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CRUCIAL WORKFORCE SKILLS NECESSARY FOR EFFICIENT PERFORMANCE OF MULTICULTURAL TEAMS IN INDUSTRY 5.0. – THE RESULTS OF AN IN-DEPTH GROUP INTERVIEW WITH MANAGERS FROM SELECTED EUROPEAN COUNTRIES

ABSTRACT

In view of upcoming changes, the issue of workforce skills necessary for efficient performance of multicultural teams in Industry 5.0 is both important and topical. The aim of the study reported in this article is to identify particular workforce skills which managers from seven European countries consider crucial for efficient performance of multicultural teams in Industry 5.0. To achieve this aim, in April 2023 the author conducted a study using mixed research methodology (i.e. a qualitative study with quantitative elements) based on a literature review and an in-depth group interview.

The theoretical part of the article describes workforce skills relevant to Industry 5.0, which is followed by a presentation of the methodology of the study, its results, and conclusions.

Based on the literature and the results of the interview, the author demonstrates that the requirements for workforce skills important in Industry 5.0 are changing towards soft skills. Moreover, in the opinion of managers who work with multicultural teams, the crucial skills of members of such teams that will ensure their efficient performance in Industry 5.0 belong to the group of skills categorised as *working with people* (following the classification of The World Economic Forum, Future of Jobs Report, 2020). Another significant finding of the study is the observation that the transformation of companies within Industry 5.0 will require a change in the approach to workforce skills, especially in culturally diverse work environments (i.e. multicultural teams).

KEYWORDS: Industry 5.0, Era 4.0, Era 5.0, Workforce skills, Managers, Multicultural teams, Culturally diverse work environment

INTRODUCTION

Workforce skills and the changing requirements in this area have been of interest to researchers investigating different aspects of management for years (Acemoglu & Restrepo, 2018, Adepoju, Aigbavboa, 2021, Albrecht et al, 2020, Ernst, Merola, Samaan, 2019, Frey, Osborne, 2017, Güğərçin, Güğərçin, 2021, Khemiss, Taher, 2021, Martin, Healy, 2009, Olejniczak, Miszczynski, Itohisa, 2020, Ybarra, 2023). This issue is not only vitally important, but, in the author's opinion, extremely timely from the perspective of changes and challenges linked with the transition from Era 4.0 to Era 5.0 (Carayannis, Morawska-Jancelewicz, 2022, Demir, Cicibas, 2017, Morrar, Arman, Mousa, 2017, Pereira, Lima, Charrua-Santos, 2020, Saniuk, Grabowska, Straka, 2022, Xu et al, 2021, Ellitan, L. 2020).

The author is convinced that workforce skills will play a crucial role in Industry 5.0, particularly in the case of multicultural teams, as their efficient performance affects such areas as innovation, taking up new challenges, and competitiveness (Hajro, Gibson, Pudelko, 2017, Karna, Knap-Stefaniuk, 2019, Misoc, 2017, Stevens, Plaut, Sanchez-Burks, 2008, Szpilko, Szydło, Samul, 2022).

The aim of this article is to identify particular workforce skills which managers from seven European countries consider crucial for efficient performance of multicultural teams in Industry 5.0.

The in-depth group interview conducted with European managers, which is discussed in this article, is a continuation of the studies the author conducted in 2022 and 2023. In 2022, she held 12 individual in-depth interviews with Polish, Spanish, Italian, and Czech managers (three interviews with managers of each nationality), and in 2023, she held 12 individual in-depth interviews with managers from three other European countries (Portugal, France, and Greece; four interviews with managers of each nationality). The research problem addressed in these individual in-depth interviews was formulated as follows: What particular workforce skills do managers who work with multicultural teams identify as particularly important in Era 5.0/Industry 5.0? The results of these interviews are described in two articles currently awaiting publication and inspired the author to continue her investigations in this area, but this time in the context of identifying workforce skills that managers believe are crucial for successful performance of culturally diverse teams. Thus, in order to achieve the aim of this study, the author has formulated the following research problem: What particular workforce skills are crucial for efficient performance of multicultural teams in Industry 5.0, according to European managers who have been working with such teams for years?

The literature review and the in-depth group interview reveal that the requirements for workforce skills important in Industry 5.0 are changing towards soft skills. Moreover, in the opinion of the participants of the interview, i.e. managers who work with multicultural teams, the crucial skills of members of such teams that will ensure their efficient performance in Industry 5.0 belong to the group of skills categorised as *working with people* (following the classification of The World Economic Forum, Future of Jobs Report, 2020).

WORKFORCE SKILLS FOR INDUSTRY 5.0

The Fourth Industrial Revolution has affected numerous areas of activity undertaken by contemporary companies. Unsurprisingly, the transition from Era 4.0 to Era 5.0 poses further challenges within management, especially in the area of people management and workforce skills necessary for effective work in new conditions (Ellitan, Anatan, 2020, Kim, Park, 2020, Savanevičienė, Statnickė, Vaitkevičiu, 2019, Skobelev, Borovik, 2017, Yavari, Pilevari, 2020). Thus, it seems pertinent to analyse current requirements in the area of workforce skills in terms of employees' work in Industry 5.0, especially in companies whose teams consist of members from different cultural backgrounds, as cultural differences in such teams significantly affect the style of work, communication, task performance, and goal achievement.

Today, survival and competitive advantage of organizations heavily depend on workforce skills and employees' ability to successfully cope with ongoing organizational change (Burnes 2011; Doherty, Stephens, 2021, Ellingrud, Gupta, Salguero, 2020, Fugate 2012, Phillips, Klein, 2023). According to the estimates of the World Economic Forum stated in its Future of Jobs Report 2020, by 2025 half of all employees worldwide will have to reskill (Schwab, Zahidi, 2020).

The new business model for companies' operation in Industry 5.0 will be based on automation systems in which humans, robots, and algorithms will cooperate. Hence, a new working model will be required, and, consequently, new ways of performing tasks, which will translate into new requirements in the area of workforce skills needed to efficiently perform these tasks. In all teams, their members' skills will affect the efficiency of team performance and pursuit of their company's goals and strategies.

In the future, working in Industry 5.0 will require employees to acquire and develop new skills, especially those called soft skills, which are indispensable for successful cooperation between team members. Employees will have to deal with more complex tasks, make more difficult, multi-faceted decisions, and solve more complex problems than today. Teamwork, interpersonal relationships, and positive interactions will be the basis for the successful coping with these challenges, especially in multicultural teams.

Unquestionably, the requirements in the area of workforce skills have changed over time. In order to demonstrate this change, the author compares these skills as reported in 2015 and 2020. Table 1 lists the workforce skills most desired and in demand in 2015 and in 2020 (based on the Future of Jobs Report, 2016; 2020).

Table 1. *Top 10 in-demand skills for 2015 and 2020*

2015	2020
Complex problem-solving	Complex problem-solving
Coordinating with others	Critical thinking
People management	Creativity
Critical thinking	People management
Negotiation	Coordinating with others
Quality control	Emotional intelligence
Service orientation	Judgment and decision making
Judgement and decision making	Service orientation
Active listening	Negotiation
Creativity	Cognitive flexibility

Source: Compiled from Future of Jobs Report (2016, 2020), based on: Güğercin, S., Güğercin, U. (2021). *How Employees Survive in the Industry 5.0 Era: In-Demand Skills of the Near Future*. International Journal of Disciplines Economics & Administrative Sciences Studies, Vol. 7, Issue 31, p. 527

In her publications on workforce skills relevant to Industry 5.0, the author draws on the descriptions provided by the report of the World Economic Forum (Future of Jobs Report, 2020). This report identifies ten most desirable skills in 2025 divided into four groups of skills: *problem-solving*, *working with people*, *technology use and development*, and *self-management* (Güğercin, Güğercin, 2021). Table 2 describes the listed skill groups.

Table 2. *Top 10 in-demand skills for 2025 divided into four groups*

Problem solving	This group includes the following skills: analytical thinking and innovation; complex problem-solving; critical thinking and analysis; creativity, originality and initiative; reasoning, problem-solving and ideation. In Industry 5.0, employees will need to demonstrate not only analytical and critical thinking but also high levels of creativity, openness to new solutions, and originality in solving problems.
Working with people	Skills from this group consist of leadership and social influence. Focus on human resources in Industry 5.0 will require leadership skills, influencing skills, and social relationship building. Leadership attitudes and behaviours (based on effective collaboration and communication) under conditions of change will be essential to build commitment of team members.
Technology use and development	This group includes such skills such as: technology use, monitoring and control, and technology design and programming. Working within Industry 5.0 will require extensive and advanced technological skills, in terms of both their proficient use and an ability to design new solutions.
Self-management	This group of skills consists of: active learning and learning strategies as well as resilience, stress tolerance and flexibility. Operating effectively in Industry 5.0, will require self-management skills. Active learning, stress tolerance, and flexibility will be most important here.

Source: The skills are listed in the Future of Jobs Report (2016, 2020), based on: Güğərçin, S., Güğərçin, U. (2021). *How Employees Survive in the Industry 5.0 Era: In-Demand Skills of the Near Future*. International Journal of Disciplines Economics & Administrative Sciences Studies, Vol. 7, Issue 31, p. 527-529

Workforce skills in Industry 5.0 will be particularly important in multicultural teams, as culturally diverse work environments are conducive to misunderstandings and difficult situations, which can negatively affect employees' motivation, the quality of their work, cooperation, and management (Chaturvedi, 2022, Gibson, McDaniel, 2010, Karna, Knap-Stefaniuk, 2019, Misoc, 2017, Stahl, Maznevski, Voigt, Jonsen, 2010).

The skills of members of multicultural teams have always been of utmost importance, as they are related to creativity and innovativeness of solutions developed by such teams, their flexibility and pace of adapting to changing environments, an increase of the quality of task performance, openness to change and new challenges, effectiveness of communication in a culturally diverse work environment, efficiency in decision-making, and effectiveness of actions and implemented solutions (Behfar, Kern, Brett, 2006, Chaturvedi, 2022, Horwitz, Horwitz, 2007, Karna, Knap-Stefaniuk, 2019, Mannix, Neale, 2005, Sogancilar, Ors, 2018).

Managing multicultural teams today poses a particular challenge in the context of Industry 5.0, especially in the area of workforce skills. These skills need to adequately respond to the demands of the future but at the same time also provide the basis for effective collaboration across cultural differences, while meeting the goals and challenges of Era 5.0.

RESEARCH METHODOLOGY

The technique the author used in her qualitative study conducted in April 2023 was an in-depth group interview. The interview was semi-structured; most of its questions were open-ended, and only several were closed-ended. A special research tool, i.e. an in-depth group interview scenario, was developed for the purposes of this interview.

The respondents (managers) who took part in the interview were recruited using the social and professional networks of the author of the article. She is fully aware of strong and weak points of qualitative studies – such as methodological flexibility and subjectivity (Juszczyk, 2013) – and takes them into account in her analyses. The managers who participated in the interview were

recruited by means of purposive sampling, which involves a deliberate selection of those individuals who meet specific criteria (Miszczak, Walasek, 2013). The recruitment technique the author applied in her studies conducted in 2022 and 2023 and in the study described in the article was snowball sampling.

In this study, as in all her previous studies in which respondents were managers, the author has used the following selection criteria: experience on a managerial position of a minimum of three years and leading a team in which employees come from at least three different cultures. The motivation behind applying the same selection criteria for respondents' recruitment is primarily linked to comparability of individuals and groups which took part in different studies. The interview with managers from seven European countries described in this article was held via the ZOOM application and lasted for over 130 minutes.

Before the interview, the author informed the managers about several important issues, including the aim of the interview, the anonymity of the results, and the possibility to opt out (at any stage of the interview). Unfortunately, the interview was not recorded (as three managers did not consent to being recorded). The information collected during the interview was transcribed, coded, and categorised. Wherever it was possible, the author also quantitatively analysed the empirical material and presented these analyses in tables.

Seven managers – one from the following countries: Poland, Czechia, Spain, Portugal, Italy, France, and Greece – took part in the interview. The interview was conducted in English, which was not a problem for any of the respondents.

The following table presents the characteristics of the respondents.

Table 3. *Characteristics of the respondents (managers who took part in the in-depth group interview)*

Respondents (managers)	Nationality	Respondent's age	Gender	Work experience on a managerial position (number of years)	The number of employees' nationalities in the team led by the respondent	The industry in which the respondent's company operates
Manager 1	Polish	50	female	15	3	consulting industry
Manager 2	Czech	45	male	11	3	electronics industry
Manager 3	Spanish	47	male	11	5	tourism industry
Manager 4	Italian	45	male	10	4	tourism industry
Manager 5	Portuguese	49	male	14	5	hospitality industry
Manager 6	French	48	female	12	4	consulting industry
Manager 7	Greek	50	male	14	3	food industry

Source: The authors' own elaboration based on the interview with the managers (2023)

RESULTS OF THE IN-DEPTH GROUP INTERVIEW

The objectives of the individual in-depth interviews the author conducted in 2022 and 2023 included identification of particular workforce skills the managers believe will be particularly important in Industry 5.0 and identification of the areas of management of multicultural teams in which workforce skills in Industry 5.0 will be crucial for efficient performance of these teams and for achieving the organization's goals.

The objectives of the in-depth group interview described in the article included:

1. Obtaining detailed information from the managers how they understand (characterise) different groups of skills (as categorized by World Economic Forum, 2020) which will be relevant in 2025 (in Industry 5.0).
2. Obtaining information on the sources from which managers derive their knowledge regarding workforce skills in demand in Industry 5.0.
3. Identifying what particular workforce skills in Industry 5.0 the managers consider crucial for efficient performance of multicultural teams (based on the classification provided by the 2020 report of the World Economic Forum). Due to the word limit, in this article the author will analyse the results of the interview related only to this objective.

One of the questions the respondents were asked during the interview was to choose one group of skills which, in their opinion, will be crucial workforce skills in Industry 5.0. First, based on their knowledge and experience, the managers independently characterised all four groups of skills and next they listened to the descriptions of these groups read out by the author from the Future of Jobs Report. Their choices are presented in the table below (Table 4).

Table 4. *The groups of workforce skills crucial for efficient performance of multicultural teams in Industry 5.0 (the managers' answers)*

Respondents (managers)	Nationality	Problem solving	Working with people	Technology use and development	Self-management
Manager 1	Polish	-	x	-	-
Manager 2	Czech	-	x	-	-
Manager 3	Spanish	-	x	-	-
Manager 4	Italian	-	x	-	-
Manager 5	Portuguese	-	x	-	-
Manager 6	French	-	x	-	-
Manager 7	Greek	-	x	-	-

Source: The authors' own elaboration based on the interview with the managers (2023)

All the managers selected the skills from the *working with people* group, which came as a surprise to the author, as she had expected *technology use and development* or *problem solving* to be prioritized. An interesting element of the discussion held at this stage of the interview was whether this group of skills was more important for managers or for employees. Drawing on many years of their experience, the respondents argued that this group, which includes such skills as leadership and social influence, is highly relevant for employees at all positions and crucial for the successful functioning of multicultural teams. When they were asked which of the skills in this group – leadership or social influence – was more important, all the respondents chose leadership.

As the author wanted to obtain information on workforce skills crucial in Industry 5.0, she deliberately ‘narrowed down’ the participants’ choices (unlike in the individual in-depth interviews conducted in 2022 and 2023, in which the respondents could choose several answers). Thus the next question the managers were asked was to point to only one crucial skill in the *problem solving* group. Their answers are shown in Table 5.

Table 5. *Workforce skills from the problem solving group (the managers’ answers)*

Respondents (managers)	Nationality	Analytical thinking and innovation	Complex problem-solving	Critical thinking and analysis	Creativity, originality and initiative	Reasoning, problem-solving and ideation
Manager 1	Polish		x			
Manager 2	Czech		x			
Manager 3	Spanish		x			
Manager 4	Italian		x			
Manager 5	Portuguese		x			
Manager 6	French		x			
Manager 7	Greek		x			

Source: The authors’ own elaboration based on the interview with the managers (2023)

As can be seen from the above table, which is another interesting result of the interview, out of five skills in the *problem solving* group, all the managers selected *complex problem solving*. They explained their choice by arguing that this particular skill is crucial for efficient performance of multicultural teams.

In the course of the discussion, all the managers emphasised that (if they could make such a choice) they would also choose *creativity, originality and initiative*.

Next the respondents were asked to select one skill from the *technology use and development* group. All the managers chose *technology use, monitoring and control*, and argued that it was more relevant to efficient performance of multicultural teams than *technology design and programming*. Their responses are shown in Table 6.

Table 6. *Workforce skills from the technology use and development group (the managers' answers)*

Respondents (managers)	Nationality	Technology use, monitoring and control	Technology design and programming
Manager 1	Polish	x	
Manager 2	Czech	x	
Manager 3	Spanish	x	
Manager 4	Italian	x	
Manager 5	Portuguese	x	
Manager 6	French	x	
Manager 7	Greek	x	

Source: The authors' own elaboration based on the interview with managers (2023)

The next question regarded the skills from the *self-management* group. Also here the respondents were asked to select one skill which, in their opinion, is crucial for efficient performance of multicultural teams. Also in this case, all the managers selected *resilience, stress tolerance and flexibility* (Table 7). In their opinion, in a culturally diverse work environment this group of skills is more important than *active learning and learning strategies*.

Table 7. *Workforce skills from the self-management group (the managers' answers)*

Respondents (managers)	Nationality	Active learning and learning strategies	Resilience, stress tolerance and flexibility
Manager 1	Polish		x
Manager 2	Czech		x
Manager 3	Spanish		x
Manager 4	Italian		x
Manager 5	Portuguese		x
Manager 6	French		x
Manager 7	Greek		x

Source: The authors' own elaboration based on the interview with managers (2023)

DISCUSSION

Frankiewicz and Chamorro-Premuzic (2020) argue that the Industry 5.0 transformation affects people rather than technology. Although organizations are and will be interested in acquiring advanced technologies, the transformation will be carried out by their employees. Thus, this transformation will also significantly influence in-demand workforce skills. In order to adapt to changes, organizations will need not only to accurately identify the skills that will be in demand in the future but also quickly fill any potential skills gaps.

The in-depth group interview conducted by the author has demonstrated that, in the opinion of the managers from seven European countries the crucial workforce skill of members of multicultural teams that will ensure their efficient performance in Industry 5.0 belong to the group of skills categorised as *working with people*. The respondents indicated that out of two skills from this group leadership was more important than social influence. In their opinion, the crucial skill from the *problem solving* group was *complex problem solving*, the crucial skill from the *technology use and development* group was *technology use, monitoring and control*, while from the *self-management* group – *resilience, stress tolerance and flexibility*. In the author's opinion, the results

of this interview confirm the thesis that the requirements for workforce skills important in Industry 5.0 are evolving towards soft skills, particularly in the context of culturally diverse work environments, which was emphasised by managers during the interview.

So far, not many authors have explored the relationship between Industry 5.0 and workforce skills that will be in demand in the future (Breque, De Nul & Petridis, 2021, Chin, 2021). However, the author is convinced that the interest in this area is bound to increase because the efficiency of companies in Industry 5.0, the speed of their response to change, and their competitiveness in the market will heavily depend on their workforce skills.

For example, a study described by Chin (2021) examines the properties of emotional intelligence and its relationship with organisational performance. The results indicate that the four dimensions of emotional intelligence (emotional recognition and expression, emotions direct cognition, emotional management and emotional control) can play a key role in strengthening the workforce in the Industry 5.0 Era. The results also reveal that emotional control and emotional management in particular have a significant relationship with organisational performance.

Researchers emphasise that Industry 5.0 will be more human-centred, and humans and robots will work together harmoniously. Employees will be able to contribute to organisational performance, especially in the area of decision-making skills and the art of communication, which is conducive to harmony in the workplace. Employees must be able to skilfully manage their emotions, especially in extreme situations (Chin, 2021).

The fifth industrial revolution will bring man and machine together and will allow them to further harness the potential of the human mind and creativity to increase the efficiency of processes by combining workflows with intelligent systems. Based on the results of her study (Chin, 2021), the researcher suggests that having a direct access to employees' emotions could enhance decision-making skills, especially in terms of improving creativity and organisational performance.

Other studies also demonstrate that digital skills will not be the only skills necessary for factory workers in the future. The World Manufacturing Forum has identified top 10 skills that will be needed in future manufacturing (WMF, 2019).

They are as follows: Digital literacy as a holistic skill to interact with, understand, enable, and even develop new digital manufacturing systems, technologies, applications, and tools; Ability to use and design new AI and data analytics solutions while critically interpreting results; Creative problem solving in times of abundant data and technological opportunities in smart manufacturing systems; A strong entrepreneurial mindset including proactiveness and the ability to think outside the box; Ability to work physically and psychologically safely and effectively with new technologies; Inter-cultural and – disciplinary inclusive and diversity – oriented mindset to address new challenges arising from a more diverse manufacturing workforce; Cybersecurity, privacy and data/information mindfulness to reflect rapidly increasing digital footprint of the manufacturing value chain; Ability to handle increasing complexity of multiple requirements and simultaneous tasks; Effective communication skills with humans, IT and AI systems thorough different platforms and technologies; Open mindedness towards constant change, and transformation skills that constantly question the status quo and initiate knowledge transfer from other domains (Breque, De Nul & Petridis, 2021, p. 20).

Interestingly, only four of these skills are linked with digital skills: Digital literacy, AI and data analytics; Working with new technologies; Cybersecurity and Data-mindfulness. The remaining ones are transversal skills which are linked to creative, entrepreneurial, flexible, and open-minded thinking (WFM, 2019, in: Breque, De Nul & Petridis, 2021, p. 19). These are soft skills, whose role and significance are acknowledged also by other researchers (Future of Jobs Report 2016, 2020; Güğərçin & Güğərçin, 2021), as described by the author in the theoretical part of the article.

It is worth mentioning here the opinions of other authors, who write, among other things, that technical skills will become much less important in the future compared to their present position and that personal skills will take the lead (Mohd & Abid, 2020). These personal skills are called soft skills and it seems certain that in the future they will be looked for by employees as often as skills related to technology, digital proficiency, and data acumen. Soft skills include the art of communication and the ability to think creatively and critically, which is particularly important in the smooth functioning of multicultural teams.

RESEARCH LIMITATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

The author is aware of the limitations entailed in conducting qualitative research. The interview with the managers recruited through purposive sampling and the snowball sampling technique limited the group of respondents only to those managers who belonged to the author's social and professional networks. Hence, in future research on the issue of workforce skills in Industry 5.0 it is worth considering larger research samples and quantitative research.

Future research directions should include further in-depth analyses of the role of employees in the development of Industry 5.0 and the requirements for efficient performance of both people and organizations in the Era 5.0. So far, no in-depth studies on the challenges related to the implementation of the concept of Industry 5.0 in the context of workforce skills have been conducted.

In the author's opinion, it is vital that future research should focus on specific workforce skills (in different countries), also in the context of multicultural teams (internationally), which will indeed play a crucial role in the achievement of goals and performance of tasks in the face of changes related to Industry 5.0 (large research samples are advisable here). Moreover, it is worth studying how the various skills that will be in demand in the future will vary among industries, markets, and countries. Additionally, analyses should be conducted from different points of view and include opinions regarding skills in demand in the future of both managers (as described in this article) and employees.

CONCLUSIONS

The changes associated with Industry 5.0 translate into new requirements in the area of workforce skills. These skills significantly affect the functioning and performance of teams and entire companies. Hence, in the author's opinion, workforce skills is an area worth special interest – particularly skills important in the context of efficient performance of multicultural teams. The power of such teams lies in the organization's creativity and innovativeness, the

originality of proposed solutions (resulting from team members' multicultural knowledge and experiences on different markets), flexibility, and adaptability.

A thorough literature review and the in-depth group interview conducted by the author of the article have revealed that the requirements in the area of workforce skills in Industry 5.0. are evidently changing towards soft skills. An in-depth group interview with seven managers (of Polish, Czech, Spanish, Portuguese, Italian, French, and Greek nationalities) has allowed her to identify the skills which are crucial for employees in Industry 5.0. These skills belong to a group of skills called *working with people* (Future of Jobs Report, 2020), and they are, in the managers' opinion, the most important skills that have a particular impact on the smooth functioning of multicultural teams in Industry 5.0.

It should be emphasised that in order to ensure the efficiency of multicultural teams it is a necessity to introduce new solutions in the existing policy of training and developing workforce skills in demand in Industry 5.0. Employers (HR departments) can support employees' acquisition of new skills by developing and implementing new educational, training, and coaching programmes adapted to the challenges of Industry 5.0. Employees should be informed what skills they will need to work efficiently and trained how to develop them. In adapting to Industry 5.0, it will be essential for employees to promptly and flexibly adapt to change, as this will enable them to develop relevant skills, retrain, and learn new skills.

The new business model for companies' operations in Industry 5.0 (i.e. by 2025) will be based on automation systems in which humans, robots, and algorithms will cooperate. The transformation of the ways in which companies operate will require new workforce skills for efficient tasks performance. Thus, it can be legitimately concluded that despite the continuous improvement of technology, it is still employees and their skills that have (and will continue to have) a significant impact on the development of a company and its market success. As it depends on its employees how quickly and how effectively a company will react and respond to upcoming changes.

REFERENCES

- Acemoglu, D., Restrepo, P. (2018). *Low-skill and high-skill automation*. 12(2): 204-232. *Journal of Human Capital*, DOI:10.1086/697242
- Adepoju, O. O., Aigbavboa, C. O. (2021). *Assessing knowledge and skills gap for construction 4.0 in a developing economy*. 21(3), e2264. *Journal of Public Affairs*.
- Albrecht, S. L., Connaughton, S., Foster, K., Furlong, S., and Yeow, J. (2020). *Change engagement, change resources and change demands: a model for positive employee orientations to organizational change*. 11:531944. *Frontiers in Psychology*. doi: 10.3389/fpsyg.2020.531944
- Behfar, K., Kern, M., Brett, J. (2006). *Managing challenges in multicultural teams*. In: National culture and groups. Emerald Group Publishing Limited, 233-262.
- Breque, M., De Nul, L., Petridis, A. (2021). *Industry 5.0 towards a sustainable, human-centric and resilient European industry*. Luxembourg: Publications Office of the European Union. doi: 10.2777/308407
- Burnes, B. (2011). *Introduction: why does change fail, and what can we do about it?* 11: 445-450. *Journal of Change Management*. doi: 10.1080/14697017.2011.630507.
- Carayannis, E.G., Morawska-Jancelewicz, J. (2022). *The Futures of Europe: Society 5.0 and Industry 5.0 as Driving Forces of Future Universities*. 13, 1-27. *Journal of the Knowledge Economy*.
- Chaturvedi, K. (2022). *Impact of Cross-Cultural Diversity on Organizational Productivity*. 5(2):70-73. *International Journal of Research in Engineering, Science and Management*, <https://www.ijresm.com>. ISSN (Online): 2581-5792.
- Chin, Susan Tee Suan. (2021). *Influence of Emotional Intelligence on the Workforce for Industry 5.0*. Article ID 882278, *Journal of Human Resources Management Research*. doi: 10.5171/2021.882278
- Demir, K. A., Cicibas, H. (2017). *Industry 5.0 and a Critique of Industry 4.0*. In 4th international management information systems conference, 17-20 October, Istanbul, Turkey (pp. 1-11).
- Doherty, O., Stephens, S. (2021). *The skill needs of the manufacturing industry: can higher education keep up?* 63(4), 632-646. *Education + Training*.
- Elim, H. I., & Zhai, G. (2020). *Control system of multitasking interactions between society 5.0 and industry 5.0: A conceptual introduction & its applications*. 1463(1), 012035. *Journal of Physics: Conference Series*, DOI 10.1088/1742-6596/1463/1/012035
- Ellingrud, K., Gupta, R., Salguero, J. (2020). *Building the vital skills for the future of work in operations*. McKinsey & Company.
- Ellitan, L. (2020). *Competing in the Era of Industrial Revolution 4.0 and Society 5.0*. 10(1):1-12. *Jurnal Maksipreneur*.

- Ellitan, L., Anatan, L. (2020). *Achieving Business Continuity in Industrial 4.0 and Society 5.0*. 4: 235–239. International Journal of Trend in Scientific Research and Development.
- Ernst, E., Merola, R., Samaan, D. (2019). *Economics of Artificial Intelligence: Implications for the Future of Work*. 9(1):1-35. IZA Journal of Labor Policy. doi:10.2478/iza-jolp-2019-0004
- Fugate, M. (2012). *The impact of leadership, management, and HRM on employee reactions to organizational change*. 31: 177-208. Research in Personnel and Human Resources Management. doi: 10.1108/S0742-730120120000031007
- Frankiewicz, B., Chamorro-Premuzic, T. (2020, May). *Digital transformation is about talent, not technology*. 6,3. Harvard Business Review.
- Retrieved from: <https://enterprisersproject.com/sites/default/files/digitaltransformationtalent.pdf>
- Frey, C. B., Osborne, M. A. (2017). *The future of employment: How susceptible are jobs to computerisation?*. 114:254-280. Technological Forecasting and Social Change, Elsevier, DOI: 10.1016/j.techfore.2016.08.019
- Gibson, C. B., McDaniel, D. M. (2010). *Moving beyond conventional wisdom: Advancements in cross-cultural theories of leadership, conflict, and teams*. 5: 450-462. Perspectives on Psychological Science.
- Güğerçin, S., Güğerçin, U. (2021). *How Employees Survive In The Industry 5.0 Era: In-Demand Skills Of The Near Future*. 7 (31):524-533. International Journal of Disciplines Economics & Administrative Sciences Studies.
- Hajro, A., Gibson, C. B., Pudelko, M. (2017). *Knowledge exchange proces in multicultural teams: linking organizational diveristy climates to teams' effectiveness*. 60(1):345-372. Academy of Management Journal 2017, <https://doi.org/10.5465/amj.2014.0442>
- Horwitz, S.K. and Horwitz, I.W. (2007), *The effects of team diversity on team outcomes: a Metaanalytic review of team demography*. 33(6): 987-1015. Journal of Management.
- Juszczyk, S. (2013) *Badania jakościowe w naukach społecznych. Szkice metodologiczne*. Katowice: Wydawnictwo Uniwersytetu Śląskiego.
- Kim, J., Park, C. Y. (2020). *Education, skill training, and lifelong learning in the era of technological revolution: A review*. 34(2), 3-19. Asian Pacific Economic Literature.
- Karna, W.J., Knap-Stefaniuk, A. (2019). *Challenges in Managing Multicultural Teams*. 3(26): 6785. Perspectives on Culture.
- Khemissi, F., Jouili, T. (2021). *The Impact of Skills Development on Employee Performance*, 21 (11): 278-286. International Journal of Computer Science and Network Security. <https://doi.org/10.22937/IJCSNS.2021.21.11.38>
- Mannix, E., Neale, M.A. (2005), *What differences make a difference? The promise and reality of diverse teams in organizations*. 6(2): 31-55. Psychological Science in the Public Interest.

- Martin, B., Healy, J. (2009). *Changing Work Organization and Skill Requirements*, 35(3): 393-437. Australian Bulletin of Labour.
- Misoc, I. (2017). *The Effects of Cultural Diversity on Team Performance: A Comparison between the Performance of Monocultural Teams and the Performance of Multicultural Teams in Tourism Organizations*.7(7): 207-218. International Journal of Academic Research in Business and Social Sciences.
- Miszczak, A., Walasek, J. (2013). *Techniki wyboru próby badawczej*. 2(6):100-108. Obronność – Zeszyty Naukowe Wydziału Zarządzania i Dowodzenia Akademii Obrony Narodowej.
- Mohd J., Abid, H (2020). *Critical Components of Industry 5.0 Towards a Successful Adoption in the Field of Manufacturing*. 05(03):327-348. Journal of Industrial Integration and Management.
- Morraz, R. Arman, H. Mousa, S. (2017). *The Fourth Industrial Revolution (Industry 4.0): A Social Innovation Perspective*. 7:12-20. Technology Innovation Management Review.
- Olejniczak, T., Miszczynski, M., and Itohisa, M. (2020). *Between closure and Industry 4.0: strategies of Japanese automotive manufacturers in Central and Eastern Europe in reaction to labour market changes*. 20(2): 196-214. International Journal of Automotive Technology and Management.
- Pereira, A.G., Lima, T.M., Charrua-Santos, F. (2020). *Industry 4.0 and Society 5.0: Opportunities and threats*. 8: 3305-3308. International Journal of Recent Technology and Engineering.
- Phillips, J., Klein, J.D. (2023). *Change Management: From Theory to Practice*. (2023) 67:189–197. TechTrends. <https://doi.org/10.1007/s11528-022-00775-0>
- Saniuk, S., Grabowska, S., Straka, M. (2022). *Identification of Social and Economic Expectations: Contextual Reasons for the Transformation Process of Industry 4.0 into the Industry 5.0 Concept*. 14: 1391. Sustainability.
- Savanevičienė, A.; Statnickė, G.; Vaitkevičiū, S. (2019). *Individual Innovativeness of Different Generations in the Context of the Forthcoming Society 5.0 in Lithuania*. 30: 211-222. Engineering. Economics.
- Schwab, K., Zahidi, S. (2020). *The Global Competitiveness Report: special edition 2020*, (report), National Competitiveness and Productivity Council. Department of Enterprise, Trade and Employment, 2020-11-30 (<http://hdl.handle.net/2262/95479>)
- Skobelev, P.O., Borovik, S.Y. 92017). *On the way from Industry 4.0 to Industry 5.0: From digital manufacturing to digital society*. 2: 307-311. International Scientific Journal Industry 4.0.
- Stahl, G. K., Maznevski, M., Voigt, A.S. and Jonsen, K. (2010). *Unraveling the effects of cultural diversity in teams: A meta-analysis of research on multicultural work groups*. 41(4), 690-709. Journal of International Business Studies.

- Stevens F.G., Plaut V.C., Sanchez-Burks J. (2008). *Unlocking the benefits of diversity. All-inclusive multiculturalism and positive organizational change*. 44(1): 116-133. The Journal of Applied Behavioral Science.
- Szpilko, D. Szydło, J., Samul, J. (2022). *Challenges And Benefits of Working In Multicultural Teams: Evidence from Poland and Romania*. Article ID 493446. The Journal of Organizational Management Studies. doi: 10.5171/2022.493446
- Sogancilar, N., Ors, H. (2018). *Understanding the challenges of multicultural team management*. 793):259-268. Journal of Business, Economics and Finance. DOI: 10.17261/Pressacademia.2018.954
- The Future of Jobs Report. (2016). Retrieved from: http://www3.weforum.org/docs/WEF_Future_of_Jobs.pdf
- The Future of Jobs Report. (2020). World Economic Forum. Retrieved from: <https://www.weforum.org/reports/the-future-of-jobs-report-2020>
- WMF (2019) The WMF's Top Ten Skills for the Future of Manufacturing, <https://www.worldmanufacturingforum.org/skills-for-future-manufacturing>
- Xu, X., Lu, Y., Vogel-Heuser, B., Wang, L. (2021). *Industry 4.0 and Industry 5.0-Inception, conception and perception*. 61:530-535. Journal of Manufacturing Systems. <https://doi.org/10.1016/j.jmsy.2021.10.006>
- Yavari, F., Pilevari, N.(2020). *Industry revolutions development from Industry 1.0 to Industry 5.0 in manufacturing*. 5: 44-63. Journal of Industrial Strategic Management.
- Ybarra, O. (2023). *The skills that help employees adapt: Empirical validation of a four category framework*. 18(2): e0282074. PLoS ONE. <https://doi.org/10.1371/journal.pone.0282074>