

## automatica trend index 2023

## Survey results (N=5,000)

- United States
- China
- Japan
- Germany
- UK





The Leading Exhibition for Smart Automation and Robotics **27.–30. Juni 2023 | München** automatica-munich.com



## Agenda

- Introduction
- Market Research Methodology
- Industry Sectors
- Questions and Results
- Imprint



## **Introduction / Market Research**



automatica's trend index 2023 looks at the strategic course being set for the use of industrial robots and professional service robots. How is automation in manufacturing being driven forward with this key technology, what does this mean for the working world and what will the factory of the future look like?

Research design

- Market research institute
- Panel Survey Online 5 countries
- USA, GER, UK, CN, JP
- N=5.000 employees / N=1.000 employees per country (representative of the population) USA, GER, UK, CN, JP
- All data in percent (%)

## automatica trend index 2023 – United States







### **Questions**



### **Question 1**

"When thinking about the future of work, what do you think about robots in the factory? Please rate the following statements. Robots..."

### **Question 2**

"Digital Technology and Artificial Intelligence (AI) are shaping the workplace of the future.
 Please rate the following statements.

#### **Question 3**

 "Sustainability and GreenTech will change the way we work by saving energy, reducing emissions or improving job conditions for people.
 Please evaluate the following statements.



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## Survey results UNITED STATES

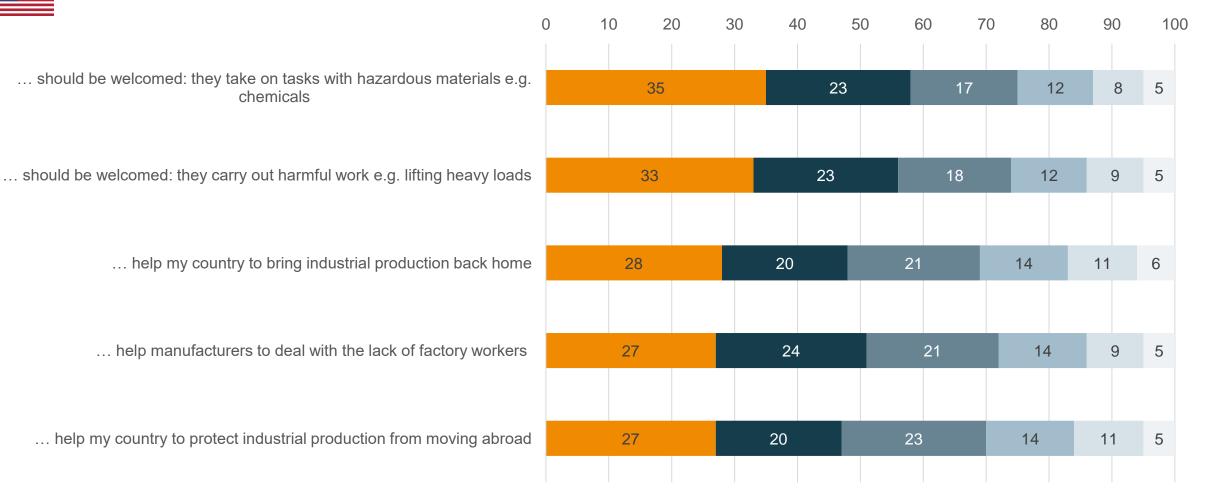


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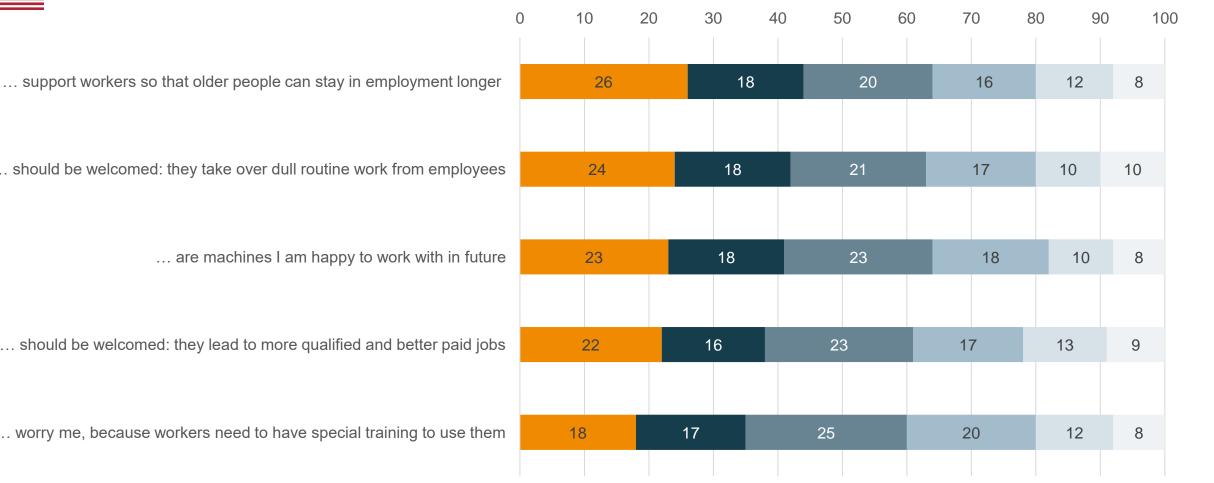


Question 1: When thinking about the future of **work**, what do you think about **robots in the factory**? Please rate the following statements. Robots...



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Question 1: When thinking about the future of **work**, what do you think about **robots in the factory**? Please rate the following statements. Robots...



... should be welcomed: they take over dull routine work from employees

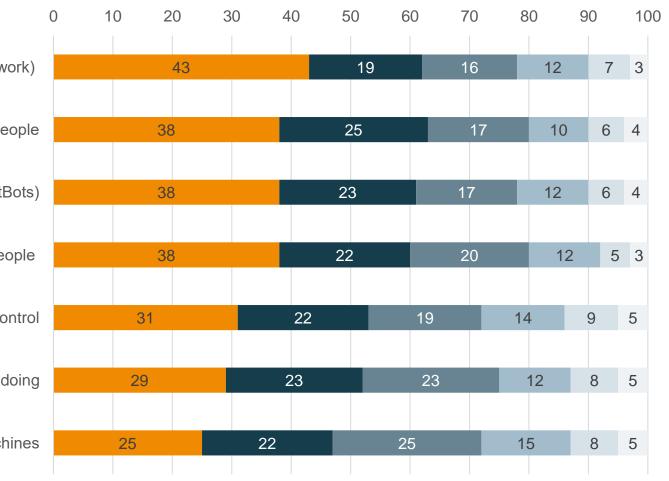
... are machines I am happy to work with in future

... should be welcomed: they lead to more qualified and better paid jobs

... worry me, because workers need to have special training to use them



Question 2: **Digital Technology** and **Artificial Intelligence** (AI) are shaping the workplace of the future. Please rate the following statements. Digital Technology and Artificial Intelligence...



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... will not replace the social skills of people (e.g. emotion, creativity, teamwork)

... always need to be designed to benefit and support people

... need to be instantly recognizable as a machine (e.g. ChatBots)

... need to leave control to people

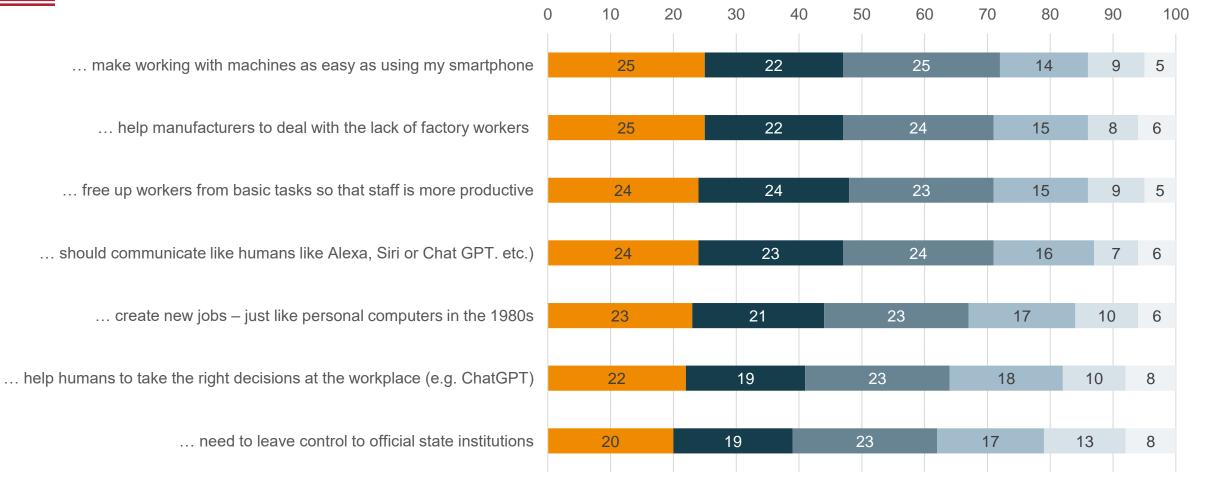
... worry me, because super-intelligent machines need strict human control

... help to automate tasks people don't like doing

... create new jobs to install, program and operate machines

Question 2: **Digital Technology** and **Artificial Intelligence** (AI) are shaping the workplace of the future. Please rate the following statements. Digital Technology and Artificial Intelligence...







	0	10	20	30	40 5	50	60	70	80	90	100
My country needs more sustainable workplaces to improve working conditions	5	31			23		21		11	7	7
GreenTech products are an urgent need to fight climate change		28		2	1		23	11		9	8
I want my country to produce more GreenTech products (e.g. Electric Cars)		28		18		24		13	ξ	3	9
Automation & education help to keep industry production strong in my country	,	27			25		24		13	6	5
Robots help factories to work productively with a shrinking workforce	•	26		24	1		23		13	8	6



	0	10	20	30	40	5	06	60 7	0	80	90	100
for workers		26			19		27		12	2 1	0	6
e (purpose)		25			20		25		15	;	8	7
olar Panels)		24			23		2	5	ľ	15	8	5
untainability												
ustainability		23		18			23		16	11	9	)
ditional way	,	20		16		23		15		15	11	

The use of new tech encourages employers to create better jobs for workers

Production of GreenTech makes factory jobs more attractive (purpose)

Robots enable mass production of GreenTech products (e.g. Solar Panels)

My country sets an example to the world of how to best achieve sustainability targets (e.g. fight climate change)

Sustainability is only a buzzword - we should keep working the traditional way

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# automatica trend index 2023

Survey results CHINA



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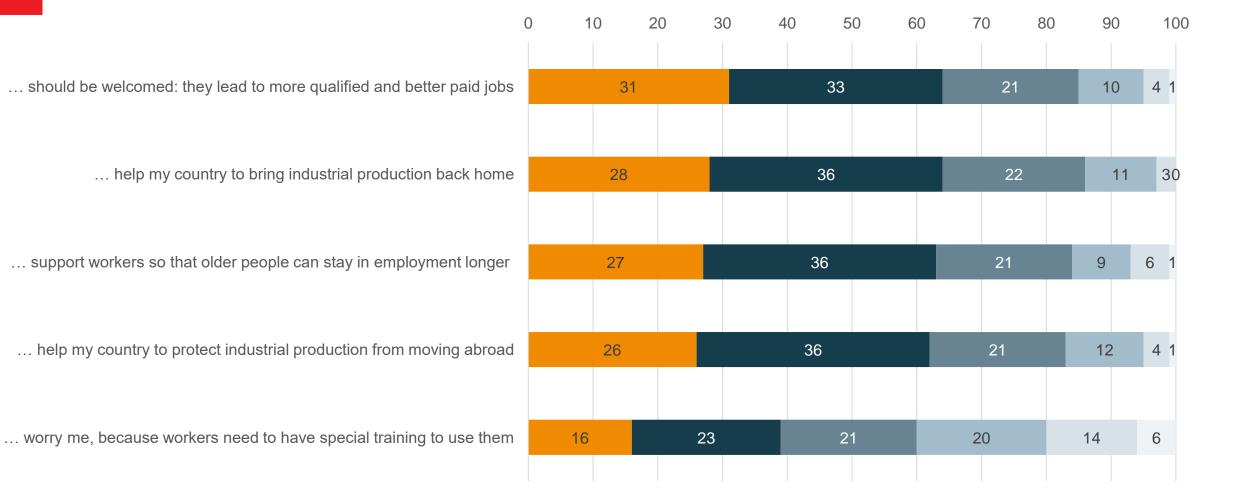


Question 1: When thinking about the future of **work**, what do you think about **robots in the factory**? Please rate the following statements. Robots...



	0	10	20	30	40	50	60	70	80	90	100
should be welcomed: they carry out harmful work e.g. lifting heavy loads			42				34		14	7	30
should be welcomed: they take on tasks with hazardous materials e.g. chemicals			42				34		13	7	3 1
help manufacturers to deal with the lack of factory workers			33			38			18	7	40
are machines I am happy to work with in future		3	2			37			20	7	3 1
should be welcomed: they take over dull routine work from employees		3	1			36		19	)	10	40

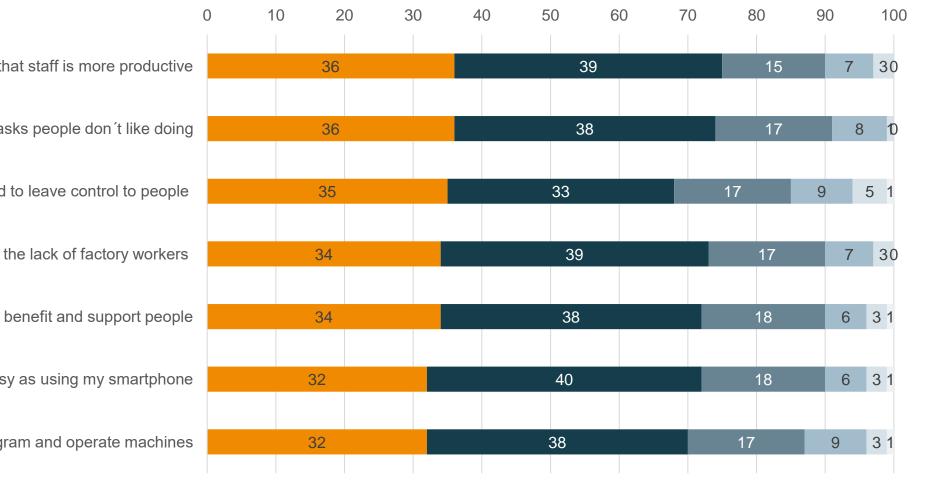
Question 1: When thinking about the future of **work**, what do you think about **robots in the factory**? Please rate the following statements. Robots...





Question 2: Digital Technology and Artificial Intelligence (AI) are shaping the workplace of the future. Please rate the following statements. Digital Technology and Artificial Intelligence...





... free up workers from basic tasks so that staff is more productive

... help to automate tasks people don't like doing

... need to leave control to people

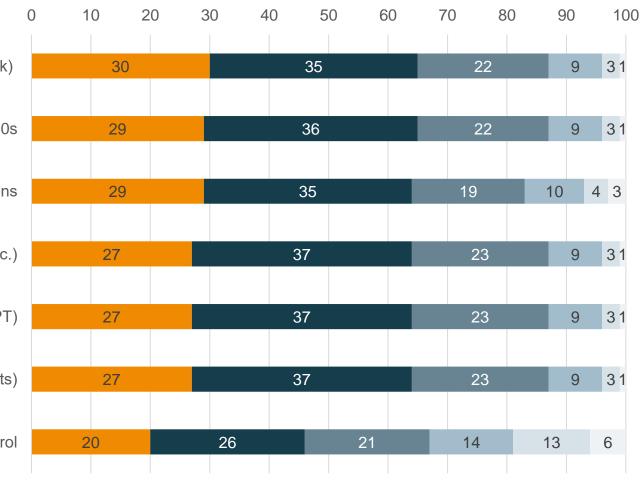
... help manufacturers to deal with the lack of factory workers

... always need to be designed to benefit and support people

... make working with machines as easy as using my smartphone

... create new jobs to install, program and operate machines

Question 2: **Digital Technology** and **Artificial Intelligence** (AI) are shaping the workplace of the future. Please rate the following statements. Digital Technology and Artificial Intelligence...



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... will not replace the social skills of people (e.g. emotion, creativity, teamwork)

... create new jobs - just like personal computers in the 1980s

... need to leave control to official state institutions

... should communicate like humans like Alexa, Siri or Chat GPT. etc.)

... help humans to take the right decisions at the workplace (e.g. ChatGPT)

... need to be instantly recognizable as a machine (e.g. ChatBots)

... worry me, because super-intelligent machines need strict human control



	0	10	20	30	40 5	60 E	60 7C	) 8	9 9	0	100
I want my country to produce more GreenTech products (e.g. Electric Cars)			39			38			16	5	20
GreenTech products are an urgent need to fight climate change			37			35			19	6	21
Robots help factories to work productively with a shrinking workforce			36			40			15	5	3 1
Production of GreenTech makes factory jobs more attractive (purpose)		:	36			39			17	6	20
My country needs more sustainable workplaces to improve working conditions			36			39			16	6	21



100

	0	10	20	30	40	50	60	70	80	) 9	90	100
Automation & education help to keep industry production strong in my country		3	35			4	1			16	6	20
My country acts on example to the world of how to best achieve sustainability.												
My country sets an example to the world of how to best achieve sustainability targets (e.g. fight climate change)		3	35			37			1	8	7	21
The use of new tech encourses evenley are to events hotter is he for werkers										4.0	-	0.4
The use of new tech encourages employers to create better jobs for workers		33	3			41				16	7	21
Robots enable mass production of GreenTech products (e.g. Solar Panels)		33	3			40				18	7	20
Sustainability is only a buzzword – we should keep working the traditional way		20		25		15		13	14	1	13	

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Survey results JAPAN



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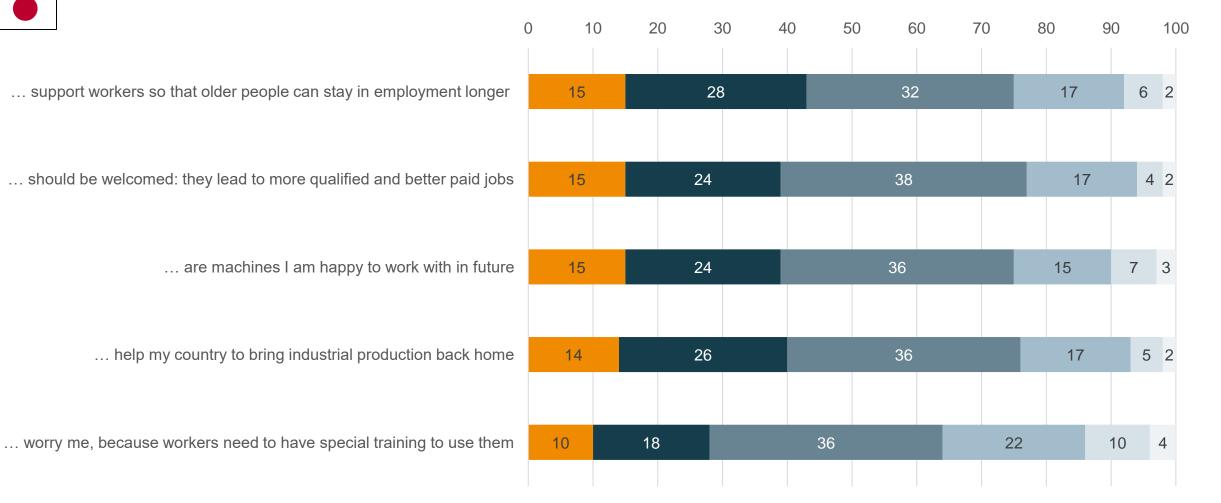


Question 1: When thinking about the future of **work**, what do you think about **robots in the factory**? Please rate the following statements. Robots...



	0 1	0 2	20 30	0 40	0 5	0 60	07	3 0	30 9	90	100
should be welcomed: they carry out harmful work e.g. lifting heavy loads		33			29			23	8	5	2
should be welcomed: they take on tasks with hazardous materials e.g. chemicals		32			29			24	1	0	4 1
help manufacturers to deal with the lack of factory workers		29			33			23		11	31
should be welcomed: they take over dull routine work from employees	2	20		31			30		13	2	4 2
help my country to protect industrial production from moving abroad	18	3		29			33		13	5	5 2

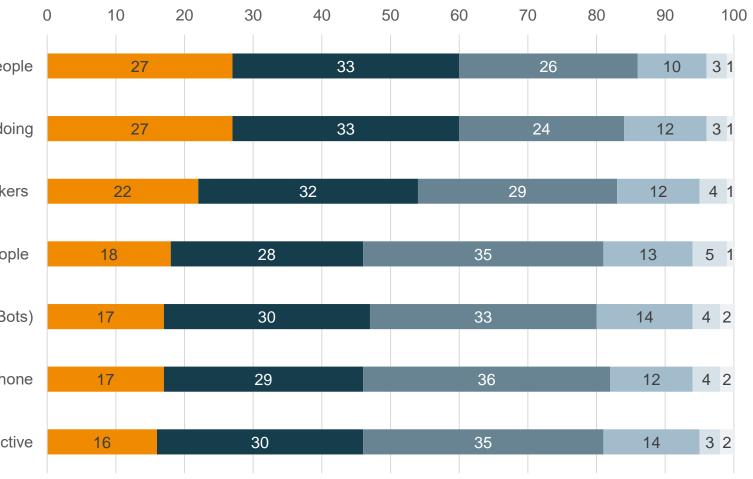
Question 1: When thinking about the future of **work**, what do you think about **robots in the factory**? Please rate the following statements. Robots...





Question 2: **Digital Technology** and **Artificial Intelligence** (AI) are shaping the workplace of the future. Please rate the following statements. Digital Technology and Artificial Intelligence...





... always need to be designed to benefit and support people

... help to automate tasks people don't like doing

... help manufacturers to deal with the lack of factory workers

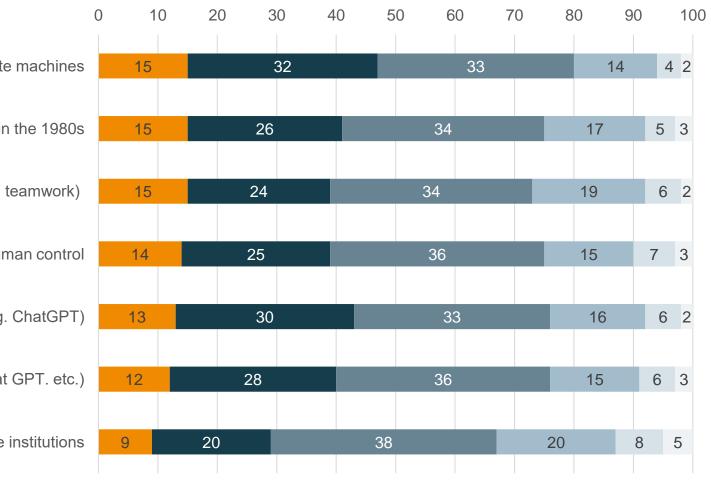
... need to leave control to people

... need to be instantly recognizable as a machine (e.g. ChatBots)

... make working with machines as easy as using my smartphone

... free up workers from basic tasks so that staff is more productive

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... create new jobs to install, program and operate machines

... create new jobs - just like personal computers in the 1980s

... will not replace the social skills of people (e.g. emotion, creativity, teamwork)

... worry me, because super-intelligent machines need strict human control

... help humans to take the right decisions at the workplace (e.g. ChatGPT)

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... need to leave control to official state institutions



	0	10	20	30	40	50	60	70	) 8	0 9	90	10
uctively with a shrinking workforce		21			34			3(	)		11	3 1
ces to improve working conditions		16		32				32		13		4 3
ry production strong in my country		16		31		1		35		12		4 2
Tech products (e.g. Electric Cars)		16		29			33	3		14	4	53
Tech products (e.g. Solar Panels)		15		29			30	6		15		3 2

Robots help factories to work productively with a shrinking workforce

My country needs more sustainable workplaces to improve working conditions

Automation & education help to keep industry production strong in my country

I want my country to produce more GreenTech products (e.g. Electric Cars

Robots enable mass production of GreenTech products (e.g. Solar Panels)



	0	10	20 3	30 4	0 5	50 6	60 7	8 0	30 9	90	10
ent need to fight climate change	14		27			3	7		14	5	3
o create better jobs for workers	13		28			3	8		15		42
jobs more attractive (purpose)	11		25			39			17	5	3
ow to best achieve sustainability e change)	10		24			35		18		7	6
eep working the traditional way	10		19		36			21		10	4

GreenTech products are an urgent need to fight climate change

The use of new tech encourages employers to create better jobs for workers

Production of GreenTech makes factory jobs more attractive (purpose

My country sets an example to the world of how to best achieve sustainability targets (e.g. fight climate change)

Sustainability is only a buzzword - we should keep working the traditional way

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Survey results GERMANY

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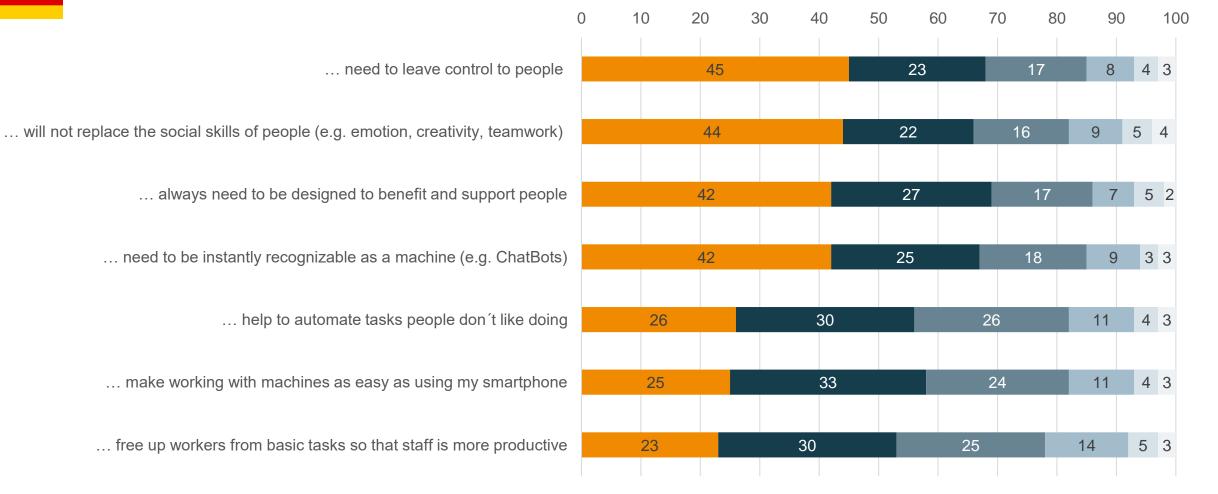
	0	10	20	30	40	50	60	70	80	90	100
should be welcomed: they take on tasks with hazardous materials e.g. chemicals			38			28		18		10	3 3
should be welcomed: they carry out harmful work e.g. lifting heavy loads			37			29		18		9	5 2
should be welcomed: they take over dull routine work from employees		23		2	5		26		14	7	5
help manufacturers to deal with the lack of factory workers		21		28	3		28		12	6	5
help my country to protect industrial production from moving abroad		19		26		2	7		15	8	5

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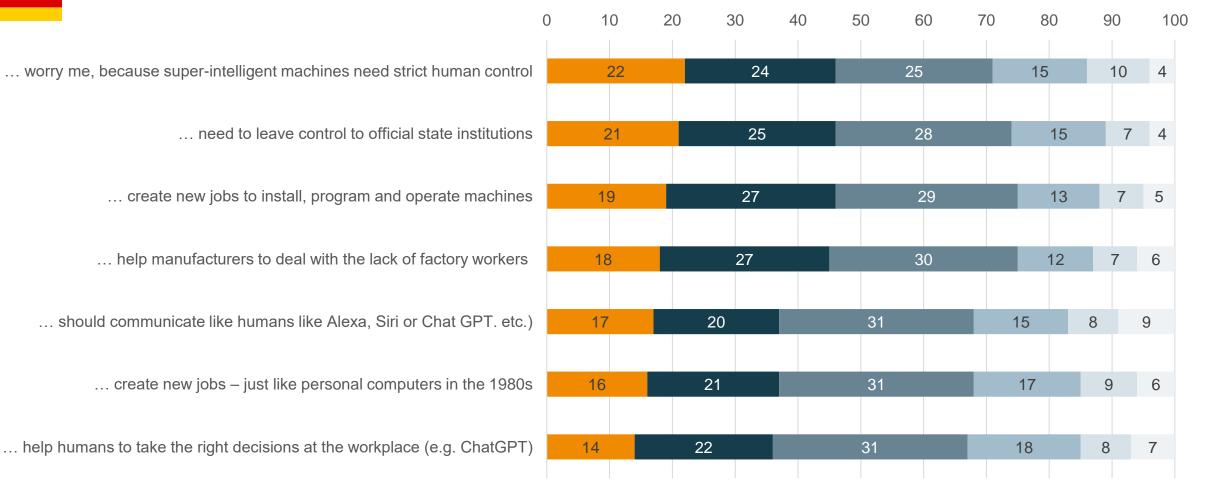
	0 1	0	20	30 4	40	50	60	70 8	80	90	100
help my country to bring industrial production back home	18			28			29		14	6	5
support workers so that older people can stay in employment longer	18		2	23		27		16	ŕ	0	6
are machines I am happy to work with in future	14		22			31		14	10		9
should be welcomed: they lead to more qualified and better paid jobs	14		20		2	9		19	10		8
worry me, because workers need to have special training to use them	11		18		27		18		16	1	0

Question 2: **Digital Technology** and **Artificial Intelligence** (AI) are shaping the workplace of the future. Please rate the following statements. Digital Technology and Artificial Intelligence...



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	0	10	20	30	40 50	) 6	60 7	0 8	0	90	100
My country needs more sustainable workplaces to improve working conditions		26			29		25		11	5	4
GreenTech products are an urgent need to fight climate change		24		27	,		26		12	6	5
Robots enable mass production of GreenTech products (e.g. Solar Panels)		22		31			29		11	4	3
Robots help factories to work productively with a shrinking workforce		21		32			28		12	4	3
Automation & education help to keep industry production strong in my country		21		32			28		12	4	3



	0	10	) 2	0 3	60 4	0 5	6 6	60 7	0	80	9	0	100
Electric Cars)		20	)		25		27	,		13	8	7	,
bs for workers		17		2	.6		30			14		7 6	6
DS IOI WOIKEIS				2	.0		50			14		/	J
tive (purpose)		15		26			33			15		6	5
e sustainability		13		19		32			17		9	10	
				_									
raditional way		13		16	2	22	16	6	1	7		16	

I want my country to produce more GreenTech products (e.g. Electric Cars

The use of new tech encourages employers to create better jobs for workers

Production of GreenTech makes factory jobs more attractive (purpose)

My country sets an example to the world of how to best achieve sustainability targets (e.g. fight climate change)

Sustainability is only a buzzword - we should keep working the traditional way

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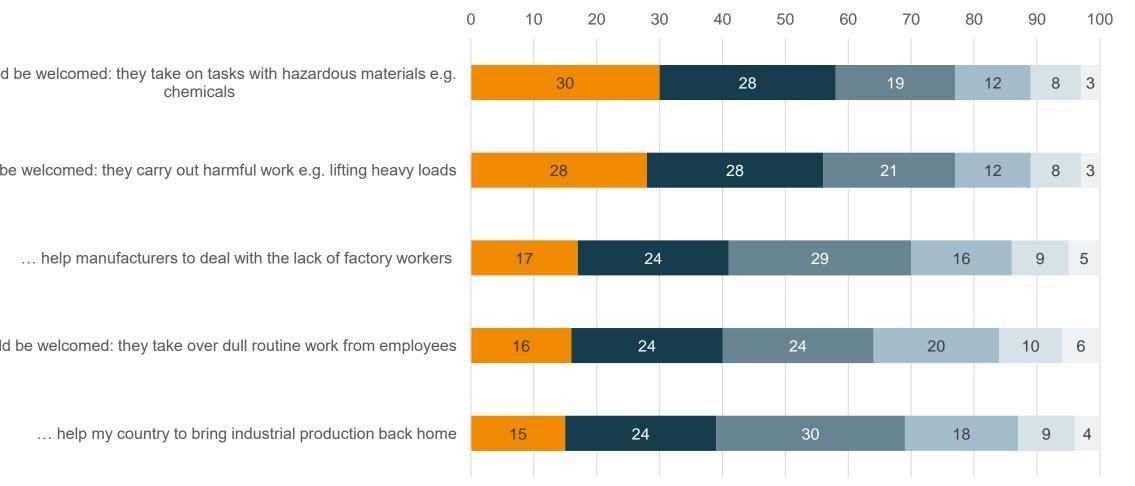


## automatica trend index 2023

Survey results UNITED KINGDOM

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voma Restite - Automatica Question 1: When thinking about the future of **work**, what do you think about **robots in the factory**? Please rate the following statements. Robots...



■1 - Strongly agree ■2 ■3 ■4 ■5 6 - Strongly disagree

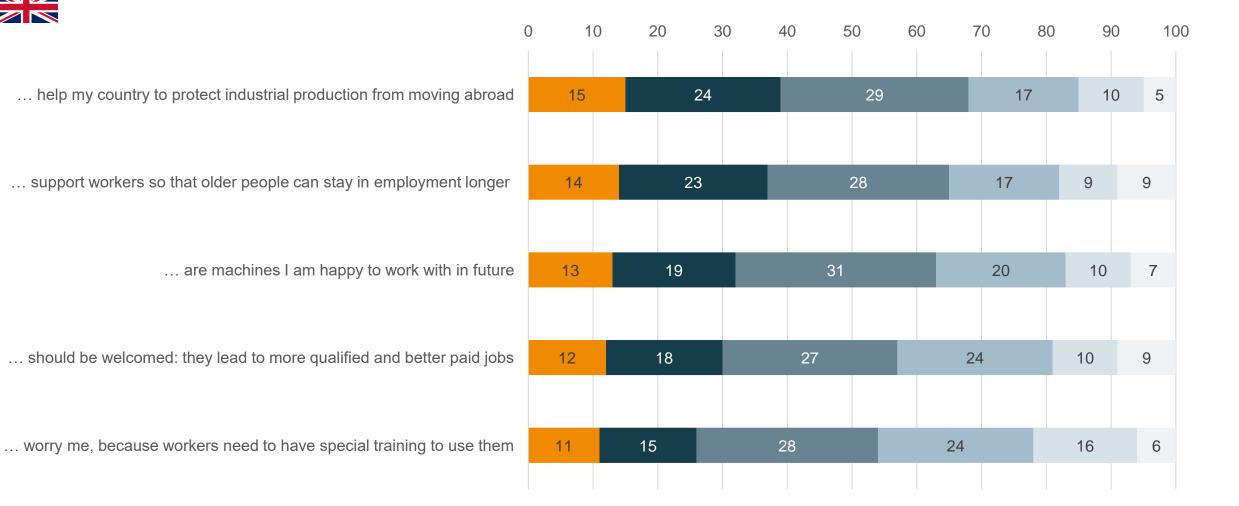


... should be welcomed: they take on tasks with hazardous materials e.g.

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Question 1: When thinking about the future of **work**, what do you think about **robots in the factory**? Please rate the following statements. Robots...





shaping the workplace of the future. Please rate the following statements. Digital Technology and Artificial Intelligence... ... will not replace the social skills of people (e.g. emotion, creativity, teamwork) ... always need to be designed to benefit and support people ... need to be instantly recognizable as a machine (e.g. ChatBots) 5 2

... need to leave control to people

Question 2: Digital Technology and Artificial Intelligence (AI) are

... worry me, because super-intelligent machines need strict human control

... help to automate tasks people don't like doing

... free up workers from basic tasks so that staff is more productive

■1 - Strongly agree ■2 ■3 ■4 ■5 ■6 - Strongly disagree



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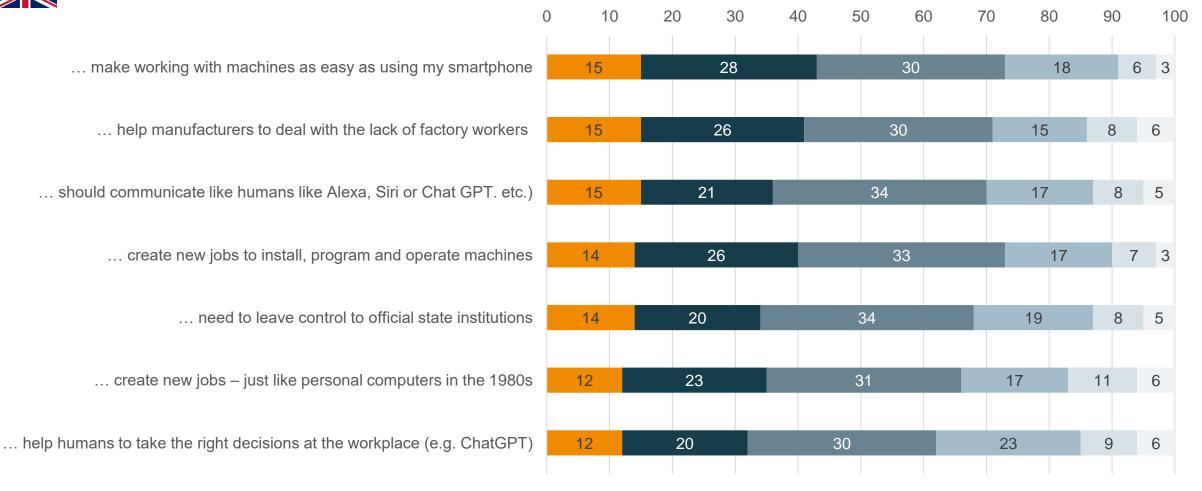
6 2

7 4

6 3

Question 2: **Digital Technology** and **Artificial Intelligence** (AI) are shaping the workplace of the future. Please rate the following statements. Digital Technology and Artificial Intelligence...







0	10	20	30	40	50	60	70	80 9	<del>)</del> 0	10
6	27			27		26		12	5	3
<u>,</u>	25			25		24		16	6	4
	24		2	26		26		13	7	4
)	19		27			30		15	5	4
,	16		29			31		15	6	3
		<ul> <li>27</li> <li>27</li> <li>25</li> <li>24</li> <li>19</li> </ul>	<ul> <li>27</li> <li>27</li> <li>25</li> <li>24</li> <li>19</li> </ul>	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	3       27       27       26         4       25       25       24         5       24       26       26         6       24       26       26         7       19       27       30	3       27       27       26       12         4       25       25       24       16         5       24       26       26       13         6       19       27       30       15	$\begin{array}{c c c c c c c c c c c c c c c c c c c $



	0	10	20	30	40	50	6	0 70	3 C	80	90	10
									_			
a shrinking workforce	1	6		29			29	9		16	6	4
etter jobs for workers	15	5		25			31		1	8	7	4
attractive (purpose)	15	5		24			32			19	6	4
achieve sustainability	12		18		3	33			21	1	0	6
ng the traditional way												
	11		16	2	22		2	2	1	7	12	2

Robots help factories to work productively with a shrinking workforce

The use of new tech encourages employers to create better jobs for workers

Production of GreenTech makes factory jobs more attractive (purpose)

My country sets an example to the world of how to best achieve sustainability targets (e.g. fight climate change)

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