

9.2 Step 2-MAD: Establish Action Plan

There were no changes in the action plan

9.3 Step 3-MAD: Selection and formation of the panel of experts

There were no changes in the panel of experts

10. PHASE 2. DO – R3

10.1 Step 4-MAD: Questionnaire design and revision Round 3

10.1.1 Questionnaire design Round 3

The design of the Round 3 questionnaire was based on the data analyzed in Round 2 by the Delphi process expert work team.

As can be seen in Table 12, two questions from Round 2 are repeated. This is because the experts will be provided with a document containing the Round 2 analysis so that they can reflect on their answers given in Round 2 and the answers given by the other experts. From this

reflection they will be able to modify their answers or not to those two questions. The rest of the questions are new in order to extract more data from the experts.

Time spent (in days): *2 days*

The draft Round 3 questionnaire is detailed in Table 17.

Table 12. Draft Questionnaire - Round 3

Question 1:	Email
Possible answers to be selected by the expert:	Free field for experts to write
Specific objective covered	Identify the expert
Question 2:	Rank from highest to lowest, what are, in your opinion, the RISKS produced by the digital transformation in SMEs (Small and Medium Enterprises). Drag up or down the sentences to prioritize from higher risk (1st position) to lower risk (last position)).
Possible answers to be selected by the expert:	New emerging occupational hazards will appear (techno-stress, ergonomic, techno-addiction) It is perceived as the source that generates the greatest impacts on occupational health and safety (organizational, psychosocial, occupational, safety, industrial hygiene, cybersecurity). New cross-cutting risks will emerge (produced by cobots, robots, chatbots, additive manufacturing, augmented reality, exoskeletons). Increased occupational risks due to sensor malfunctions, software failures, incorrect or malicious use by people (cybersecurity), electromagnetic interference (internet of things, fuzzy computing, werables). Occupational risks due to the vulnerability of IT systems (cyber-attacks, obsolete technologies, unintentional errors or illicit activities of employees, etc.).) Known risks will continue to appear in new contexts and occupational sectors (existing or more typified risks). Occupational risks due to loss of skills due to digitalization (stress, burnout, job insecurity). Difficulty in the management of occupational risk prevention (failure to maintain safe and healthy conditions in workplaces, workstations and tasks). Psychosocial risks (burnout, loss of skills, anxiety, technophobia, lack of control over work).
Specific objective covered	
Question 3:	Rank from highest to lowest, what are the BENEFITS that you think the digital transformation produces in SMEs. Drag up or down the sentences to prioritize from highest benefit (1st position) to lowest benefit (last position)).
Possible answers to be selected by the expert:	Certain risks will be eliminated or reduced Improved working conditions

	New opportunities will arise for companies and workers by generating employment Competitive advantages among them: more efficient processes and lower costs, higher quality and precision production Improved decision making Decrease in gender-based differences Reduction of repetitive and dangerous tasks Increased labor flexibility, autonomy in work self-management, time management and work-life balance. Overall improvement in safety aspects of equipment and environmental conditions New PPE (Personal Protective Equipment) devices and smart wearables increase people's protection
Specific objective covered	
Question4:	Select those mechanisms related to Information and Communication Technologies that you consider can prevent and mitigate Burnout Syndrome.
Possible answers to be selected by the expert:	Technological resources appropriate to the workstations. Communication and collaboration assessment platform. Survey and questionnaire applied from an internal platform. 360° performance evaluation and encounters Communication channels suitable for personal, effective and varied relations between workers, middle management and those responsible for the organization, as well as with clients/patients, etc. served. Automated early detection of symptoms of mental fatigue, feedback mechanisms to assess the worker's condition, propose improvements and detect problems and opportunities. Ongoing training and online help systems
Specific objective covered	
Question5:	Do you consider any other mechanism, related to Information and Communication Technologies, that can prevent and mitigate Burnout Syndrome? If so, please state which ones.
Possible answers to be selected by the expert:	Free field to be filled in by experts
Specific objective covered	
Question6:	Select those mechanisms NOT related to Information and Communication Technologies that you consider can prevent and mitigate Burnout Syndrome.
Possible answers to be selected by the expert:	Psychosocial studies, job adaptations, and job-specific information and training. Ways and protocols to denounce it and act. Protocol for digital disconnection Autonomy in the organization of work, partial teleworking, support among colleagues and the ability to express oneself freely with the hierarchical superior.
Specific objective covered	

Question7:	Do you consider any other mechanism, NOT related to Information and Communication Technologies, that can prevent and mitigate Burnout Syndrome? If yes, please state which ones.
Possible answers to be selected by the expert:	Free field to be filled in by experts
Specific objective covered	
Question8:	In round 2, the experts prioritized the factors that have the greatest impact on the occurrence of burnout syndrome (Burnout) in their company: Poorly structured organizational policies2 .- Poorly structured organizational culture3.- Poorly defined processes4.- Poorly implemented digital transformationPlease could you indicate examples of policies, culture, processes and digital transformation that have a negative impact on Burnout.
Possible answers to be selected by the expert:	Free field to be filled in by experts
Specific objective covered	
....	

10.1.2 Questionnaire review and feedback Round 3

For the review and feedback of the Round 3 questionnaire, a meeting was held with the participation of the IRRST Team and the UC3M Team.

At the meeting we reviewed each question and the objective we wanted to cover. At the meeting the UC3M team saw the need to include a related question on how the experts would propose to incorporate burnout prevention mechanisms.

Table 13. Question to be added in Round 3

Question9:	How would you propose to incorporate technological and non-technological burnout prevention mechanisms in an organization to mitigate the risks associated with this syndrome?
Possible answers to be selected by the expert:	Free field to be filled in by experts

In this activity, the meeting was held with the participation of both teams, and the following 2 hours were dedicated to this activity

10.1.3 Review of the modified questionnaire in Round 3

In the revision of the modified questionnaire, the UC3M Team added the question and moved the questionnaire to Microsoft Form. The final questionnaire for round 3 is as specified in Table 14.

Table 14. Review of Changes in Draft Questionnaire - Round 3

Question 1:	Email
Possible answers to be selected by the expert:	Free for experts to write
Specific objective covered	Identify the expert
Question 2:	Rank from highest to lowest, what are, in your opinion, the RISKS produced by the digital transformation in SMEs (Small and Medium Enterprises). Drag up or down the sentences to prioritize from higher risk (1st position) to lower risk (last position)).
Possible answers to be selected by the expert:	New emerging occupational hazards will appear (techno-stress, ergonomic, techno-addiction) It is perceived as the source that generates the greatest impacts on occupational health and safety (organizational, psychosocial, occupational, safety, industrial hygiene, cybersecurity). New cross-cutting risks will emerge (produced by cobots, robots, chatbots, additive manufacturing, augmented reality, exoskeletons). Increased occupational risks due to sensor malfunctions, software failures, incorrect or malicious use by people (cybersecurity), electromagnetic interference (internet of things, fuzzy computing, werables). Occupational risks due to the vulnerability of IT systems (cyber-attacks, obsolete technologies, unintentional errors or illicit activities of employees, etc.).) Known risks will continue to appear in new contexts and occupational sectors (existing or more typified risks). Occupational risks due to loss of skills due to digitalization (stress, burnout, job insecurity). Difficulty in the management of occupational risk prevention (failure to maintain safe and healthy conditions in workplaces, workstations and tasks). Psychosocial risks (burnout, loss of skills, anxiety, technophobia, lack of control over work).
Specific objective covered	
Question 3:	Rank from highest to lowest, which are the BENEFITS that you think the digital transformation produces in SMEs. Drag up or down the sentences to prioritize from highest benefit (1st position) to lowest benefit (last position)).
Possible answers to be selected by the expert:	Certain risks will be eliminated or reduced Improved working conditions New opportunities will arise for companies and workers by generating employment. Competitive advantages among them: more efficient processes and lower costs, higher quality and precision production

	Improved decision making Decrease in gender-based differences Reduction of repetitive and dangerous tasks Increased labor flexibility, autonomy in work self-management, time management and work-life balance. Overall improvement in safety aspects of equipment and environmental conditions New PPE (Personal Protective Equipment) devices and smart wearables increase people's protection
Specific objective covered	
Question4:	Select those mechanisms related to Information and Communication Technologies that you consider can prevent and mitigate Burnout Syndrome.
Possible answers to be selected by the expert:	Technological resources appropriate to the workstations. Communication and collaboration assessment platform. Survey and questionnaire applied from an internal platform. 360° performance evaluation and encounters Communication channels suitable for personal, effective and varied relations between workers, middle management and those responsible for the organization, as well as with clients/patients, etc. served. Automated early detection of symptoms of mental fatigue, feedback mechanisms to assess the worker's condition, propose improvements and detect problems and opportunities. Ongoing training and online help systems
Specific objective covered	
Question5:	Do you consider any other mechanism, related to Information and Communication Technologies, that can prevent and mitigate Burnout Syndrome? If yes, please state which ones.
Possible answers to be selected by the expert:	Free for experts to write
Specific objective covered	
Question6:	Select those mechanisms NOT related to Information and Communication Technologies that you consider can prevent and mitigate Burnout Syndrome.
Possible answers to be selected by the expert:	Psychosocial studies, job adaptations, and job-specific information and training. Ways and protocols to denounce it and act. Protocol for digital disconnection Autonomy in the organization of work, partial teleworking, support among colleagues and the ability to express oneself freely with the hierarchical superior.
Specific objective covered	
Question7:	Do you consider any other mechanism, NOT related to Information and Communication Technologies, that can prevent and mitigate Burnout Syndrome? If yes, please state which ones.
Possible answers to be selected by the expert:	Free for experts to write

Specific objective covered	
Question8:	In round 2, the experts prioritized the factors that have the greatest impact on the occurrence of burnout syndrome (Burnout) in their company: Poorly structured organizational policies2 .- Poorly structured organizational culture3.- Poorly defined processes4.- Poorly implemented digital transformationPlease could you indicate examples of policies, culture, processes and digital transformation that have a negative impact on Burnout.
Possible answers to be selected by the expert:	Free for experts to write
Specific objective covered	
Question9:	How would you propose to incorporate technological and non-technological burnout prevention mechanisms in an organization to mitigate the risks associated with this syndrome?
Possible answers to be selected by the expert:	Free for experts to write
Specific objective covered	
....	

10.1.4 Communication start of Round 3

Time spent:1 hour

The Round 3 communication data are as defined in Table 15:

Table 15. Registration Start - Round 3

Round Start Date	May 23, 2022
Date End Round	May 29, 2022
Access to the questionnaire	https://forms.office.com/r/5Q5fS1Cf3r
Date communication with experts	May 21, 2022
Instructions	Good afternoon, Continuing with the Delphi process in which you participate as an expert in occupational health and safety, we ask you to please read the attached document and then fill in the third form. In the document you will find the main conclusions and comments of the experts to the first two forms. The objective is to allow you to self-reflect on these comments and your answers. You will see that there are two questions (prioritization) that are the same as in the second form, in case after self-reflection you would like to modify your answer. Here is the link for you to please answer the third questionnaire until May 29th (included).

	Link:https://forms.office.com/r/5Q5fS1Cf3r We would like to thank you in advance for your participation. Best regards,

10.2 Step 5-MAD: Answer questionnaire Round 3

Time spent: 7 days

The UC3M team sent an email to start Round 3. In the email, in addition to the data in Table 16, in which the experts are informed of the time they have to complete the questionnaire, they are sent a Feedback file with the analysis of Round 2.

Table 16. Record of Communications with Experts - Round 3

Round Start Date	May 23, 2022
Date End Round	May 29, 2022
Access to the questionnaire	https://forms.office.com/r/5Q5fS1Cf3r
Date communication with experts	May 21, 2022
Reminder date for the closing of the round to experts	May 27, 2022

11. PHASE 3. CHECK – R3

To check the responds of the experts. Step 6-MAD: Analyze response data

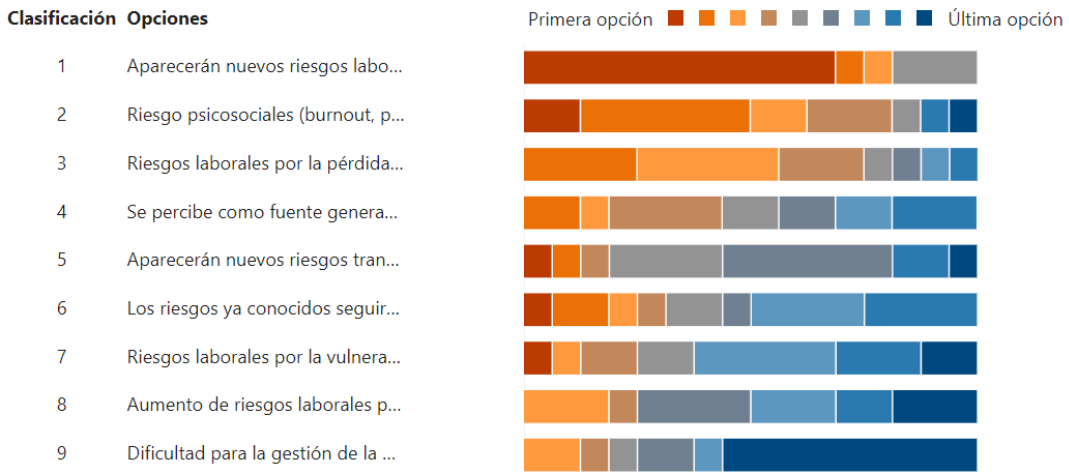
11.1 Step 6: Analyze response data

The UC3M Team accessed the Excel files generated with the Round 3 responses for the analysis of the answers. The data were processed in order to interpret the results given by the experts.

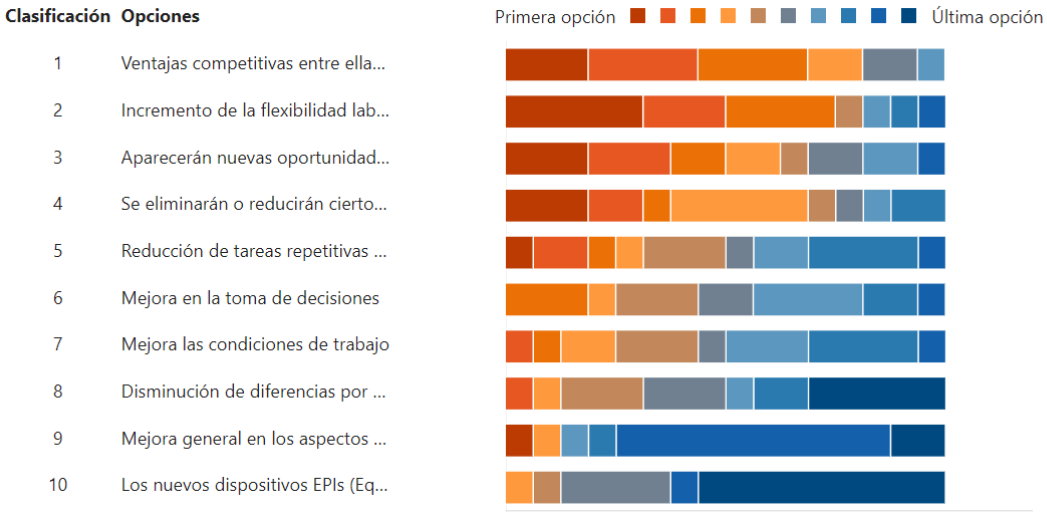
Time spent: 5 days

Some graphs extracted from the data are:

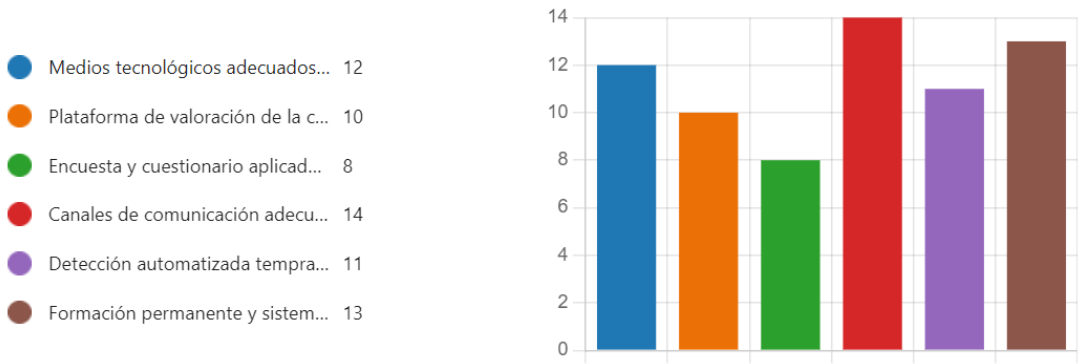
- Ranking, from highest to lowest, of the **RISKS** produced by digital transformation in SMEs (Small and Medium Enterprises).



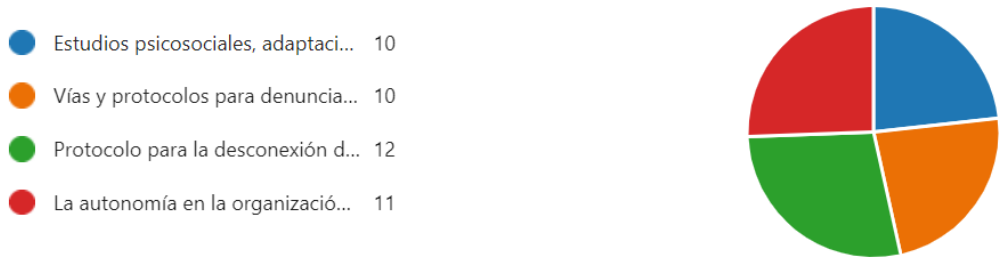
- Rank from highest to lowest, the BENEFITS that digital transformation produces in SMEs (Small and Medium Enterprises).



- Mechanisms related to Information and Communication Technologies, which he considers can prevent and mitigate Burnout Syndrome.



- Mechanisms not related to Information and Communication Technologies, which he considers can prevent and mitigate Burnout Syndrome.



11. PHASE 4. ACT-R3

The purpose of this phase is to interpret results

11.1 Step 7-MAD: Interpreting the results and making decisions for the next round

After analyzing the data, we have arrived at the following interpretation of the results.

Although burnout occupies a prominent place within the **psychosocial occupational risks, we wanted to check whether there is a consensus among experts in ORP that burnout is a psychosocial risk.**

As can be seen in the graph, 75% of the companies where the experts work do consider burnout a psychosocial risk.

Furthermore, if we ask whether they, as experts, consider burnout to be a psychosocial risk, there is a total consensus of 100%. All of them believe that it is a psychosocial risk, and that the ORP should consider it as such.

Another of the main blocks of the study was to find out whether the companies have the data to back it up:

- If ICT has a negative impact on burnout, that is, if technological resources and tools have a negative effect and help to increase burnout syndrome in employees. As can be seen in the graph, 25% of the companies have data supporting that ICT negatively affect workers with respect to burnout syndrome.
- On the other hand, it has been analyzed whether companies have ICT mechanisms to help reduce burnout syndrome, 13 of them do have mechanisms. Although it is not much, it is encouraging data in the sense that there is hope

that ICT can be used as a lever in itself to mitigate the symptom of burnout syndrome.

In the study, the experts also identified which **ICT mechanisms** they **consider to be the most effective in companies to** prevent burnout syndrome. The most valued were:

- ICT mechanisms that favor adequate and effective **communication channels** for relations between workers, middle management and those responsible for the organization.

- In addition, the **technological means must be adapted to the workplace** to facilitate the daily work of its employees. If this is not the case, the technological means cease to be facilitators and inhibitors to be one of the causes of burnout syndrome.

- **Continuous training,** ICT is constantly changing and that is why employees need to be prepared and the only way is through continuous training and online help systems.

- The experts also consider that there should be ICT mechanisms **that automatically detect symptoms of mental fatigue,** allowing the worker's condition to be evaluated.

- **Workplace digital disconnection protocols** to guarantee the right of workers to effectively enjoy their rest time, as well as the right to preserve their personal and family privacy.

In addition to these ICT mechanisms, experts have identified non-technological mechanisms that help prevent burnout syndrome. Some of them are:

- **Work autonomy in the sense of** having flexible working hours and being able to make decisions on how to organize their work.

- They consider it important to **implement psychosocial and physical health strategies**. In addition to change management techniques from a psychosocial perspective, mentoring techniques, training to develop emotional management skills,

- **Teamwork** should be fostered, improving communication and creating safe spaces where communication is encouraged.

- In addition, they consider it important for workers to have **channels and protocols for reporting and** taking action.

In addition to identifying the mechanisms, we wanted to reflect on the **factors that experts believe currently have the greatest impact on the occurrence** of burnout in companies.

1.-The experts considered that the factor that has the greatest impact is having poorly structured organizational policies.

In this case, companies with

- Policies: non-classical, non-rigid, movable, open, clear
- WELL-defined lines of authority
- Allow communication and autonomy between departments
- In which each position is identified, its function and where it reports to

2.-The second factor that the experts consider to have the greatest impact is an inappropriate organizational culture. In this sense the desired aspects would be:

- A well-defined Vision, Mission, Values of the Company
- That they have set objectives
- Working towards a common direction
- And that there is alignment in the strategy, that there is coherence between directives and directive actions.

3.- The third factor that they consider to have the greatest impact is poorly defined organizational processes. At this point we wish to

- Clear definition of tasks and responsibilities
- Job definition
- Adequate distribution of the workload
- Competent leadership
- Change management skills

And the fourth factor that has an impact has been identified as poorly implemented digital transformation. The experts propose:

- Provide change management skills
- Give value to the Person and not only to technology. Avoid depersonalization and lack of human contact.
- Complexity and constant changes in technologies
- Continuous training and development of technological skills

- Adaptation time, learning
- Troubleshooting support
- Non-intrusive tools that do not give a feeling of being controlled and monitored at all times.

CONCLUSIONS

As Conclusions, it can be stated that there is a 100% expert consensus that BURNOUT SYNDROME is a PSYCHOSOCIAL RISK.

The study has identified the factors that have the greatest impact on the occurrence of Burnout, as well as the ICT and non-ICT mechanisms that must be implemented to mitigate Burnout.

In this sense, it can be stated that there is a fine line between an ICT mechanism being an inhibitor or generator of burnout depending on the policies, culture and processes and digital transformation in companies.

11. Step 8-MAD: Preparation and communication of the Round 3 Results Report

The experts have been informed that, after analyzing the results and conclusions obtained, it is not necessary to carry out any more rounds of questionnaires and the study has been concluded. In addition, they have been sent a document with the results obtained from the study.

Time spent: 3 days (preparation of the report and communication with experts)