Exploring Factors in Shaping SME Policy: Educational Experiences with Generative AI

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Executive Summary

With the substantial releases of GenAI tools of considerable quality, often free or very affordable, businesses were quick to realise that the tools are not exclusively useful in a personal setting. Focusing on SMEs, this paper seeks to inform about approach to AI in relation to age groups, departments, sectors and educational level. After grounding the findings in the Integrated AI Acceptance-Avoidance (IAAAM) model (Cao et al., 2021) and adapted Generative Artificial Intelligence Technology Adoption Model for Entrepreneurs (Gupta, 2024), recommendations were drafted concerning potential effects of the findings on Educational Experiences with Generative AI in SMEs. One of our recommendations is to tailor trainings on generative AI to the workflow of SME employees, addressing industry specific needs.

1 Introduction

Since the substantial releases of Generative Artificial Intelligence (GenAI) tools capable of generating output of considerable quality, often for free or very affordable, companies were quick to realise that the tools are not exclusively useful in a personal setting. Generative AI has come to play a leading role in digital transformation of enterprises, where it has been responsible for a profound transformation in key business and production operations (Peretz-Andersson et al., 2024). However, even though there is an enormous growth of generative AI technologies, knowledge of its implementations by small and medium-sized enterprises (SMEs) still is under-explored (Peretz-Andersson et al., 2024). A recent report points out that AI and generative AI is being adopted across a multitude of functions in businesses globally in 2023 (Statista, 2024). While this observation offers a global perspective, it risks over-generalization when applied to SMEs.

A critical issue faced by these kinds of companies is the inefficient allocation of resources during AI implementation. This inefficiency stems from varying levels of employee willingness to learn and engage with new technologies. Many SMEs fail to recognize these differences in knowledge and readiness among their workforce, leading to wasted resources and missed opportunities for effective generative artificial intelligence integration.

To study adoption of Gen AI in SMEs, it is useful to study the IAAAM model (Cao et al., 2021) and adapted Generative Artificial Intelligence Technology Adoption Model for Entrepreneurs (Gupta, 2024), to identify factors posed by existing literature. From the important variables to adoption in AI, a common factor can be deduced: Willingness to learn. According to the models, other variables influence this more fundamental variable. The models variables showed similarities to predictors for willingness to learn in a work setting (Kyndt et al., 2014). In both models and the separate study into willingness to learn, the importance of environmental factors is addressed, along with expected gains and initial mental state. This observation lays the groundwork for investigating related factors that could be consistently deviating in SMEs, impacting AI Adoption level. Uncovering where the differences in willingness reside, and identifying employees' perspectives could therefore offer valuable insights for SME policy regarding educational experiences.

Since differences in the aforementioned factors can be present consistently across functions in departments, the SMEs departments were analysed. Functions themselves require different educational levels, so this factor was researched too. Across different sectors, requirements of expertise change, presenting another factor to be considered. The last variable covered by our research was age, which historically has been responsible for differing approaches. Along with emerging trends in accounts from employees active in SMEs from the media sector, the insights of the analyses result in general policy recommendations for SMEs, regarding educational experiences with Generative AI.

2 Approaches and Results

Five research studies were carried out to investigate various elements that can influence the motivation to learn about such technologies in order to address the problem of wasteful resource use in the application of Gen AI in SMEs. The needs of the stakeholders were taken into consideration when conducting the research papers and the current policy paper. To provide the best solution for the client's business issues, a preliminary stakeholder analysis was conducted, which can be found in the appendix of this document.

Both qualitative and quantitative research methodologies were used in the studies. Following the distribution of a survey via "Prolific.com" by which 190 replies have been received, a number of statistical techniques were used. This approach helped to determine whether a certain aspect was influencing respondents' inclination to learn about AI technologies. Additionally, a thematic analysis of the interviews was conducted to find trends and perspectives on certain topics related to the usage of Gen AI in the creative field of Marketing.

The articles examined differences in departments, educational levels, sectors, as well as generational differences in the adoption of Gen AI technologies. These ambiguities are expected to yield important insights. The analysis highlighted several distinct patterns based on employee demographics and organizational characteristics. All of this will help with guiding policy recommendations tailored to different segments within SMEs.

2.1 AI Perception in Marketing and Media SMEs

This research investigates the perspectives of employees in Marketing and Media within SMEs regarding generative AI. The findings reveal a combination of perceived opportunities and concerns. Even though employees still show some concern about its possible effects on job security, younger workers generally see generative AI as a tool for efficiency and productivity. Older employees, on the other hand, show more cautious optimism, acknowledging the advantages of AI but keep being sceptical of its drawbacks. While both sides acknowledge the potential of AI tools to boost creativity and productivity, they are uneasy about the need of organised training and assistance to allay concerns about job displacement. According to the survey, SMEs should fund extensive training initiatives to provide staff members the know-how and self-assurance they need, ensuring that generative AI is seen as a development potential rather than a danger to jobs. It is advised that further study be done to examine AI's function in many creative sectors and make sure that its integration enhances rather than interferes with current processes. All key insights from this research paper are summarized in Table 1 (Vicheva, 2024).

Table 1: Key Insights on Generative AI from Younger and Older Participants

Aspect	**Summary**
Generative AI Familiarity	Graphic designers and younger participants are generally more familiar with advanced AI tools. Older participants use AI mainly for practical tasks. Frequent use of AI is more common among roles that blend creativity with technical tools.
Attitudes Toward AI	Younger participants see AI more as an opportunity, while older participants are cautious about its reliability. Some concern about long-term effects, but AI is not generally viewed as a threat.
Opportunities Presented by AI	AI is seen as improving efficiency and productivity, though there are doubts about its potential to improve quality. Creative fields benefit from AI's efficiency, though the human touch is still valued for deeper tasks.
Impact on Job Security	Confidence in creative and interpersonal skills mitigates fears of job displacement due to AI. Concerns persist in specific fields like journalism, but creative roles feel more secure.
Future Outlook	Optimism about AI's potential to improve work processes, with an understanding of its limits. There's broad agreement on AI's potential, but also the belief that human-centered tasks remain critical.

2.2 Sectoral Comparison of Willingness to Learn AI

Focusing on sectoral differences in willingness to learn among SME employees, research found that employees in financial and professional services are most enthusiastic about learning generative AI. In contrast, customer service and retail sectors show lower willingness. The analysis indicates that sector-specific education and managerial support can effectively promote AI adoption. It highlights the potential for tailored AI training initiatives based on sectoral needs, aiming to optimize sector-based integration of AI tools (Kudyba, 2024).

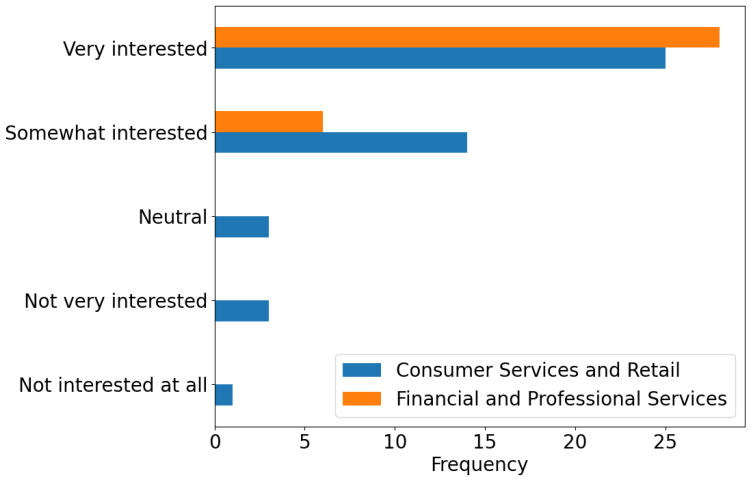

Figure 1: Distribution of interest across sectors, question: How interested are you in learning to use generative AI tools to enhance your work in your current role?

2.3 Exploration of Generational Gaps in AI Usage

This research paper examines the differences in generational demographics of AI adoption in SMEs. The study found that there is not a statistically sufficient evidence to reject the hypothesis that younger generations use AI more than older ones. While there may be trends indicating that Generation Z and Millennials show a slightly higher inclination toward AI usage, these differences are not statistically significant. This can be seen in Figure 2 through a trend in people who use this technology regularly for work. As a result, the paper puts forth the recommendation of individualized AI training programs that emphasize other aspects or further research on the subject with a bigger sample size. (Pitulice, 2024).

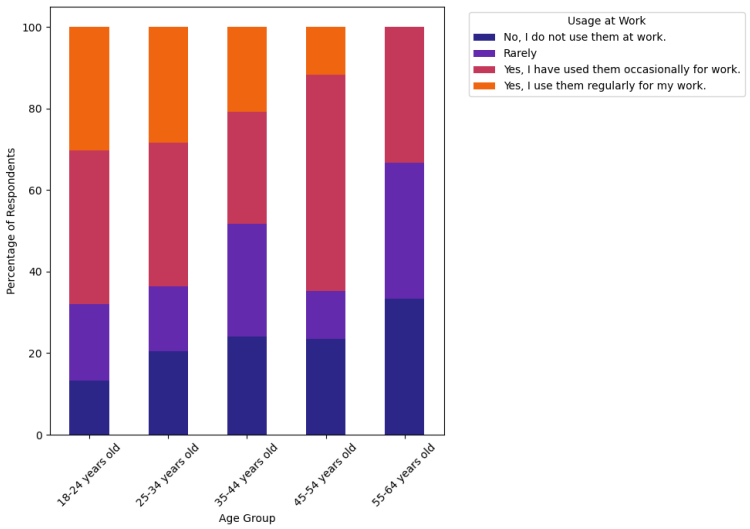

Figure 2: Distribution of Gen AI Usage at work across age groups

2.4 Departmental Differences in AI Learning Willingness

This study explores differences between willingness to learn about GenAI between departments within SMEs. Results show significant differences in AI usage and expected reduction of errors because of AI tools across departments, particularly between IT and Communications. However, willingness to learn about AI did not vary significantly across departments, suggesting that departmental roles are equally willing to learn about AI. The study emphasizes a need for structured approaches in department classification to enhance future research on departmental differences in learning about AI (van Santen, 2024).

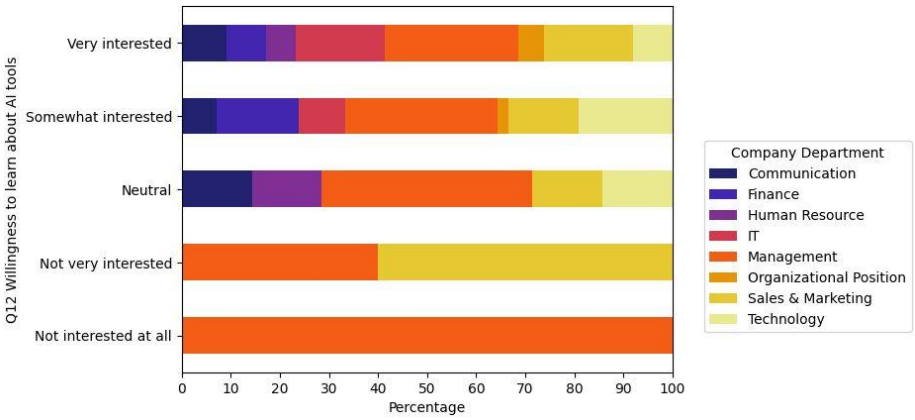

Figure 3: Relative share of willingness to learn per department

2.5 Educational Influence on AI Willingness in SMEs

The research paper SME Employees' Willingness to Learn About Generative AI Tools: The Role of Educational Level explores how employees' educational backgrounds might affect their interest in learning AI tools within small and medium-sized enterprises (SMEs). Surprisingly, the findings suggest that educational level—whether high school, bachelor's, or master's—doesn't make a big difference in an employee's willingness to engage with AI. Instead, factors like organizational support appear to play a much bigger role in motivating employees to learn these new technologies (Stacie, 2024).

Figure 3 brings this insight to life, showing the relationship between employees' interest in learning AI and the time they're willing to commit, organized by educational level. The scatter plot shows that as interest in AI grows, employees are generally willing to dedicate more time. Across all education levels, a similar pattern emerges, although employees with master's degrees show a slightly more consistent commitment, hinting at possible differences in motivation or flexibility within this group.

These findings suggest that AI training programs in SMEs should be inclusive and accessible to employees of all educational backgrounds, with a focus on creating supportive environments that encourage continuous learning and engagement with AI.

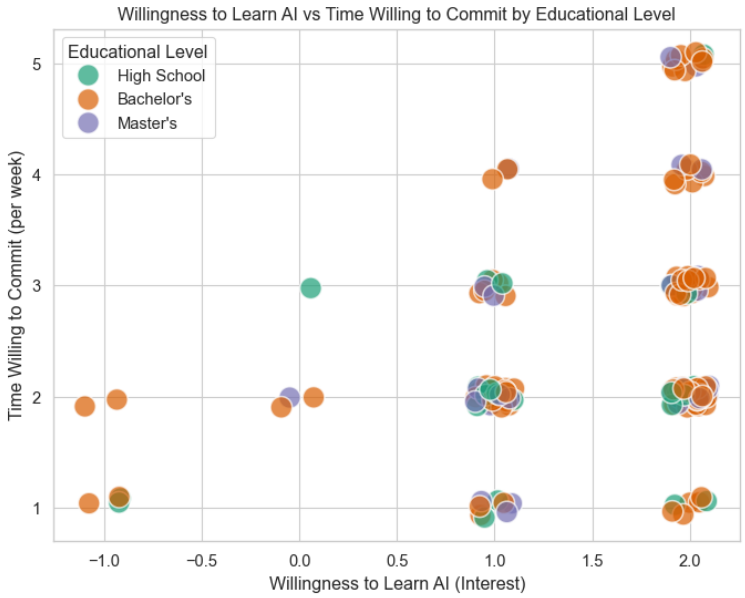

Figure 4: Scatter plot showing the positive correlation between AI learning interest and time commitment.

3 Conclusions

In conclusion, the policy paper highlights all critical factors influencing willingness to learn about Generative Artificial Intelligence (AI) among employees within SMEs, identifying demographic, sectoral, and departmental differences. The findings indicated the importance of tailored approaches to AI training, considering specific business needs and the diverse backgrounds of employees. By addressing these variances can significantly reduce resource waste and enhance the efficiency of AI adoption across SMEs. Keeping all this in mind it can be concluded that by fostering a supportive learning environment and engaging in industry networks plays a vital role in encouraging a positive perspective on Generative AI technologies. As AI grows more and more and reshapes all known industries to this day, it is crucial for SMEs to adopt strategic, well-structured approaches to integration. This will ensure both productivity gains and job security for employees (Gupta, 2024). Moreover, strategic investment in training and education on generative AI is vital for SMEs seeking to leverage the benefits of these technologies. The results of this policy paper show that different industries, departments, and age groups have different levels of desire to embrace AI, which is often impacted by how comfortable and familiar staff members are with the technology. SMEs may fill up knowledge gaps, lessen concerns about losing their jobs, and promote a culture of lifelong learning by making investment in extensive training programs a top priority. All in all, before adoption the step of effective training and education on generative AI has to be taken. This will lead to a more skilled workforce and higher productivity. By giving SME employees space and proper training to learn more about generative AI tools, businesses can ensure one thing without any doubt which is smoother integration of these technologies, minimize resistance, and better prepare for future advancements.

4 Recommendations

As we examined various factors and their influence on the willingness to learn, several suggestions ware identified that have the potential to enhance processes within organizations. This analysis centers on small and medium-sized enterprises (SMEs), which form the backbone of major economies globally (Reswita et al., 2021). Given the vast opportunities afforded by the integration of artificial intelligence (AI) into daily operations, we recommend that these enterprises consider the following strategies for implementation:

4.1 Implement AI technology in stages

AI implementation should follow a phased approach, beginning with increasing awareness and perception, moving to assessment, and finally to outcomes. Each stage should involve factors like perceived usefulness, ease of use, enjoyment, and emotional engagement with the technology. Prior to large-scale implementation,

offer employees opportunities to engage with simple AI tools, building familiarity and reducing resistance to adoption. By conducting controlled AI experiments employee familiarity and confidence with the technology would be increased, which encourages more widespread adoption. It is also crucial that employees feel supported by their supervisors and management in their learning efforts. This support can boost self-efficacy and motivate employees to actively engage in AI training. Additionally, AI training programs should emphasize career progression, highlighting how AI skills can improve employability and open up promotional opportunities, driving a higher learning intention among employees.

4.2 Educate considering business needs

Educational experience should be tailored to the specific business domain of the SME. The more relevant the AI applications are to their specific field, the easier it will be to overcome learning barriers. It is recommended that AI tools are first provided to employees with prior experience in technology, as their expertise can help identify the most effective use cases for AI within the business. Ultimately, by tailoring trainings on generative AI to the workflows specific to SME employees across different sectors, it will ensure productive workflow and a strategic workforce. In that way it will be guaranteed better learning experience among SME employees and consequently it will align the adoption with SMEs' specific business challenges.

4.3 Broaden your network

To enhance the successful implementation of AI, SMEs should participate in social events and professional networks within the field of AI. Engaging in such conferences and industry-specific gatherings allows SME owners and employees to connect with industry leaders who are also navigating AI adoption. Research indicates that social networks significantly shape how entrepreneurs perceive new technologies such as Generative AI, with entrepreneurs being more likely to adopt and experiment with AI when they observe positive attitudes toward the technology within their network. By attending AI-focused events, SME owners can benefit from shared insights, experiences, and success stories, which can foster a more favorable perception of AI and increase confidence in its experimentation and integration.

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Appendix: Stakeholder Analysis

The stakeholder analysis document can be found by following this link: Stakeholder Analysis Document

Table 2: Power/Interest Matrix of Stakeholders in AI Adoption

Power/Interest Level	**Stakeholders**
High Power / Low Interest	DigiWerkPlaats
High Power / High Interest	Managers
Low Power / Low Interest	Employees
Low Power / High Interest	AI Training Providers, Human Resources