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Generation Z: AI Affinity and Adoption in Competitive German Organisations

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Abstract

Generation Z, having matured in an entirely digital environment, plays a central role in the adoption of AI within organisations. AI presents potential advantages such as enhanced productivity, process optimisation, and novel employment sectors, while simultaneously posing risks including job displacement, algorithmic biases, and ethical dilemmas. This paper examines the opportunities and challenges associated with this development. The study incorporates a literature review and two surveys conducted among LinkedIn users across diverse industries to assess the role of Generation Z in AI implementation and the relevance of AI-based systems for competitiveness. Data was collected over a seven-day period in December 2024. The first survey, comprising 202 participants (n = 202), focused on the role of Generation Z in the integration and use of AI in companies. The second survey, involving 345 respondents (n = 345), explored whether companies can remain competitive in the next three to five years without the use of AI-supported systems. A target function was developed to formalise business success in the context of AI integration, considering key factors such as technology acceptance, training intensity, and workplace design. The findings indicate that 58.42% of respondents consider Generation Z as central contributors to the integration of AI in organisations. A total of 69.57% of respondents indicated that they believe German companies can maintain their competitiveness without AI, whereas 30.43% regarded AI-supported systems as critical for maintaining competitiveness. While Generation Z exhibits a high level of technological affinity, older generations demonstrate a more cautious approach to adoption. The target function elucidates that business success is contingent upon a balance between technology acceptance and supportive measures such as training and transparent system design. The results indicate that Generation Z plays an important role in AI implementation within organisations. To address social and psychological concerns, such as job insecurity and cognitive strain, companies should adopt structured training, mentoring programmes, and change management measures to support responsible integration. The formal model implies that flexible workplace design and an organisational culture that support innovation contribute to successful AI implementation.

Keywords: Generation Z, Artificial Intelligence, Organisations, Digitalisation, Technological Affinity, Competitiveness, AI Implementation, Ethical Challenges, Workplace, Innovation

1. Introduction

Generation Z is characterised by a high level of technological proficiency that distinguishes it from previous generations and positions it as a pioneer in the integration of AI. Bhalla et al. [6] emphasise that this cohort, through its intuitive utilisation of digital tools, influences how digital processes are designed within organisations. Gentina and Chen [30] investigated how digital natives utilise social relationships and communication strategies on digital platforms. They found that valuable insights into this generation's behaviour in data- driven systems can be derived from such practices. Current research shows that Generation Z is regarded as technologically adept and has specific workplace requirements, including flexible working conditions and digital communication channels. These preferences shape their expectations for the use of AI in organisations and demonstrate that acceptance and motivation are strongly correlated with the work environment. Sharifiand Ahmadi [50] point out that, especially in post-pandemic scenarios, Generation Z plays a key role in the adoption of technologies due to its high level of digital adaptability. In recent years, AI has evolved into one of the most significant technologies of the 21st century, with applications ranging from automated decision- making processes in organisations and data-driven healthcare solutions to everyday services. In this context, the acceptance of technological innovations is a critical success factor for organisations. Studies on technol- ogy acceptance show that the introduction of new systems heavily depends on employees' perceptions [60]. The Unified Theory of Acceptance and Use of Technology (UTAUT) model elucidates that factors such as perceived usefulness and social influences can either facilitate or impede the acceptance of digital solutions [58]. In the context of digital transformation, it is imperative that all generations within the organisation are engaged to ensure a sustainable transition to data-driven work processes [15]. Despite its potential to enhance productivity and optimise workflows, AI also presents risks such as algorithmic bias, employment displacement due to automation, and data protection concerns [49, 36, 55]. In this context of technological change, Generation Z faces the challenge of using AI to create social and economic value while examining its ethical and social implications. Their technological proficiency, coupled with an awareness of social and environmental issues, places them at the forefront of shaping an AI-driven future [65, 23, 62]. This study analyses the distinctive role of Generation Z by examining both the opportunities arising from their digital competence and innovative mindset and the risks and challenges associated with the integration of AI, such as ethical conflicts and potential social disparities. Finally, it investigates how this generation can function as a catalyst for the responsible utilisation of AI and the framework conditions required to fully realise their potential.

1.1 Related work

The significance of Generation Z in the implementation and utilisation of AI-supported systems has been examined in various studies. Bhalla et al. [6] analysed how the values and competencies of this generation influence digital processes and workflows. Gentina and Chen [30] investigated the behaviour of digital natives on social platforms and derived insights for data-driven systems. A study by Fraunhofer IAO indicates that organisations view the involvement of Generation Z as an opportunity to enhance their technological innovation capabilities [28]. Recent research also emphasises that Generation Z, having matured in a fully digitalised environment, demonstrates a high level of technological comprehension. They are

characterised as highly adaptable and proactive in responding to technological changes [65]. This generation exhibits a particular affinity for AI-supported technologies and contributes valuable expertise to organisations [12]. To fully utilise the competencies of Generation Z, organisations must adopt novel working methodologies and introduce flexible work models [25].

Generation Z stands out for its utilisation of AI and its active involvement in its development. Their interaction with AI goes beyond application, as they contribute to innovation processes [24]. This level of participation indicates the importance this generation ascribes to the advancement and integration of AI technologies. The introduction of AI systems must also consider social and ethical challenges. Studies have demonstrated that a lack of transparency and algorithmic biases can undermine employees' trust in such systems [7].

Research emphasizes the necessity for ethical guidelines and clear communication regarding the use and functionality of these technologies [23]. A thorough assessment of the social implications of AI adoption can assist in preventing conflicts and improving acceptance [62]. Despite their digital proficiency, deficiencies remain in specific AI-related competencies. Studies indicate that members of Generation Z often possess limited awareness of the ethical and practical challenges associated with AI implementation [13]. While they are confident users of digital tools, issues such as algorithmic bias, data security, and compliance are frequently underestimated [3].

Existing studies often focus on isolated aspects, such as general technological affinity or the use of social media. A comprehensive investigation of the opportunities and challenges linked to the professional integration of AI-supported systems is still lacking.

1.2 Contribution of the study

This study contributes to current research by providing an analysis of the role of Generation Z as driver of AI integration in companies. In comparison to previous studies, it expands the scope to encompass multiple dimensions. Firstly, the study examines the technological affinity of Generation Z as well as their perspectives on ethical issues such as data protection, algorithmic bias, and job security [23]. It analyses the measures required to ensure the successful integration of AI into corporate processes, with a particular focus on training and professional development strategies. These are considered central factors for technology acceptance in the formal model. Thirdly, it explores how organisations can enhance the acceptance of AI-supported systems through targeted mentoring programmes and change management strategies [40]. The study complements this empirical perspective with a target function that formalises business success in the context of Generation Z by including variables such as training intensity, workplace design, and corporate culture. The work extends beyond previous studies by combining qualitative and quantitative data to capture both Generation Z's perceptions and the corporate viewpoint on the use of AI. Particular attention is given to potential social divides that may arise due to unequal resource distribution and varying digital competencies. This formulation in the target function allows potential conflicts to be quantitatively considered and integrated into the model.

The study indicates that a comprehensive and socially responsible approach is necessary to ensure that the potential of AI integration is fully realised while mitigating social tensions [62, 42]. The identification of these factors provides insights for organisations and decision-makers

to shape the technological transformation in a sustainable and forward-looking manner.

1.3 Artificial intelligence

AI is an interdisciplinary subfield of computer science concerned with the design, implementation, and application of systems capable of performing tasks that typically require human cognitive abilities. These tasks include understanding natural language, processing and analysing data, making complex decisions, and recognising patterns in visual or auditory information [49, 36]. The term ”Artificial Intelligence” was first introduced in 1956 at the Dartmouth Conference by John McCarthy, one of the pioneers of modern computer science [41]. The scope of AI has expanded with the development of generative AI and large language and action models. Contemporary systems such as GPT-4 and specialised large action models extend beyond text generation and facilitate real-time decision-making processes [27]. These systems perform simple tasks automatically and support complex processes such as project management and resource planning. Their utilisation raises ethical and societal concerns, particularly regarding algorithmic biases, transparency, and data protection [63].

Research emphasises the necessity for ethical guidelines to ensure fairness, transparency, and comprehensibility in AI systems. Early AI systems relied on rule-based approaches with predefined logic structures, but the field has evolved considerably over recent decades. In addition to machine learning (ML) and deep learning (DL), multi-agent systems (MAS) have become increasingly significant. These systems consist of multiple autonomous agents that interact, cooperate, or compete within distributed environments to address complex tasks [64, 39]. Reinforcement learning-based systems exemplify this by enabling agents to learn through repeated interactions with their environment [52, 35].

Studies also demonstrate that multi-agent environments can exhibit emergent behaviours that were not explicitly programmed, as observed in simulations of cooperative and competitive game scenarios [4]. These developments indicate that modern AI systems can independently develop strategies, challenging human understanding and offering novel approaches to problem-solving. AI systems are predicated on algorithms specifically designed to analyse data and draw conclusions. A fundamental methodology within AI is machine learning (ML), which enables systems to learn from data and experiences without explicit programming for each task [49].

An advanced form of machine learning is deep learning (DL), which utilises deep neural networks to identify complex patterns in large datasets [36, 66]. In addition to machine learning, other domains of AI include natural language processing (NLP), which facilitates systems to comprehend and generate spoken and written language. Another crucial field is computer vision, which processes and interprets visual information from images and videos [1]. Expert systems are noteworthy, as they make decisions based on predefined rules and knowledge databases [22].

These various approaches and methodologies collectively enhance the functionality and diversity of con- temporary AI applications. The significance of AI extends across virtually all domains of life and the economy. AI possesses the potential to automate processes, increase efficiency, and drive innovation [49]. In healthcare, for instance, AI is utilised to detect diseases at an early stage, develop personalised treatment plans, and support drug discovery [59]. In business, AI systems assist in analysing large datasets, predicting market trends, and

facilitating informed decision-making [8].

AI is also encountered in quotidian life, such as in virtual assistants like Alexa or Siri, as well as through personalised recommendations on streaming platforms and online retail environments [36]. AI plays a central role in addressing global challenges. In the field of climate protection, AI is employed to enhance energy efficiency, integrate renewable energy more effectively, and analyse complex environmental data [62]. In agriculture, AI supports the optimisation of resource use and increases crop yields [37]. The pervasive presence of AI technologies signifies that Generation Z and subsequent generations are developing in an environment where advanced technological applications are an integral component of daily life. While preceding genera- tions experienced a conscious transition to digitalisation, younger cohorts perceive technologies such as AI as an inherent aspect of quotidian existence and are less inclined to question their presence.

This development shapes both their expectations for innovation and their acceptance of new technological systems, influencing their attitudes towards data-driven solutions. In organisations, AI is increasingly utilised to automate complex processes and support informed decision-making. Notably, the ”Human-in-the-Loop” (HITL) approach maintains human involvement in critical decision-making processes, ensuring a meaningful balance between automated analysis and human oversight [32]. This hybrid approach enhances the accuracy of predictions and mitigates potential errors caused by algorithmic bias [19].

Enterprise resource planning (ERP) and customer relationship management (CRM) systems are now augmented with AI functionalities to optimise both operational and strategic processes. AI-supported ERP systems, for instance, enable predictive analysis of production data and automated resource planning [8]. In CRM systems, AI supports the personalisation of customer interactions by analysing customer behaviour and generating tailored recommendations [20].

This integration enhances efficiency, strengthens customer retention, and fosters data-driven decision- making [34]. The utilisation of AI in organisations requires both technical adjustments and organisational changes. Training programmes and change management processes are important to ensure that employees comprehend the new systems and develop trust in automated processes [51]. Concurrently, organisations must implement guidelines to ensure that ethical standards are maintained and data protection requirements are met.

Despite its wide range of applications, the utilisation of AI in organisations presents challenges that are technical, ethical, and economic in nature. One of the most significant concerns is algorithmic bias, which can lead to discriminatory decisions. As AI models are often trained on historical data, there is a risk that existing inequalities and biases may be reproduced or even reinforced in the results [19]. This can negatively affect recruitment decisions, credit evaluations, or automated application procedures, potentially damaging an organisation’s reputation. Data protection remains one of the key ethical challenges. The European AI Act aims to establish a binding legal framework to ensure that the use of AI systems adheres to the principles of transparency, fairness, and data minimisation [14].

Organisations must ensure that personal data is collected and processed only to the extent necessary and that users are informed about its use. Non-compliance with these regulations can lead to legal consequences and a loss of customer trust in the brand. Another critical issue is

the automation of work processes and its impact on the labour market. While AI can facilitate efficiency gains and promote innovation, it can also replace traditional jobs. Sectors such as logistics, customer service, and accounting are particularly affected [8]. This necessitates comprehensive change management measures to involve employees at an early stage and ensure that the transition to automated processes is socially responsible. Organisations are also tasked with preparing their employees for new roles through targeted training programmes and promoting competencies in data analysis and AI application [51].

In the long term, organisations that balance automation with social responsibility are expected to enhance efficiency and maintain their competitiveness. A responsible use of AI requires a clear strategic approach that considers both technological and regulatory requirements while placing humans at the centre of decision- making (”Human-in-the-Loop”) [32]. The advancement of AI has led to the emergence of generative AI (GenAI) and large language models (LLMs), which are capable of producing human-like texts and handling complex tasks [31]. These technologies are transforming various industries by creating personalised content, handling customer queries, and supporting creative processes. The next generation of these models aims to improve accuracy, reduce biases, and address ethical challenges [26].

In parallel, large action models are gaining significance. They extend the capabilities of LLMs by under- standing and generating language as well as performing actions based on input. This enables applications such as automated scheduling, personalised recommendations, and device control through natural language commands. A notable trend is the shift of AI functionalities to mobile devices. Advances in hardware and more efficient models now enable powerful AI applications to run directly on smartphones and tablets. This development reduces latency, enhances data privacy, and broadens the acceptance of AI technologies in everyday life [47]. Generation Z and subsequent generations, such as Generation Alpha, are developing in an environment where advanced technological applications are pervasive. For these cohorts, technologies such as generative AI and AI-supported mobile applications are considered normative. This familiarity enhances their acceptance of novel technologies and shapes their expectations regarding personalisation, interactivity, and seamless AI integration into their daily lives.

Organisations and developers must meet these expectations by creating AI solutions that are intuitive, ethically responsible, and tailored to the needs of younger generations. This necessitates a comprehensive understanding of technological trends as well as the social and cultural dynamics that influence the utilisation and acceptance of AI.

2. Methodology

The study employs a mixed-methods approach, combining quantitative data collected through two online surveys with contextual literature analyses. The data was gathered via an online survey distributed on the LinkedIn platform to reach individuals from various industries and fields who are actively engaged with the topic of AI [45, 54]. The survey addressed two key topics:

1. The role of Generation Z in the integration and use of AI in companies.
2. The assessment of whether companies can remain competitive in the next three to five years without the use of AI-supported systems.

A total of 202 individuals (n=202) participated in the first question of the survey, and 345 individuals (n=345) responded to the second question. The survey was conducted over a period of seven days in December 2024. In addition to the survey, relevant scientific publications and recent reports were reviewed to provide contextual information and comparative data. Descriptive and inferential statistical methods were employed for data analysis. A target function was developed to model business success in the context of AI integration. This function formalises key influencing factors, such as technology acceptance, training intensity, and workplace design, complementing the empirical analysis with a structured quantitative assessment. The combination of scientific literature analysis, empirical survey data, and formal modelling enhances the validity of the findings and enables a more comprehensive examination of the research questions [61]. Digital surveys present specific challenges, particularly concerning sample representativeness and potential bias effects. Studies indicate that online surveys often overrepresent technology-oriented individuals, while other groups may be underrepresented [5]. Measures such as targeted platform selection and a diversified sampling strategy can effectively mitigate these biases [21]. The importance of transparent questionnaires is emphasised to reduce bias resulting from socially desirable responses [16].
In this study, potential sample bias was accounted for, as the data collection was conducted via LinkedIn, potentially leading to an overrepresentation of technology-affine participants. The formal modelling of influencing factors adds further value by providing a structured representation of empirical findings and quantifying their interrelationships. Future studies are recommended to validate the findings with broader samples across different platforms and refine the model with additional data to enhance the generalisability of the results.

3. Research Findings

3.1 Use of AI services

In 2023, the German Federal Statistical Office conducted a comprehensive survey on the active use of AI services in Germany [54]. The survey included 1,000 participants aged 18 to 60 years. To analyse differences between age groups, the participants were divided into three categories:

1. Generation Z (18 to 27 years),
2. Generation Y (28 to 42 years),
3. Generation X (43 to 60 years).

The results show disparities in usage behaviour. As illustrated in Figure 1, 41% of Generation Z regularly utilise AI services, compared to 29% of Generation Y and only 13% of Generation X.

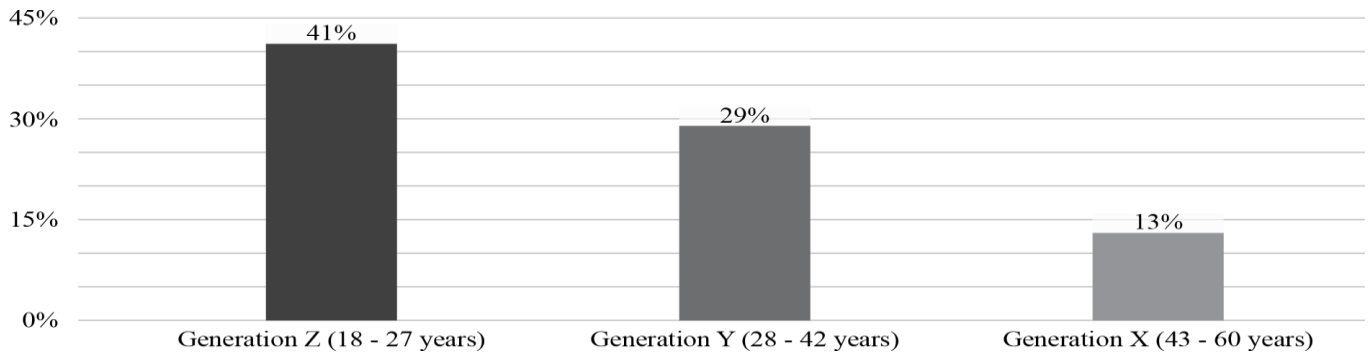

Fig. 1: Use of AI Services in Germany by Generation [54]

Research on the utilisation of digital tools indicates that generational differences are often shaped by varying levels of technological experience and socialisation [44]. While younger generations, such as Generation Z, develop in an environment where digital technologies are ubiquitous, older generations had to acquire proficiency in these tools later in their professional lives [33].

Studies also emphasise that younger users' higher acceptance of technology is frequently associated with their expectation that digital systems should be intuitive and operate efficiently [18]. In addition to this survey, Statista GmbH conducted a study in 2021 on the technological affinity of different generations [53].

In this study, 54.8% of respondents from Generation Z reported that they enjoy experimenting with new technical devices. In comparison, 43.5% of Generation Y and only 32.5% of Generation X shared this sentiment. A similar trend is observed regarding technological self-confidence: 44.7% of Generation Z described themselves as tech-savvy and confident in handling new technologies, compared to 39.3% of Generation Y and 30.6% of Generation X.

These differences show that, due to their digital upbringing, Generation Z demonstrates a higher acceptance of and curiosity for AI-supported systems [45].

3.2 Technological affinity and workplace expectations

In 2021, Statista GmbH conducted a survey examining the technological affinity and technical skills of different generations [53]. The results indicate that 54.8% of respondents from Generation Z reported enjoying the experimentation with new technical devices.

Among Generation Y, this figure was 43.5%, while only 32.5% of Generation X reported the same. Regarding technological self-confidence, Generation Z also recorded the highest value at 44.7%. In comparison, the self-confidence rate was 39.3% in Generation Y and 30.6% in Generation X. Figure 2 illustrates these differences.

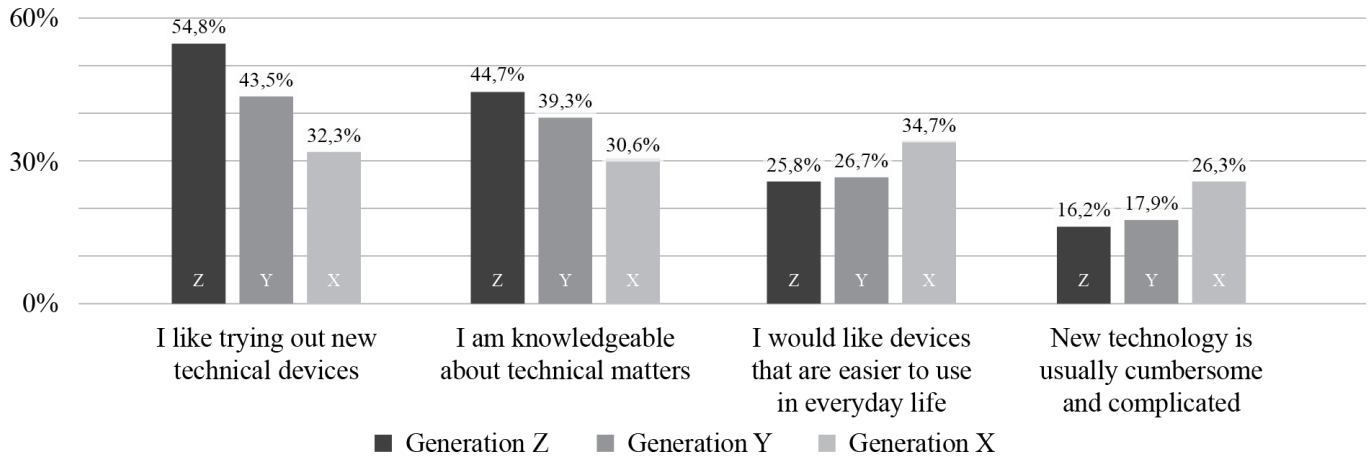

Fig. 2: Generations in Germany by Agreement on Statements about Technological Affinity and Technical Skills in 2021 [53]

An additional aspect of the survey addressed perceptions of digitalisation in the workplace. As shown in Figure 3, 73% of respondents aged 16 to 29 concurred that the workplace will increasingly be influenced by digitalisation and modern technologies. Among the 30 to 44 age group, the agreement level was 59%, while 55% of respondents over the age of 45 shared this perspective.

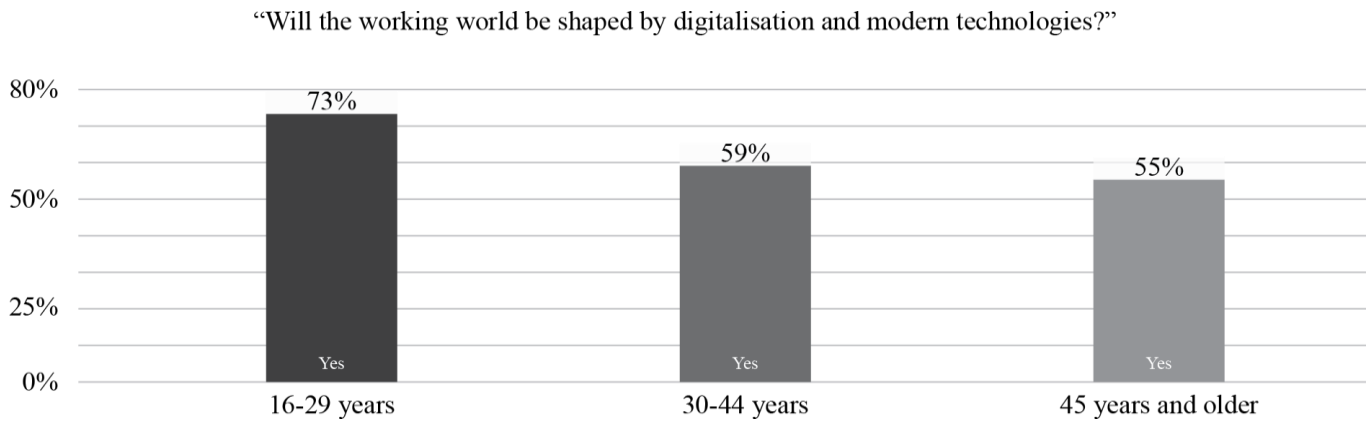

Fig. 3: Perception of Digitalisation in the Workplace by Age Group [45]

Participants were also queried about the role of employers in providing access to new technologies. 29% of Generation Z expressed the belief that employers must provide modern technologies. Notably, this figure was only marginally lower for Baby Boomers at 28%.

In another study conducted by Hochschule Koblenz, 47.3% of respondents indicated that AI holds extremely high relevance for their company. An additional 37.4% rated the impact of AI as very significant, resulting in nearly 85% of participants considering AI to be highly or extremely important for competitiveness [38]. When asked whether AI would become a critical factor for competitiveness in their industry over the next 10 years, the responses were equally revealing. Participants rated their agreement on a scale from 1 (strongly disagree) to 5 (strongly agree). A total of 66.4% responded with 5 (strong agreement), and 21.4% selected 4 (high agreement). Only 11% believed that AI would have little to no impact on the competitiveness of their industry in the next decade [38].

3.3 Role of generation Z in the integration and use of AI

A study published in Frontiers in Psychology examines the perspectives of Generation Z on these topics and emphasises that transparency and accountability are key factors for the acceptance of AI systems [46]. Generation Z is particularly concerned about opaque algorithmic decision-making processes and potential discrimination by AI-based systems. Concerns related to the protection of personal data and overall data security further underscore the need for robust security measures and clear data protection guidelines. The use of AI in recruitment processes is a focal point for Generation Z. A study by Paradigm Academic Press explores the perceptions of this generation regarding AI-supported selection procedures, examining both opportunities and risks [56].

While AI can increase the efficiency of recruitment processes, many Generation Z applicants express concerns about potential biases and the impersonal nature of automated application processes. These observations underscore the importance of designing AI systems that promote diversity and ensure transparency and fairness in recruitment for all stakeholders. The findings from our empirical survey indicate that 58.42% of respondents believe that Generation Z plays a central role in the integration and use of AI in companies.

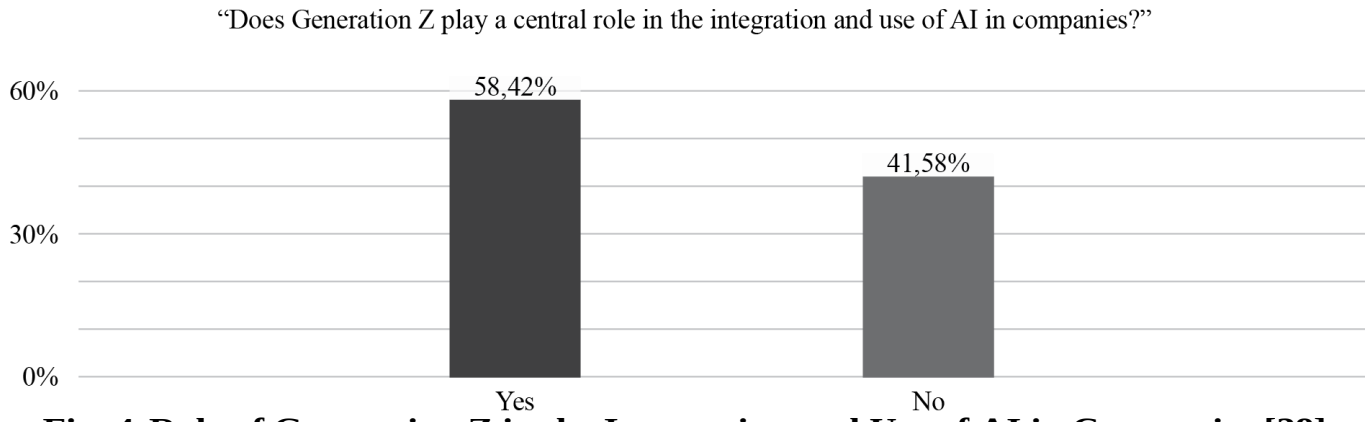

Fig. 4 Role of Generation Z in the Integration and Use of AI in Companies [38]

Another result of the survey addresses the assessment of whether companies will remain competitive in the next three to five years without the use of AI-supported systems. A total of 69.57% of respondents indicated that they believe companies can maintain their competitiveness without AI. Only 30.43% considered AI-supported systems to be a decisive factor for maintaining competitiveness. Figure 5 illustrates these assessments.

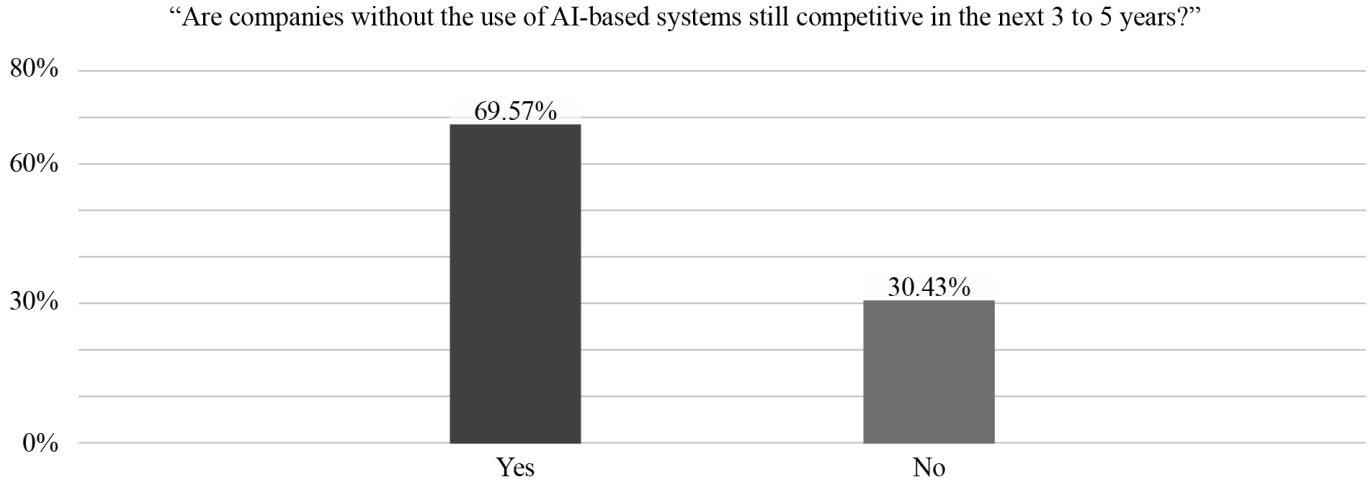

Fig. 5: Assessment of Company Competitiveness without AI in the Next Three to Five Years [38]

These results show the role attributed to Generation Z in the digitalisation and adoption of AI in companies. At the same time, they show that the use of AI is perceived as a key factor for the future viability of companies. Several recent studies complement the findings on the role of Generation Z and the importance of AI for corporate competitiveness.

A study by Business Insider shows that Generation Z uses AI in the workplace less frequently than Millennials, contradicting the assumption that Generation Z, as "digital natives," is particularly open to using AI in the workplace [11].

The Fraunhofer Institute for Industrial Engineering (IAO) reports that 75% of surveyed companies are actively addressing questions related to AI implementation, and 16% are already using practical AI applications. The main motivation for these companies is to increase productivity [28].

A study by Microsoft further discusses that, on average, companies achieve a return of 3.5 dollars for every dollar invested in AI. 52% of companies cite a lack of qualified employees as a barrier to the implementation and scaling of AI [42]. These findings illustrate that, alongside high expectations for productivity, challenges also exist in securing qualified personnel, and the use of AI depends on both the younger generation's acceptance of technology and company-wide competencies. Generation Z demonstrates a strong willingness to use AI-supported systems in their work environment. A survey conducted by TalentLMS revealed that 88% of Gen Z employees use AI to handle work tasks more efficiently and to reduce work-related stress [57]. Notably, 46% of respondents indicated that they prefer consulting AI-based tools for work-related questions rather than colleagues or supervisors. This trend could impact traditional interactions and mentoring relationships within companies. Despite the high usage rate, Generation Z also expresses concerns about the integration of AI into daily work routines. A study by Newsweek reports that Gen Z employees are concerned about potential surveillance by AI systems and its implications for data privacy [43].

A survey by General Assembly further shows that 62% of Gen Z respondents fear potential job losses due to AI technologies [2]. This scepticism underscores the need for companies to strengthen transparency and data protection policies to foster broader acceptance of AI solutions. Moreover, the TalentLMS survey emphasises that 66% of Gen Z employees view AI as beneficial for their skill development, particularly in improving their technical abilities [57]. At the same time, 39% of respondents expressed concern that the increased use of AI could reduce personal interactions with colleagues, potentially hindering the development of interpersonal skills. These findings demonstrate that, while Generation Z is open to the use of AI, they also expect a balance between efficiency gains and the preservation of social dynamics in the workplace.

3.4 Formalisation of AI Implementation Success

The analysis demonstrates that multiple variables influence the success of organisations in the context of AI integration and can serve as a foundation for deriving a formal success model that describes organisations' efforts to meet the needs of Generation Z and subsequent cohorts. Technology acceptance (α) represents the propensity of the workforce to utilise AI systems productively and constitutes a key component. Training intensity (β) reflects the scope and quality of professional development initiatives that ensure employees acquire the requisite competencies. System transparency (γ) enhances trust through comprehensible decision-making processes and mitigates uncertainties. Workplace design (δ) refers to the impact of automation on role distribution and job satisfaction, with flexibility and creative tasks enhancing the motivation of Generation Z. Corporate culture (ϵ) influences cohesion and reflects ethical and social guide- lines. Additional factors influence business success. Data security and privacy (ζ) are important for building employee trust and ensuring compliance with legal regulations. An innovation-oriented culture (η) encourages creative uses of AI and motivates employees to adopt new working methods and digital tools. Change management competencies (θ) within the leadership support a smooth implementation process and help to minimise resistance. The technical infrastructure (ι) is also critical, as a modern and scalable IT environment facilitates the efficient utilisation of AI. Finally, intergenerational collaboration (κ) influences the success of AI integration, as the exchange between generations strengthens

knowledge transfer and promotes the acceptance of new processes. Based on these factors, the organisational or corporate system success of AI implementation SAI can be represented as a target function:

$$\max_{x} S_{AI} = f(\alpha, \beta, \gamma, \delta, \epsilon, \zeta, \eta, \theta, \iota, \kappa) \quad (1)$$

with the weighting of influencing factors:

$$f(\alpha, \beta, \gamma, \delta, \epsilon, \zeta, \eta, \theta, \iota, \kappa) = w_\alpha \cdot \alpha + w_\beta \cdot \beta + w_\gamma \cdot \gamma + w_\delta \cdot \delta + w_\epsilon \cdot \epsilon + w_\zeta \cdot \zeta + w_\eta \cdot \eta + w_\theta \cdot \theta + w_\iota \cdot \iota + w_\kappa \cdot \kappa \quad (2)$$

The weighting demonstrates that diverse influencing factors can be considered and weighted individually. Technology acceptance (α) delineates the workforce's readiness to utilise AI systems productively and constitutes a central component that significantly influences the success of the implementation. Training intensity (β) quantifies the scope and quality of professional development measures to ensure that employees acquire the requisite competencies. System transparency (γ) enhances employee trust through comprehensible decision-making processes and mitigates uncertainty.

Workplace design (δ) elucidates the impact of automation on role distribution and job satisfaction, emphasising the importance of flexible and creative tasks to foster motivation. Data security (ζ) is important, as generations such as Generation Z and Alpha attribute great importance to the protection of their data. A robust innovation culture (η) supports employees' motivation to actively participate in digital transformation. Change management competencies (θ) of the leadership promote trust and facilitate the introduction of novel systems. The technical infrastructure (ι) ensures that AI systems can be utilised reliably and without delays. Finally, intergenerational collaboration (κ) enables knowledge transfer and supports the establishment of a coherent corporate culture.

The target function is subject to constraints to account for resources and standards. Technology acceptance (α) must at minimum reach the threshold value αmin to ensure sufficient utilisation. Training intensity (β) must not exceed the available budget Rtrain. System transparency (γ) must meet the critical value γcrit to avoid uncertainties. Workplace design (δ) must remain within the range [δmin, δmax] to ensure flexibility and efficiency. Data security (ζ) must comply with legal requirements, and the innovation culture (η) should offer a minimum level of creative freedom. Corporate culture (ϵ) must uphold ethical standards, while intergenerational collaboration (κ) should be actively promoted.

4. Discussion

The results of the study indicate that Generation Z exerts a significant influence on the integration and utilisation of AI-supported systems in organisations. This is evident from the finding that 58.42% of respondents perceive this generation as having a central role in the implementation process. These findings are corroborated by additional research. A survey conducted by Statista GmbH in 2021 revealed that 73% of respondents aged 16 to 29 believe that the working environment is increasingly shaped by digitalisation and modern technologies

[53]. In comparison, this perspective is shared by 59% of respondents aged 30 to 44 and 55% of those aged over 45. These figures demonstrate that younger generations have different expectations of their work environment compared to older generations. Private utilisation of AI services also exhibits a high level of technological affinity: 41% of Generation Z reported using AI services regularly, compared to 29% of Generation Y and only 13% of Generation X. These figures substantiate the perception of a generation that is receptive to technological innovations in both private and professional contexts and readily adopts new solutions [45].

A critical aspect in this context is the question of organisations' competitiveness without the use of AI. In the survey, 69.57% of respondents indicated that they believe German companies can maintain their competitiveness without AI-supported systems, whereas 30.43% regarded AI as critical for maintaining competitiveness. This assessment contrasts with a study from Hochschule Koblenz, where almost 85% of participants stated that AI holds high to very high relevance for their organisations [38].

The formalised target function demonstrates that the success of AI integration depends on technology acceptance (α) as well as supportive framework conditions such as training measures (β) and system transparency (γ). This aligns with empirical findings indicating that training and comprehensible decision- making processes are perceived as essential for acceptance. Workplace design (δ) and corporate culture (ϵ) are additional factors that contribute to increased satisfaction and acceptance, supported by flexible work models and ethical guidelines. Despite these positive developments, challenges remain. The introduction of AI systems may elicit concerns, particularly regarding job security and the potential loss of traditional roles [29].

Studies indicate that employees frequently exhibit an ambivalent attitude towards AI solutions: while efficiency gains are appreciated, concerns persist regarding a lack of control and the displacement of human decision-making processes [9]. Research also emphasises that transparency and comprehensible decision- making processes are crucial for fostering trust in AI systems and mitigating apprehensions [19].

Potential biases must be considered when interpreting these results. As the survey was conducted exclusively on LinkedIn, a bias favouring technology-oriented participants may have occurred. Professionals from traditional industries or occupations where AI is less prevalent may be underrepresented. A broader sample encompassing additional platforms and demographic groups would enhance the generalisability of the findings. Overall, the results demonstrate that AI is increasingly perceived as a critical factor for the future viability of organisations.

The target function implies that a balance between technological and social factors is necessary to ensure long-term success. A key challenge remains how this technology can be implemented in alignment with the needs of employees, particularly those of Generation Z, while taking ethical and social considerations into account.

4.1 Implications of the findings

The analysis of the literature and the collected data indicates that AI plays an increasingly central role in organisations. To sensitise employees to the utilisation of AI and enhance their trust in these technologies, training programmes for future professionals should emphasise AI-supported systems [48]. It is imperative to familiarise existing employees, particularly those

from older generations, with AI applications through targeted training and professional development. This aligns with the significance of training intensity (β) within the model. Only targeted measures can ensure that diverse generations accept AI as an integral component of their daily work and utilise it effectively. The introduction of new systems without involving the workforce carries the risk that employees may reject these technologies, resulting in inefficient utilisation of the systems [65]. The employment of experienced staff as mentors can be beneficial in this context, as they can enhance both trust and technical expertise within the workforce. They are also capable of addressing queries promptly and resolving issues expeditiously, thereby increasing acceptance. The implementation of AI systems offers Generation Z, in comparison to older generations, numerous opportunities. Their high level of technology acceptance (α) and receptiveness to innovation facilitate this generation's adaptation to new technologies [28]. Organisations are increasingly creating positions in AI development, data analysis, and automation, which are particularly appealing to tech-savvy Generation Z employees. A positive effect of AI integration is the potential enhancement of work-life balance, contributing to workplace design (δ). Automated processes conserve time and provide greater flexibility, enabling a better equilibrium between work and personal life [42]. Emphasising flexible work models can further promote the acceptance of new systems. The increased utilisation of AI also carries the risk of reducing personal interactions in the workplace [10]. Given that Generation Z values authenticity and personal relationships, this could pose a challenge. The implementation of AI could exacerbate existing inequalities in the labour market. Organisations with access to advanced AI could gain a competitive advantage, potentially disadvantaging smaller enterprises. Another potential burden is the pressure to continuously acquire new skills and maintain pace with AI- supported systems [40]. This may lead to increased stress levels and burnout among young professionals. The constant availability enabled by AI-supported communication systems can make it difficult to delineate work and private life, potentially impacting mental health in the long term. It becomes evident that successful AI integration relies on both technological factors and cultural and social frameworks. A comprehensive strategy should therefore encompass training, transparent system design, flexible working conditions, and an open organisational culture to address the needs of Generation Z and subsequent cohorts.

4.2 Limitations of the study and implications for future research

This study elucidates the central role of Generation Z as a catalyst for the integration and utilisation of AI- supported systems in organisations. Several limitations warrant consideration when interpreting the results. A primary constraint is the sample, which was exclusively obtained via LinkedIn. Research indicates that platforms such as LinkedIn tend to overrepresent technology-oriented and digitally proficient individuals, while employees from traditional industries and less technologically adept groups may be underrepresented [16]. Future studies should therefore encompass broader samples and incorporate diverse platforms as well as varied demographic groups to enhance the generalisability of the findings. This study relied on self-reported data from respondents, which can potentially introduce biases due to social desirability and subjective perceptions [16]. Supplementary studies that analyse objective metrics on the actual utilisation of AI systems and their impacts could provide a more comprehensive perspective and facilitate a nuanced assessment. For future research,

several pertinent questions arise that necessitate a holistic view of the impacts of AI in organisations. It is imperative to examine how the implementation of AI-supported systems influences interpersonal interactions within organisations and what effects this has on organisational culture [17]. The potential psychological burden on employees arising from the pressure to maintain pace with technological developments is a crucial aspect for future investigations [9]. The impact of AI on traditional occupations and the identification of occupational fields particularly affected by automation processes also require detailed analysis [29]. This should consider both potential job losses and the emergence of new roles and qualification requirements. It is equally important to explore how organisations can implement measures to ensure that the transition to AI-supported work environments is socially acceptable and ethically responsible. A clear strategic orientation, accompanied by training programmes and communication measures, can help mitigate uncertainty and strengthen the workforce's trust in new technologies [19].

Overall, the findings of this study indicate the need for interdisciplinary research approaches to comprehensively capture the opportunities and challenges of AI integration. Only through continuous scientific support can companies develop strategies that strengthen technological competitiveness while placing the needs of their workforce at the centre.

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