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Generation Alpha – the new career generation in the age of AI

Pokolenie alfa – generacja nowej kariery w dobie AI

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Abstract:
Research objectives and hypothesis/research questions
The aim of this article is to systematize knowledge about Generation Alpha in the context of shaping the professional careers of the youngest generation in the age of artificial intelligence. An attempt is made to identify areas for future research. The article is of a theoretical and cognitive nature.
Research methods
Narrative literature review.
Main results
The specifics of shaping the careers of the youngest generations are gaining in appeal, remaining a highly relevant area of research. The labor market is changing rapidly, raising questions about what model and format of career development will be most desirable in the future among representatives of the younger generations, who will undoubtedly redefine the functioning of today's organizations. Dominated by technology, they are often deprived of deeper relationships with their peers, yet simultaneously seek empathy and understanding. In what roles will they feel fulfilled and happy? Will artificial intelligence enable professional and personal development in the way we think of it today? Will it become a limitation and barrier to developing the competencies it could replace? Today, many questions remain unanswered, and the scope for research remains essentially limitless. Based on initial studies of this generation one can only assume how much the career landscape of future generations will change, with their approach to the essence of work differing from that of Generation X or Y employees. Autonomy, independence, a strong

identification with technology, and the need for change will result in expectations and needs reshaping the professional and organizational landscape, redefining previously prevailing career patterns and schemes.
Implications for theory and practice
Generation Alpha faces a paradox: the same technological advancements that create global career opportunities also pose significant challenges. Their future careers will be shaped by these emerging technologies, highlighting the need to develop both technical skills and human competencies. Mastering this combination will be essential for successfully navigating an increasingly complex, fast-evolving, and project-based labor market (Uhrig, 2021; World Economic Forum, 2025).
Keywords: artificial intelligence, career, generation Z, generation alpha, career development

Abstrakt:
Cel badań i hipotezy/pytania badawcze
Celem artykułu jest usystematyzowanie wiedzy na temat pokolenia alfa w kontekście kształtowania karier zawodowych najmłodszego pokolenia w dobie sztucznej inteligencji. Podjęto próbę wskazania obszarów przyszłych badań. Artykuł ma charakter teoretyczno-poznawczy.
Metody badawcze
Narracyjny przegląd literatury.
Główne wyniki
Specyfika kształtowania karier najmłodszych pokoleń zyskuje na atrakcyjności, pozostając niezwykle istotnym obszarem badań. Rynek pracy dynamicznie się zmienia, co rodzi pytania o to, jaki model i format rozwoju kariery będą w przyszłości najbardziej pożądane wśród przedstawicieli młodszych pokoleń, które niewątpliwie na nowo zdefiniują funkcjonowanie dzisiejszych organizacji. Zdominowani przez technologię często pozbawieni są głębszych relacji z rówieśnikami, a jednocześnie poszukują empatii i zrozumienia. W jakich rolach będą czuć się spełnieni i szczęśliwi? Czy sztuczna inteligencja umożliwi rozwój zawodowy i osobisty w sposób, w jaki postrzegamy ją teraz? Czy stanie się ograniczeniem i barierą w rozwijaniu kompetencji, które mogłaby zastąpić? Wiele pytań pozostaje dziś bez odpowiedzi, a zakres badań pozostaje zasadniczo nieograniczony. Na podstawie wstępnych badań tego pokolenia można jedynie przypuszczać, jak bardzo zmieni się krajobraz zawodowy przyszłych pokoleń, których podejście do istoty pracy będzie się różnić od podejścia pracowników generacji X i Y. Autonomia, niezależność, silna identyfikacja z technologią i potrzeba zmian doprowadzą do tego, że oczekiwania i potrzeby zmienią krajobraz zawodowy i organizacyjny, a dotychczasowe wzorce i plany kariery zostaną zdefiniowane na nowo.
Implikacje dla teorii i praktyki
Pokolenie alfa stoi w obliczu paradoksu: te same postępy technologiczne, które tworzą globalne możliwości kariery, stawiają również przed nimi poważne wyzwania. Ich przyszłe kariery będą kształtowane przez te nowe technologie, co podkreśla potrzebę rozwijania zarówno umiejętności technicznych, jak i kompetencji interpersonalnych. Opanowanie tej kombinacji będzie kluczowe dla skutecznego poruszania się po coraz bardziej złożonym, szybko ewoluującym i opartym na projektach rynku pracy (Uhrig, 2021; World Economic Forum, 2025).
Słowa kluczowe: sztuczna inteligencja, kariera, pokolenie Z, pokolenie alfa, rozwój kariery

Introduction

The topic of young generations in the context of the contemporary labor market raises many questions and concerns about the direction in which the market will change in response to the influx of young workers, who came of age at a time of significant technological development (see e.g., Neufeind, O'Reilly, Ranft, 2018). Among the most important changes is undoubtedly the development of artificial intelligence, which is already transforming the labor market, raising questions about the scope of its use, changes in the employment structure, the creation of new jobs,

the creation of professions of the future, as well as ethical, social, and psychological aspects (see e.g., Lane, Saint-Martin, 2021; OECD, 2023; Su, Togay, Côté, 2021).

Minky, one of the pioneers of artificial intelligence, defines it as enabling machines to perform tasks that require human intelligence. The symbolic school, on the other hand, posits that artificial intelligence is the operation of symbols, and the most primitive symbols correspond to physical entities. Although the scope of definitions varies, it is generally accepted that the core of AI lies in research theories, including methods, technologies, and applications that simulate and augment human intelligence (Jiang, Li, Luo et al., 2022).

Data from the Artificial Intelligence Index Report 2025 indicates that businesses are strongly focusing on AI, which in turn translates into investment and its use. In 2024, private investment in AI in the US increased to $109.1 billion. 78% of organizations reported using AI in 2024. Research increasingly confirms that AI increases productivity and helps reduce skill gaps among employees. Importantly, global optimism about AI is also growing, but deep regional divides remain. China (83%), Indonesia (80%), and Thailand (77%) clearly perceive AI products and services as more beneficial than harmful. However, in countries such as Canada (40%), the USA (39%), and the Netherlands (36%), this optimism is lower. However, sentiment is still changing. The year 2022 showed that optimism increased in previously sceptical countries such as Germany (+10%), France (+10%), Canada (+8%), Great Britain (+8%), USA (+4%) (Maslej, Fattorini, Perrault et al., 2025).

Young generations, especially Generation Z (born between 1995 and 2010), are perceived largely through the lens of technology – as leaders of change in this area. Among many competencies, digital skills, as well as an understanding of the digital world and its nuances, are particularly associated with this generation. It seems that many competencies are overlooked or marginalized, placing technology at the center – as a key dimension. But should technology be the sole source of the abilities and competences of the younger generations?

There is no doubt that technological development is transforming not only the labor market and the organizations operating within it, but also entire societies, expressing itself in new behaviors, attitudes, but also expectations and needs (see e.g., Zhu, Corbett, Chiu, 2021; Lichtenthaler, 2020; Yadrovskaia, Porksheyan, Petrova et al., 2023). Although each generation makes a unique contribution to creating professional, social, and cultural spaces, the strength and direction of today's changes suggest that their dynamics and scope will have a particular impact on the specific activities, attitudes, and decisions of the youngest generations. The topic of career development remains relevant. Its essence and role in a changing world are significant. It raises numerous questions about what the career of the future will be (Barhate, Dirani, 2022), what value it will hold from the perspective of the youngest generations (Prawitasari, 2018; Becer, 2021), and which of its components will be crucial for the functioning and development of organizations.

How will young generations think about their own careers, what will they associate them with, and on what values will they base their functioning in the socio-professional sphere (see e.g., Ilieva, Vitanova, 2019). Beyond the individual dimension, however, the broader context of building the careers of young generations should also be considered, particularly in the context of the emergence of future professions, their attractiveness, and accessibility for the youngest members of the labor market. On the other hand, it is also necessary to take into account the psychosocial dimension related to fulfilling specific professional roles, and furthermore, to building well-being, emotions, and psyche, which is an integral part of functioning effectively in the world of work.

1. Generation Alpha – Who are the successors of the Gen Z?

Although the alphabet ends with the letter Z, generational change certainly doesn't. McCrindle and his team conducted a 2005 study in which the most popular choice for describing the next generational group was Gen Alpha. However, as the literature suggests, previous findings focus primarily on the name, its origins, and the rather vague descriptions of the characteristics of this group (Nagy, Kölcsey, 2017). This is clearly too little to realistically assess the potential expectations, choices, and career paths of the youngest generation. However, it can be assumed that the technological revolution in which the youngest generation lives and develops will certainly play a significant role in shaping the needs, opportunities, and challenges of the future labor market. By the time this generation ends in December 2024, approximately two billion Gen Alphas will have been born worldwide, making it the largest generation in human history (cf. Rose, Thomas, 2024; Jaiswal, 2023). This will not only be the largest but also the most diverse generation in history (Albescu, Vevera, 2024). This is also a group for which the physical boundaries of the world will practically cease to exist. We are already observing this today. Even from different parts of the world, they can watch the same movie, listen to the same music, and pursue the same global plan. Unlike previous generations, we can therefore formulate much more coherent predictions that will define the characteristics of this generation (Çetinkaya, 2020, cited in: Fidan, 2022). Generation Alpha encompasses individuals born after 2010. Although it is uncertain whether a clear line exists between Generation Alpha and Generation Z, recent findings indicate that its members are not only more curious about the world but also even more creative than their predecessors. Immersed in the digital world practically from birth, they remain highly vulnerable to, or even dependent on, technology, which brings with it both relational and emotional problems (Drugas, 2022; cf. Tootell, Freeman, 2014). Literature refers to Alphas as "cloud kids", "the physical natives", or "screenagers" (Oktay, Acaralp, 2025). Because they interact with a wide range of technologies in

a dynamic society, this expanded exposure means they are perceived as smarter and better equipped, but also more socially aware than their predecessors. Generation Alpha is already openly questioning the learning environment in which they currently operate and, in the near future, will demand distinct teaching and learning methods tailored to individual needs and abilities (Rose, Thomas, 2024). Each young generation has its own specific, unique characteristics and needs, which are determined on the one hand by its physiological and psychological development, but on the other by the socio-political situation in which it grows up. These characteristics and needs must be recognized and reflected upon so that education can be tailored (Yurtseven, 2020) and, ultimately, development in its broadest sense is possible. It is already being signaled that the specific conditions in which this generation grows up will be associated with skills and needs specific to this generation.

It is believed that Generation Alpha will be, on the one hand, the most entrepreneurial, the best in terms of technology use in history, but on the other, they will have fewer interpersonal contacts than previous generations (X, Y). They will be characterized by greater self-sufficiency, better educated, but also extremely spoiled due to their parents' parenting tactics (Bejtkovský, 2016; see, e.g., Fidan, 2022), which in the context of functioning in the social and professional spheres can pose many challenges, especially for employers. Today's Generation Z, aware of their own value and needs, easily crosses boundaries in communicating and enforcing their own expectations, which has become a problem for many organizations and leading to significant changes in HR strategies in the areas of management, recruitment, development, and benefits. There is no doubt that the presence of Generation Alpha will significantly impact the dynamics of the labor market. Its representatives, born in the digital age, are growing up in a highly connected environment. They are expected to introduce new expectations in both leadership and organizational structures (Wrede, 2025). As pioneers in the labor market, they will be one step ahead of Generation Z in terms of technological advancements and innovation, bringing potential changes to the organizational landscape and HR strategies that can only be predicted by a global understanding of their social, economic, and technological environments, which shape their specific characteristics (Jaiswal, 2023). Analyzing the specifics of this generation, it should be noted that it is the most diverse generation in history in terms of ethnicity, gender identity, lifestyle, opinions, and preferences. Often raised in single-parent families, where the single-parent culture is much more visible in the context of childhood. However, this specific lifestyle makes Alphas much more susceptible to mental health problems (Fransson, Hjern, Bergström, 2018). The emergence of the next generation requires a paradigm shift in leadership strategies to meet the demands of this highly digital, socially conscious, yet highly individualistic generation (Luo, Wongleedee, 2025). Traditional concepts of success will continue to evolve. The emergence of Generation Alpha means their subjective definitions of success may differ significantly from

those of previous generations. Unlike the Gen Y, the career aspirations of Gen Z are shaped by platforms like Roblox and TikTok, where entrepreneurship and digital creativity are the norm from early childhood (Kurniawan, 2025). Attention is also drawn to the key talents of 21st-century students – critical thinking, creativity, communication, teamwork, digital literacy, adaptability, cultural competence, independence, empathy, and global awareness, without which development in a dynamically changing world and achieving success in various fields of activity will likely be impossible (Arunasalam, 2024).

Characteristics of this generation indicate a tendency to ask more questions, assuming that this is a more extroverted generation, solving problems mentally, and, most characteristically, being extremely technologically advanced (Rausch, Brown, Adams, 2021). Researchers also indicate that nearly half of Generation Alpha are already using AI tools, with boys and older children leading the way. According to data collected among parents, interest in and use of AI tools steadily increases with age, regardless of gender. Research suggests that 30% of seven-year-olds use AI tools, compared to approximately 60% of 13-14-year-olds (Pierre, 2024). There is no doubt that artificial intelligence will be an important component of the youngest generation's careers. In today's world, there is a growing tendency to promote and teach digital skills, which are more important than ever before, especially in the context of a world transformed by technology. The concept of "digital intelligence" has become a keyword in the era of digital transformation. In its simplest terms, it is assumed to be related to our interactions with technology. It is a set of specific social, emotional, and cognitive abilities that help us regulate emotions and adjust behaviors and skills to cope with digital life. A significant challenge is developing strategies that will equip Generation Alpha with these skills (Avci, Adiguzel, 2020). When analyzing competences in the context of shaping Generation Alpha's careers, it is also important to note that young people in the European Union perceive their professional future with fear and uncertainty (Neamtu, Hapenciuc, Bejinaru, 2020). These concerns are fully justified, as it is already known that many people will suffer from an inability to adapt to the new technological reality and new business models. However, it is important to remember that the future does not arrive immediately and certainly not everywhere at the same time. The development of artificial intelligence, automation, big data, and trends related to the aging of societies will impact the professional aspects and activities of people in the future. Robots certainly will not take over all human jobs, but many traditional professions are at risk of significant transformation (Bejinaru, Balan, 2020). Literature indicates that the Screenager generation will enter a labor market dominated by part-time work and freelance opportunities, with traditional career paths becoming less relevant (McCrindle, Fell, 2020). These Alphas will work in emerging industries – cybersecurity, application development, and cryptocurrency. They will be lifelong learners, working multiple jobs and adopting various career paths. Flexibility and continous upskilling will be

key to meeting the expected changes as their careers evolve (McCrindle, Fell, 2020). Importantly, as Generation Alpha is growing up surrounded by technology, the methods they find attractive in the context of decision-making and actions will require personalized, user-friendly, and visually engaging elements, not only in marketing campaigns but also in recruitment processes (Kaynak, 2017). Researchers indicate that Generation Alpha members, who will enter business life in the 2030s, will have the opportunity to acquire a significantly better education than previous generations and will also have the opportunity to pursue a multi-track career, changing their direction at least six times. Importantly, in the context of professional work, they will accept diversity, social difference, and maintain humanistic social values, a result of being raised by educated parents (Bozak, 2021). Acceptance of diversity will be significantly greater than it is today among representatives of Generations X, Y, and even Z. The rapid and continuous changes the world is undergoing as a result of digital transformation mean that the time between one generation and the next is becoming increasingly shorter. It is the use of technology, not historical or social events, that is beginning to define subsequent generations (Albescu, Vevera, 2024), raising the question of what kind of society and what kind of organizations will soon be created by those growing up in the era of the digital revolution.

2. Generation Alpha in the age of artificial intelligence: Emerging career paths

The emergence of artificial intelligence has revolutionised the modern world by altering the way people work, collaborate, and interact with technology in their everyday lives. AI tools are increasingly being applied across various sectors –including healthcare, technology, public policy, and education – to automate routine tasks, streamline processes, and enhance efficiency and accuracy (Su, Ng, Chu, 2023; Śledziewska, Włoch, 2020; Rathore, 2023). It is also substantially transforming the labour market by reshaping the demand for skills, redefining professional roles, creating new occupations, and eliminating others (Skorupka, 2024). These changes have significant implications for the career trajectories of Generation Alpha (Shiohira, 2021).

As estimated by McKinsey & Company (2023), the adoption of AI could add between 2.6 and 4.4 trillion dollars per year to the global economy. Brynjolfsson and McAfee (2015) highlight that AI will continue to transform the labour market – from the automation and algorithmic management of routine tasks to the emergence of new roles such as AI specialists, ethics experts, and human-AI interaction designers. Therefore, the influence of AI cannot be ignored or underestimated, as it is already shaping the world in which Generation Alpha is growing up.

Research shows that most members of Generation Alpha have been using technology–such as tablets, smartphones, and interactive digital tools–since early childhood. Growing up immersed in these technologies has shaped their cognitive and social development, as well as their learning preferences (Uhrig, 2021).

Consequently, the integration of technology into education – such as the use of smartwatches and instructional YouTube videos in physical education classes – has been shown to enhance student engagement while developing skills such as coordination and self-regulation (Piepiora, 2024). Moreover, Swargiary (2024) found that integrating AI into primary and secondary school curricula significantly improved Generation Alpha students' academic performance and engagement, particularly in mathematics and special education.

Similarly, Xu (2024), and Cha and Daud (2025) showed that AI-driven personalized learning enhanced students' understanding, literacy and numeracy skills, and confidence in solving problems. Researchers, including Fikri and Rhalma (2024), and Escotet (2024), have consistently found that integrating AI-driven tools into school curricula enhances students' motivation, engagement, and curiosity.

On the other hand, researchers caution against potential negative outcomes of AI use. A growing body of evidence suggests that frequent use of AI tools may hinder critical thinking, problem-solving abilities, creativity, and independent decision-making, particularly among younger users (e.g. Gerlich, 2025; Dergaa, Ben Saad, Glenn et al., 2024; Rohilla, 2025). Some studies even indicate that overreliance on AI can lead to cognitive atrophy, reducing engagement and diminishing innovative thinking (Dergaa, Ben Saad, Glenn et al., 2024).

Another major concern involves the deepening of educational inequalities, as students from under-resourced schools may not have equal access to AI tools (Williamson, Eynon, 2020). Furthermore, scholars highlight ethical implications of AI, including algorithmic bias, data privacy issues, and the potential dehumanization of the learning process (Selwyn, 2019; Escotet, 2024).

To sum up, most researchers agree that a balanced approach should be promoted, integrating AI tools with traditional teaching methods to ensure effective learning outcomes (e.g. Cha, Daud, 2025). One notable theoretical approach is Firat's (2025) concept of "intelagencyism", which frames AI not merely as a tool, but as a partner that supports children in learning and thinking independently. Rather than replacing human cognition, AI serves as a supportive partner, helping Generation Alpha develop creativity, adaptability, and self-directed learning skills. This approach illustrates how personalised, interactive, and digitally integrated learning can equip children to navigate the challenges and opportunities of an AI-driven world.

3. Potential or threat: Shaping careers in the new market realities

The dynamic development of artificial intelligence is transforming the labour market at an unprecedented pace. For Generation Alpha – who are just beginning their education and preparing for future careers – this transformation brings enormous opportunities, but also tangible risks. In addition to the rise of AI, today's labour market is shaped by other factors, including the unpredictability and volatility of the VUCA environment, the emergence of new professions alongside the decline of others, and demographic shifts leading in a smaller workforce (Kowalczyk-Kroenke, 2024).

In a VUCA world filled with uncertainty and complexity, another acronym has emerged to describe today's reality – BANI. It stands for Brittle, Anxious, Nonlinear, Incomprehensible (see e.g. Halil, Aziz, Hassan, 2025; Mannion, 2025). BANI refers to the complex and unpredictable challenges that societies, organizations, and individuals face today (Jedaman, Pitchaya-Auckarakhun, Kasorn et al., 2024). In the area of workplace challenges, this is well illustrated by the *Future of Jobs Report* (World Economic Forum, 2025), which highlights the range of possible changes and challenges.

According to the *Future of Jobs Report* (World Economic Forum, 2025), technological advancements may result in the loss of up to 75 million jobs worldwide, while 133 million new roles are expected to emerge – aligned with the evolving digital economy. The fastest-growing skills by 2030 are projected to include competencies in artificial intelligence and big data, networking and cybersecurity, as well as overall technological literacy (World Economic Forum, 2025). Humans and robots are expected to collaborate in unprecedented ways (Poba-Nzaou, Galani, Uwizeyemungu et al., 2021), highlighting the growing importance of technological skills for future workers from Generation Alpha.

The OECD (2019) emphasizes that critical thinking, adaptability, creativity, curiosity, and open-mindedness will define employability in the future world of work. Stone, Brooks, Brynjolfsson et al. (2022) add that emerging jobs projected for 2030 – such as those related to autonomous vehicles, healthcare diagnostics, and elder care assistance – will require development of these skills. Similarly, Lee and Qiufan (2022) note that in the context of job losses associated with AI adoption, three human abilities: creativity, empathy, and dexterity will be crucial for maintaining a competitive advantage over AI.

In addition to technological shifts, demographic factors are also reshaping the labour market. An ageing population and growing labour shortages are projected to reduce the working-age population by as many as 20.8 million between 2005 and 2030. These changes are likely to significantly affect Generation Alpha, as a smaller workforce may lead to reduced productivity and slower economic growth (Kowalczyk-Kroenke, 2024).

Moreover, the rapid development of technology along with the uncertainty and complexity of the current VUCA environment, is expected to transform Generation Alpha's careers. Specifically, their professional trajectories are likely to be more fluid, multidimensional, and interdisciplinary than those of previous generations, with a strong emphasis on project-based work, hybrid arrangements, and global collaboration. In other words, they represent a "generation without boundaries" (Fidan, 2022), for whom linear career paths are becoming increasingly uncommon.

Career success is no longer defined primarily by hierarchical advancement, but rather by autonomy in managing work–life boundaries, digital literacy, meaningful work, and alignment with personal values (Kurniawan, 2025). Building on this, Albescu and Vevera (2024) highlight that Generation Alpha particularly values autonomy, meaningfulness, and flexibility in their careers, favoring a work-life blend over the traditional concept of work-life balance.

Swargiary (2024) also notes a shift away from the traditional education-work-retirement model toward a system in which lifelong learning becomes a central and continuous aspect of career development. In line with this, researchers emphasize that members of Generation Alpha are likely to demonstrate advanced multitasking capabilities (Uhrig, 2021), high adaptability, dynamism, and openness to change (Karatayev, Matyakubov, Mutaliyeva et al., 2024), as well as strong information-gathering and processing skills (Nagy, Kölcsey, 2017). These competencies will support their ability to navigate a career landscape increasingly oriented around lifelong learning.

This evolving career landscape is further shaped by the fact that Generation Alpha has been exposed to digital technologies from birth. Such early interaction with digital devices, particularly artificial intelligence, is expected to leave a lasting imprint on their career expectations, preferences, and learning needs (Uhrig, 2021). On one hand, the literature shows that early exposure to diverse digital tools helps Generation Alpha develop a broader set of competencies in education that will be valuable for their future careers (e.g. Swargiary, 2024). On the other hand, it raises several potential risks and challenges. These include attention deficit disorders, difficulties with self-regulation (Uhrig, 2021), technology addiction (Garaigordobil, 2023), and other psychological issues, including potential declines in cognitive skills (e.g. Gerlich, 2025).

Moreover, the shift toward hybrid and project-based work, enabled by digital technologies, may introduce psychosocial challenges, such as digital burnout, social isolation, and heightened performance pressure. The unpredictability of the AI-driven labor market, with emerging professions that do not yet exist, adds further uncertainty and requires exceptional adaptability and resilience from young workers (Kurniawan, 2025; Albescu, Vevera, 2024).

Consequently, Generation Alpha faces a paradox: the same technological advancements that create global career opportunities also pose significant challenges. Their future careers will be shaped by these emerging technologies, highlighting the need to develop both technical skills and human competencies. Mastering this combination will be essential for successfully navigating an increasingly complex, fast-evolving, and project-based labor market (Uhrig, 2021; World Economic Forum, 2025).

4. Conclusions, recommendations, and further research directions

The specifics of shaping the careers of the youngest generations are gaining in appeal, remaining a highly relevant area of research. The labor market is changing rapidly, raising questions about what model and format of career development will be most desirable in the future among representatives of the younger generations, who will undoubtedly redefine the functioning of today's organizations. Dominated by technology, they are often deprived of deeper relationships with their peers, yet simultaneously seek empathy and understanding. In what roles will they feel fulfilled and happy? Will artificial intelligence enable professional and personal development in the way we think of it today? Will it become a limitation and barrier to developing the competencies it could replace? Today, many questions remain unanswered, and the scope for research remains essentially limitless. Based on initial studies of this generation one can only assume how much the career landscape of future generations will change, with their approach to the essence of work differing from that of Generation X or Y employees. Autonomy, independence, a strong identification with technology, and the need for change will result in expectations and needs reshaping the professional and organizational landscape, redefining previously prevailing career patterns and schemes. The review of available research and studies presented in this paper supports the conclusion that the process of transforming contemporary careers has already begun, and ongoing technological development, especially in the area of artificial intelligence, will only deepen it. It is certainly worth noting that the demand for specific professions will change as a result of AI development. The professions of the future will define a new range of competencies and skills. A significant gap is identified in this area: which of these competencies will be crucial for employee competitiveness in the labor market? What should those just beginning their career paths focus on to ensure opportunities for work, broadly understood development, and advancement? In what direction should organizations shift when planning career paths for the youngest representatives of the labor market?

Among the key recommendations for career planning among the youngest generations, the importance of the education process itself in career thinking is certainly worth mentioning. Dynamic changes in the social, economic, and cultural spheres, supported by technological advancements, mean that the demand for specific skills and competencies is rapidly evolving. Therefore, it is crucial to not only accurately identify but also develop the potential and areas that can potentially be considered talents among young people. Recognizing personal and psychophysical predispositions provides the opportunity to confidently direct and develop this potential at a very early stage. Education about technology itself remains equally important – the potential opportunities it offers, but also the threats and challenges it brings. There is no doubt that technological development will not stop, but understanding what it is, what its value is, what its purpose can be, and what potential threats may lie within it is crucial for its proper use.

REFERENCES

[1] Albescu, A.R.,Vevera, A.V., 2024. *Living the phygital era: Generation Alpha is redefining our world*, [in:] Cîrnu, C.E., Albeanu, G., Ciupercă, E.M., Popovici, D.M. (eds.), *Proceedings of the International Conference on Virtual Learning – ICVL 2024: Virtual Learning – Virtual Reality*, Vol. 19, pp. 205-215.

[2] Arunasalam, M., 2024. *Reaching and teaching generation Alpha. Changing Landscape of Education*, Vasantha Nagar, Madurai: Shanlax Publications.

[3] Avci, H., Adiguzel, T., 2020. *Leveraging digital intelligence in generation alpha*, [in:] Yurtseven, N. (ed.), *The Teacher of Generation Alpha*, Lausanne: Peter Lang Group AG, pp. 119-132.

[4] Barhate, B., Dirani, K.M., 2022. Career aspirations of generation Z: a systematic literature review, *European Journal of Training and Development*, No. 46 (1-2), pp. 139-157.

[5] Becer, T., 2021. The influence of generations y and z on career future, *International Journal of Management and Social Researches*, No. 8 (15), pp. 91-103.

[6] Bejinaru, R., Balan, I., 2020. IT tools for managers to streamline employees' work in the digital age, *The USV Annals of Economics and Public Administration*, No. 20 (1[31]), pp. 120-130.

[7] Bejtkovsky, J., 2016. The current generations: the baby boomers, x, y and z in the context of human capital management of the 21st century in selected corporations in the Czech Republic, *Littera Scripta*, No. 9 (2), pp. 25-45.

[8] Bozak, A., 2021. Instructional Reverse Mentoring: A Practice Proposal for Teachers' Understanding the "Z" and "Alpha" Generations' Learning Perspectives, *Online Submission*, No. 12 (43), pp. 114-142.

[9] Brynjolfsson E., McAfee A., 2015. *Wyścig z maszynami*, Warszawa: Kurhaus Publishing.

[10] Cha, W.K., Daud, P., 2025. Enhancing early education with artificial intelligence: A comparative study of AI-powered learning versus traditional methods, *International Journal of Academic Research in Business and Social Sciences*, No. 15 (2), pp. 983-999.

[11] Dergaa, I., Ben Saad, H., Glenn, J.M., Amamou, B., Ben Aissa, M., Guelmami, N., Fekih-Romdhane, F., Chamari, K., 2024. From tools to threats: A reflection on the impact of artificial-intelligence chatbots on cognitive health, *Frontiers in Psychology*, No. 15.

[12] Drugas, M., 2022. Screenagers or" Screamagers"? current perspectives on generation alpha, *Psychological Thought*, No. 15 (1).

[13] Escotet, M.Á., 2024. The optimistic future of artificial intelligence in higher education, *Prospects*, No. 54, pp. 531-540.

[14] Fatima, N., Pitafi, F.K., Ashraf, M.I., 2020. Future of jobs and the challenge of artificial intelligence, *Global Strategic & Security Studies Review*, No. 5 (1), pp. 17-24.

[15] Fidan, A., 2022. *The effect of attitudes by generations X, Y, Z, alpha, beta, gamma and delta on children*, [in:] *Being a Child in a Global World*, Leeds: Emerald Publishing Limited, pp. 17-33.

[16] Fikri, Y., Rhalma, M., 2024. Artificial intelligence (AI) in early childhood education (ECE): Do effects and interactions matter?, *International Journal of Religion*, No. 5 (11), pp. 7536-7545.

[17] Fransson, E., Hjern, A., Bergström, M., 2018. What Can We Say Regarding Shared Parenting Arrangements for Swedish Children?, *Journal of Divorce and Remarriage*, No. 59 (5), pp. 349-358.

[18] Garaigordobil, M., 2023. Educational psychology: The key to prevention and child-adolescent mental health, *Psicothema*, No. 35 (4), pp. 327-339.

[19] Gerlich, M., 2025. AI tools in society: Impacts on cognitive offloading and the future of critical thinking, *Societies*, No. 15 (1).

[20] Halil, F.L.M., Aziz, N.A.A., Hassan, A., 2025. Navigating uncertainty: The role of VUCA and BANI frameworks in educational leadership strategies, *International Journal of Research and Innovation in Social Science*, No. 9 (4), pp. 5925-5936.

[21] Ilieva, S., Vitanova, V., 2019. Career development expectations of young people, *Knowledge International Journal*, No. 34 (6).

[22] Jaiswal, R., 2023. HR strategies for generation ALPHA: What would it look like, *International Journal of Creative Research Thoughts*, No. 11 (7), pp. c592-c598.

[23] Jedaman, P., Pitchaya-Auckarakhun, M., Kasorn, K., Kenaphoom, S., 2024. Sustainability Education Management Scenarios under Changes in the BANI Era, *Procedia of Multidisciplinary Research*, No. 2 (9).

[24] Jiang, Y., Li, X., Luo, H., Yin, S., Kaynak, O., 2022. Quo vadis artificial intelligence?, *Discover Artificial Intelligence*, No. 2 (1).

[25] Karatayev, D., Matyakubov, U., Mutaliyeva, L., Filimonau, V., Ermolaev, V.A., 2024. Generation Alpha and family business: A perspective article, *Journal of Family Business Management*, No. 14 (5), pp. 884-890.

[26] Kaynak, A., 2017. *X, Y, Z yetmez; biraz da alfa olsun. Yeni kuşak gümbür gümbür geliyor*, https://mediacat.com/x-y-z-yetmez-biraz-da-alfa-olsun/ (accessed: 24.11.2025).

[27] Kowalczyk-Kroenke, A., 2024. The generation of the future. Can and how can Generation Alpha change the labour market?, *Humanitas Zarządzanie*, No. 25 (3), pp. 29-39.

[28] Kurniawan, A.W., 2025. The meaning of "career success" for the Alpha Generation: A narrative study of young people entering the workforce in the hybrid era, *International Journal of Humanity Advance, Business & Sciences (IJHABS)*, No. 2 (3), pp. 336-341.

[29] Lane, M., Saint-Martin, A., 2021. The impact of Artificial Intelligence on the labour market: What do we know so far?, *OECD Social, Employment and Migration Working Papers*, No. 256, pp. 1-60.

[30] Lee K.-F., Qiufan Ch., 2022. *Sztuczna inteligencja 2041. Dziesięć wizji przyszłości*, Poznań: Media Rodzina.

[31] Lichtenthaler, U., 2020. Extremes of acceptance: employee attitudes toward artificial intelligence, *Journal of Business Strategy*, No. 41 (5), pp. 39-45.

[32] Luo, Y., Wongleedee, K., 2025. *Success Factors in Leadership for Generation Alpha*, [in:] *International Academic Multidisciplinary research conference ICBTSBEIJING 2025*, pp. 241-245.

[33] Mäkelä, E., Stephany, F., 2025. *Complement or substitute? How AI increases the demand for human skills*, https://doi.org/10.48550/arXiv.2412.19754 (accessed: 17.11.2025).

[34] Mannion, R., 2025. *BANI World: A Guide to Leadership Excellence*, London: Austin Macauley Publishers.

[35] Maslej, N., Fattorini, L., Perrault, R., Gil, Y., Parli, V., Kariuki, N., Oak, S., 2025. *Artificial intelligence index report 2025*, https://arxiv.org/abs/2504.07139 (accessed: 15.11.2025).

[36] McCrindle, M., Fell, A., 2020. *Understanding Generation Alpha*, https://generationalpha.com/wp-content/uploads/2020/02/Understanding-Generation-Alpha-McCrindle.pdf (accessed: 19.11.2025).

[37] McKinsey & Company, 2023. *The economic potential of generative AI: The next productivity frontier*, McKinsey Global Institute, https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/the-economic-potential-of-generative-ai-the-next-productivity-frontier (accessed: 22.11.2025).

[38] Nagy, Á., Kölcsey, A., 2017. Generation Alpha: Marketing or Science, *Acta Educationis Generalis*, No. 7 (1), pp. 107-115.

[39] Neamtu, D.M., Hapenciuc, C.V., Bejinaru, R., 2020. *Specializations of the future. Challenges and opportunities for generations y, z, and alpha*, https://strategica-conference.ro/wp-content/uploads/2022/04/63.pdf (accessed: 18.11.2025).

[40] Neufeind, M., O'Reilly, J., Ranft, F., 2018. *Work in the digital age. Challenges of the Fourth Industrial Revolution*, Lanham: Rowman & Littlefield International Ltd.

[41] OECD, 2019. *OECD learning framework 2030*, [in:] Bast, G., Carayannis, E.G., Campbell, D.F.J. (eds.), *The future of education and Labor*, Heidelberg: Springer International Publishing AG, pp. 23-35.

[42] OECD, 2023. *OECD Employment Outlook 2023: Artificial Intelligence and the Labour Market*, Paris: OECD Publishing.

[43] Oktay, D., Acaralp, M.C., 2025. *Leadership Approach for Generation Alpha and a Greener Future: The Health Professionals of Tomorrow*, [in:] *Generation Alpha and Next Generation Leadership for Greener Futures*, Hershey: IGI Global Scientific Publishing, pp. 63-86.

[44] Piepiora, P.A., 2024. *O zastosowaniu nowych technologii w wybranych metodach wychowania fizycznego dla uczniów z pokolenia Alfa*, [in:] *Medycyna, technologia, gospodarka. Problemy rozwoju i komercjalizacji nowoczesnych technologii i wyników badań naukowych*, Warszawa: Instytut Nauk Ekonomicznych Polskiej Akademii Nauk, pp. 99-106.

[45] Pierre, J., 2024. *What is Generation Alpha? Generation Alpha*, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5197159 (accessed: 23.11.2025).

[46] Poba-Nzaou, P., Galani, M., Uwizeyemungu, S., Ceric, A., 2021. The impacts of artificial intelligence (AI) on jobs: An industry perspective, *Strategic HR Review*, No. 20 (2), pp. 60-65.

[47] Prawitasari, G., 2018. *The influence of generations on career choice (Social Cognitive Career Theory Perspective)*, [in:] *1st ASEAN School Counselor Conference on Innovation and Creativity in Counseling*, Ikatan Bimbingan dan Konseling Sekolah.

[48] Rathore, D.B., 2023. Future of AI & Generation Alpha: Chatgpt Beyond Boundaries, *Eduzone: International Peer Reviewed/Refereed Academic Multidisciplinary Journal*, No. 12, pp. 63-68.

[49] Rausch, M., Brown, T.S., Adams, S.E., 2021. *Generation Alpha Students: Connecting, Educating, and Relating*, https://www.azsca.org/files/Generation_Alpha_Students.pdf (accessed: 16.11.2025).

[50] Rohilla, A., 2025. Impact of excessive AI tool usage on the cognitive abilities of undergraduate students: A mixed method study, *Asian Social Science and Arts Journal*, No. 4 (1), pp. 2131-2143.

[51] Rose, E.A., Thomas, M.R., 2024. *Generation Alpha and learning ecosystems: Skill competencies for the next generation*, [in:] *Preparing students for the future educational paradigm*, Hershey: IGI Global Scientific Publishing, pp. 19-46.

[52] Selwyn, N., 2019. *Should robots replace teachers? AI and the future of education*, https://research.monash.edu/en/publications/should-robots-replace-teachers-ai-and-the-future-of-education/ (accessed: 16.11.2025).

[53] Shiohira, K., 2021. *Understanding the impact of artificial intelligence on skills development*, UNESCO & UNESCO-UNEVOC International Centre for Technical and Vocational Education and Training, https://unesdoc.unesco.org/ark:/48223/pf0000375554 (accessed: 21.11.2025).

[54] Skorupka, A., 2024. Sztuczna inteligencja zabierze ludziom pracę?, *Management and Quality – Zarządzanie i Jakość*, No. 6 (1), pp. 129-130.

[55] Śledziewska K., Włoch R., 2020. *Gospodarka cyfrowa. Jak nowe technologie zmieniają świat*, Warszawa: Wydawnictwo Uniwersytetu Warszawskiego.

[56] Stone, P., Brooks, R., Brynjolfsson, E., Calo, R., Etzioni, O., Hager, G., Hirschberg, J., Kalyanakrishnan, S., Kamar, E., Kraus, S., Leyton-Brown, K., Parkes, D., Press, W., Saxenian, A., Shah, J., Tambe, M., Teller, A., 2022. *Artificial intelligence and life in 2030: The one hundred year study on artificial intelligence*, https://doi.org/10.48550/arXiv.2211.06318 (accessed: 16.11.2025).

[57] Strauss, W., Howe, N., 1997. *The Fourth Turning: An American Prophecy*, New York: Broadway Books.

[58] Su, J., Ng, D.T.K., Chu, S.K.W., 2023. Artificial Intelligence (AI) Literacy in Early Childhood Education: The Challenges and Opportunities, *Computers and Education: Artificial Intelligence*, No. 4.

[59] Su, Z., Togay, G., Côté, A.M., 2021. Artificial intelligence: a destructive and yet creative force in the skilled labour market, *Human Resource Development International*, No. 24 (3), pp. 341-352.

[60] Swargiary, K., 2024. *The Impact of Digital Learning Environments on Cognitive, Social, and Emotional Development in Generation Alpha Children: A Comparative Analysis*, https://ssrn.com/abstract=4904338 or http://dx.doi.org/10.2139/ssrn.4904338 (accessed: 19.11.2025).

[61] Tootell, H., Freeman, M., Freeman, A., 2014. *Generation alpha at the intersection of technology, play and motivation*, [in:] *47th Hawaii International Conference on System Sciences*, pp. 82-90.

[62] Uhrig, S., 2021. *Generation Alpha: Diapers, training wheels, and artificial intelligence*, https://digitalcommons.andrews.edu/cye-pubs/12 (accessed: 18.11.2025).

[63] Williamson, B., Eynon, R., 2020. Historical threads, missing links, and future directions in AI in education, *Learning, Media and Technology*, No. 45 (3), pp. 223-235.

[64] World Economic Forum, 2025. *The Future of Jobs Report 2025*, https://www.weforum.org/publications/the-future-of-jobs-report-2025/in-full/ (accessed: 20.11.2025).

[65] Wrede, G., 2025. Generation Alpha and future workforce: A theoretical perspective of leadership expectations, *Образование, научни изследвания и иновации*, No. 3 (2), pp. 73–84.

[66] Xu, Z., 2024. AI in education: Enhancing learning experiences and student outcomes, *Applied and Computational Engineering*, No. 51 (1), pp. 104-111.

[67] Yadrovskaia, M., Porksheyan, M., Petrova, A., Dudukalova, D., Bulygin, Y., 2023. *About the attitude towards artificial intelligence technologies*, [in:] *E3S Web of Conferences*, Vol. 376.

[68] Yurtseven, N. (ed.), 2020. *The teacher of generation Alpha*, Lausanne: Peter Lang.

[69] Zhu, Y.Q., Corbett, J.U., Chiu, Y.T., 2021. Understanding employees' responses to artificial intelligence, *Organizational Dynamics*, No. 50, pp. 1-10.