

From Digital Skills to Competitive Advantage: The Impact of Digital Business Training on SMEs

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Abstract: Digital business transformation is increasingly shaping the operating conditions of small and medium-sized enterprises (SMEs) across all industries. In Finland, where digital services are widely used and broadband connections are reliable, customers primarily search for and use services through various digital channels, creating new demands for digital business capabilities among SMEs. However, access to technology alone does not guarantee successful digital transformation. SMEs operating in traditional sectors, in particular, often struggle to translate digital skills into concrete business development and a competitive advantage. This highlights the need for effective support models that go beyond mere access to digital tools. This paper examines the impacts of a digital business training and coaching model on business development orientation, growth and competitiveness among SMEs. Using the Digital Steps programme implemented in South Savo, Finland, as a case study, the study draws on survey data and qualitative interviews with participating companies. The target group consisted of micro-enterprises and small businesses, including sole traders operating in the service, tourism, retail and other traditional industries. The analysis explores perceived competency development, the adoption of digital tools and initial business-related outcomes, with particular attention paid to differences related to the intensity of participation. The findings indicate that combining structured training with company-specific coaching helps SMEs translate digital skills into improved marketing, customer engagement and operational efficiency. These developments are associated with perceived improvements in competitiveness and growth potential, highlighting the role of tailored digital business training in supporting SME development in a digital business environment. While the immediate effects on revenue and employment were limited, participants reported visible impacts. Moreover, more intensive participants reported business outcomes such as access to new networks and markets and improved competitiveness, rather than merely knowledge gains or tool adoption. Overall, the findings highlight the importance of supporting SMEs' digital development through regional business support systems that seek scalable and impactful digitalisation initiatives.

Keywords: Digital Business, Business Training, Digital Skills, SME, Competitiveness

1. Introduction

Digital business transformation is reshaping the business environment of small and medium-sized enterprises (SMEs) across all industries, while digital technologies are reducing the distance between businesses and people. At the same time, this transformation is creating a divide between SMEs that can capitalise on digitalisation and those that cannot. In Finland, where digital services are widespread and broadband connections are reliable, customers increasingly search for and use services primarily through digital channels. However, access to technology alone does not guarantee successful digitalisation.

Recent crises have increased uncertainty and volatility across companies of all sizes. In this increasingly unpredictable environment, digital transformation has become a critical means of strengthening resilience and adapting to rapid change. During the COVID-19 pandemic, many companies were compelled to digitalise their operations; however, the sudden and unplanned nature of this shift limited its effectiveness compared with a more strategic and deliberate approach (Kuosmanen et al., 2024). When integrated into business strategies and everyday operations, digital transformation can substantially enhance a company's adaptive capacity and resilience (Al Omoush et al., 2025). Moreover, the adoption and diffusion of digital technologies in SMEs have been shown to improve value creation and innovation performance (Hassan et al., 2023). Nevertheless, these benefits only materialise when digital tools are adopted in ways that are appropriate to the company's context and capabilities. Many SMEs lack the internal resources required to achieve this independently or to access external expertise.

The *Digital Steps – Towards More Customer-Centric Digital Business* project was a regional development initiative carried out between 2023 and 2025. The project aimed to strengthen the digital business capabilities of micro-enterprises and small business in South Savo, Finland, with a particular focus on sole traders and rural companies operating in traditional industries. It combined digital business education with company-specific coaching and sparring, supporting SMEs in translating digital skills into concrete business practices. This study

examines the impact these actions had on the participating SMEs through the following two research questions:

RQ1. How do digital business training and coaching impact SMEs' business development orientation, growth and competitiveness?

RQ2. How does the intensity of participation affect the perceived gains?

To address these questions, the study examines the survey conducted in 2025 and eight interviews carried out in the summer of 2024. Data was collected from entrepreneurs and their employees that had participated in one or more of the following project activities: practical digital skills training, company-specific coaching, competence assessments, self-learning materials, and targeted development pathways for e-commerce businesses.

The rest of the paper is structured as follows. The next section provides a theoretical framework and background information on SMEs' needs and challenges in terms of digital competences. Section 3 provides more detailed information about the Digital Steps training model and services. Section 4 includes the survey results and insights gained from the interviews. Finally, in the 'Discussion and Conclusions' section, we discuss the main findings, their implications and the main limitations of the study.

2. SMEs' Digital Competence Needs and Challenges

In SMEs, obstacles to digitalisation are more often related to human and organisational issues than to the technology itself. These challenges include established cultural practices, employees' resistance to change, gaps in relevant knowledge and skills, constrained resources, and limited willingness to take risks. (Schvertner, 2017.) Karadağ et al. (2024) demonstrate that information technology (IT) plays a significant role in high-performing SMEs, but that, on its own, it is not sufficient to achieve superior performance. Effective digitalisation also requires digital maturity, a clear digital strategy and adequate employee skills (Karadağ et al., 2024).

Kahveci (2025) conceptualises digital transformation as a continuous process comprising four stages: Digital Awareness, Digital Strategy and Roadmap, Digital Adoption and Implementation, and Digital Continuous Improvement. The process begins with recognising and understanding the digital tools and technologies relevant to the company, followed by the development of the skills needed for their effective use. Through this structured and continuous approach, SMEs can enhance growth, improve efficiency, create greater value and foster innovation (Kahveci, 2025).

Artificial intelligence (AI) has also brought about changes in terms of the business landscape. It is reshaping the nature of work, automating routine tasks and creating new business models. However, the adoption of AI in SMEs is not self-evident. According to Alaranta et al. (2025), the key bottlenecks in SMEs include skill gaps, cost and resource constraints, issues regarding data availability and quality, resistance to change, concerns related to cybersecurity, ethical use and regulation, uncertainty regarding return on investment (ROI), as well as integration challenges. In SMEs, the timely and well-managed use of artificial intelligence, supported by continuous learning and collaboration, can become an important factor in strengthening competitiveness.

Digitalisation opens new avenues for more efficient customer orientation. Its core aim is to recognise and understand the interactions between a company and its customers. Companies are encouraged to view their activities as embedded in customers' everyday lives, including their routines, processes and interactions. This perspective enables companies to support customer value more effectively than by focusing solely on the provision of individual services. The digitalisation of services has facilitated increasingly seamless customer interactions through online channels, while the shift towards electronic distribution channels has significantly accelerated the development of new digital services. (Koivisto et al., 2021.)

Digitalisation has been found to improve companies' turnover, with particularly strong potential in small companies, where the overall level of digitalisation tends to be lower (Kuosmanen et al., 2024). In a quickly changing environment, digitalisation offers SMEs a way to survive and build resilience. Every entrepreneur must reconsider their business strategy as the operating environment changes, with online shopping having drawn customers away from local shops. After the pandemic, rising energy prices stemming from the situation in Ukraine, inflation and changes in consumer purchasing behaviour have had a radical impact on the business landscape and the way business is conducted. (Spolander et al., 2025.)

The impacts of company training can be categorised into participants' reactions, the development of their competences, changes in their behaviour, and targeted results, such as business outcomes (Kirkpatrick &

Kirkpatrick, 1994). To better understand how digitalisation contributes to SMEs' competitiveness and resilience, the underlying mechanisms can be conceptualised. According to Meier et al. (2025), digital transformation is a multidimensional process in which technological, organisational, knowledge-based and strategic elements interact to shape SME competitiveness through resources, capabilities and market positioning. In this view, digital transformation forms the foundation for enhancing competitiveness and achieving a competitive advantage. Extending this perspective, resilience can be understood as a higher-order capability that enables SMEs to maintain their adaptability, performance and competitiveness under conditions of uncertainty (Nongnuch et al., 2026). Thus, digital transformation supports both competitiveness and long-term resilience in SMEs.

The need for guidance in digitalisation is particularly pronounced in Eastern Finland and South Savo. During the period 2024–2025, the economic outlook weakened, growth expectations became more moderate and investment activity remained restrained. At the same time, companies in the region appear to be adapting to this prolonged period of uncertainty. (Ohlsbom et al., 2024a; Ohlsbom et al., 2025.) SMEs in South Savo perceived notable development needs in sales and marketing (58%), while 28% reported development needs related to personnel and training (Ohlsbom et al., 2024b).

3. Digital Steps Training Model

The project supported micro-enterprises and small and medium-sized enterprises (SMEs) in South Savo, particularly sole traders and rural businesses, in developing their digital skills and strengthening customer-oriented digital business practices. The project reached a total of 180 SMEs through a digital skills assessment and delivered 96 digital skills training sessions. In total, 134 SMEs participated in these training sessions, coaching activities and targeted development programmes designed to address the specific needs of SMEs (Ollanketo & Pylvänäinen, 2025). The participant profile was characterised by a predominance of women (77%) and most were aged between 30 and 54 (62%), followed by those aged over 54 (31%). The vast majority of participants (approximately 90%) were small businesses, primarily sole traders and micro-enterprises employing between one and nine people.

The project was initiated to strengthen SMEs' digital business capabilities, particularly in the development of digital marketing, sales and customer orientation, as well as in improving productivity through digital tools and operating environments. Companies needed to enhance their skills in a rapidly evolving digital landscape and to strengthen their ability to leverage customer insights for business development. A key focus of the project was data- and knowledge-driven decision-making, with a strong emphasis on target groups, as well as improving accessibility as a driver of growth.

The project provided a practical and agile training and coaching model that effectively addressed these needs; companies were offered a comprehensive package of practical digital training, company-specific coaching, skills assessments, self-study materials and tailored coaching pathways for e-commerce businesses.

When joining the project, the entrepreneur completed a digital skills assessment using a digital tool and had a sparring discussion with a business advisor, during which they were coached and provided with tailored training recommendations. The digital skills assessment allowed the project to identify the SME's training needs, and the training programme was planned based on the results. As the project progressed, additional training needs emerged through training sessions and participant feedback. Continuous dialogue therefore proved essential.

The skills needs identified placed particular emphasis on digital marketing, as well as the use of artificial intelligence and the opportunities it offers. The training sessions (Table 1) focused on practical, immediately applicable skills. For example, in the training on Meta advertising, participants prepared and launched ads during the session; they then analysed performance in a follow-up session and refined their campaigns, including the use of A/B testing, while the final sessions focused on gaining a deeper understanding of the tools and consolidating key learnings. Table 1 summarises the main training topics, the number of sessions delivered for each topic, the total number of participants in each specific training module, and the average number of participants per session.

Table 1: Training topics and participation.

Training	Session	Participants	Participants per Session
Canva clinic	8	41	5.1
Introduction to Facebook and Instagram advertising	6	58	9.7
Mobile video shooting and editing	6	42	7.0
Mobile photography workshop	5	35	7.0
Optimise your website	4	18	4.5
Writing for the web	4	28	7.0
Google Ads Basics	3	28	9.3
Using ChatGPT in everyday tasks	3	34	11.3
Leveraging AI in content creation	3	34	11.3
Customer acquisition on Instagram	3	30	10.0
Turn IG Reels into revenue	3	26	8.7
Optimise your Meta pixel and audiences	2	9	4.5
Customer Insight and Sales	2	14	7.0
Social media for businesses	2	13	6.5
Basics of search engine optimisation	2	14	7.0
Meta Ads A/B Testing	2	12	6.0
Google Business profile workshop	2	20	10.0
Advanced Facebook and Instagram advertising	2	17	8.5
Introduction to Analytics for entrepreneurs	2	21	10.5
TikTok for business – Basic level	1	6	6.0
TikTok for business – Advanced level	1	5	5.0
Turn your expertise into an online course	1	7	7.0
Achieving results with Google Ads – Advanced training	1	9	9.0
Create persuasive social media advertising – Advanced training	1	5	5.0
Advanced search engine optimisation training	1	6	6.0
Accommodation entrepreneurs: Take control of Booking	1	14	14.0

The training portfolio was closely tailored to skills needs identified among the participating SMEs, particularly in the areas of digital marketing and the practical application of AI, highlighting a strong demand for immediately applicable digital competences. Social media marketing trainings proved especially popular. More advanced topics attracted smaller but engaged participant groups, suggesting that SMEs prioritised foundational digital marketing skills before adopting more specialised optimisation practices.

Awareness of digital business trends and emerging platforms was promoted through open digital information sessions, for which there was clear demand among SMEs. In total, the project organised 16 free, open webinars and 10 face-to-face events, attracting 669 individual participants. They covered a broad range of topics, from customer-centric digital business models, AI adoption and digital marketing in different platforms to automation and improving productivity.

The e-commerce training programme was delivered twice: first for beginners and then for growth-oriented e-commerce businesses, with a particular focus on international markets. The programme covered key e-commerce topics including internationalisation, digital marketing and customer acquisition, live and social commerce, influencer and UGC marketing, distribution channels and the development of the participants' own e-commerce concepts.

In addition, 46 SMEs participated in company-specific digital coaching sessions, delivered by digital business advisors and outsourced eBusiness experts. The digital coaching provided highly practical support to the SMEs. The coaching sessions often focused on activities such as developing websites or online stores, planning and

implementing digital marketing actions and monitoring results. Rather than providing ready-made solutions, the work was carried out collaboratively, starting from the entrepreneur's own goals and needs.

4. Impact on Competences, Practices and Business Outcomes

4.1 Survey

A participant impact evaluation survey was conducted in June–July 2025 using the Webropol survey tool. The survey was distributed to all 189 programme participants, with 38 responses received (a response rate of 20%). No background questions were included, so respondents are assumed to represent typical participants: sole traders, micro-enterprises and small businesses in the service, tourism, retail and other traditional sectors. The questionnaire covered areas such as new knowledge and skills acquired, the adoption of digital tools, improved customer understanding and relationships, and the development of new products or services. Respondents self-assessed the outcomes on a scale from 1 (strongly disagree) to 5 (strongly agree), and open-ended responses were also collected.

Responses were distributed fairly evenly among participants who engaged occasionally (13), moderately (11) and very intensively (12), with only two respondents participating solely in the digital skills assessment. Participation levels were self-defined (occasional: up to three sessions; moderate: a few sessions; intensive: several sessions plus mentoring or coaching).

On average, the most frequently reported benefits were increased knowledge and expertise, the development of operating methods, the adoption of digital tools, and a greater appreciation of the value of business data (e.g., website or social media analytics). Improvements in customer understanding and relationships were also common. However, the programme had a notably smaller impact on measurable business outcomes, such as staff recruitment, the launch of new businesses, increased exports, the generation of new ideas, the development of scalable solutions, or increased revenue. Overall, Figure 1 indicates strong impacts on competence gains (C) and behavioural changes (B), but limited effects on business outcomes (A).

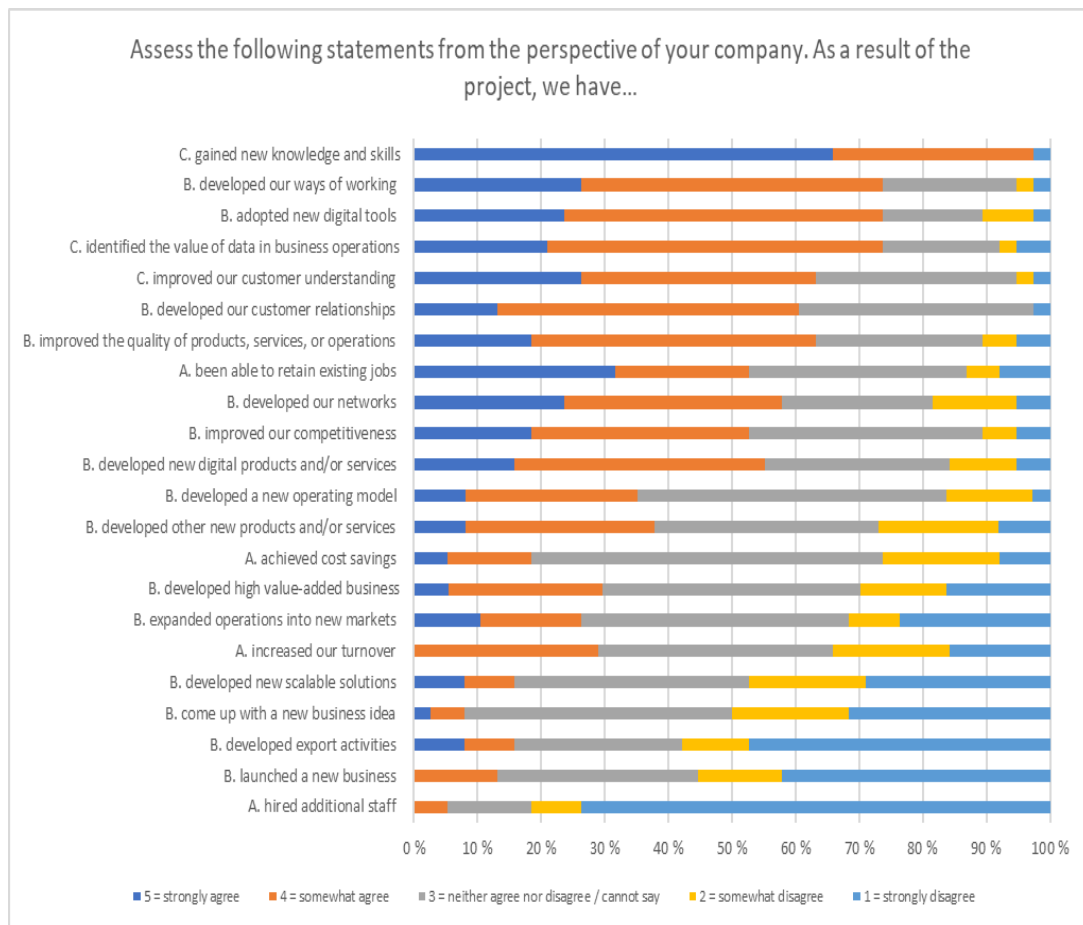


Figure 1: Responses to the statements in the questionnaire from the company's perspective.

A comparison between respondents who participated very intensively and those who participated only occasionally showed clear differences in terms of perceived impacts, especially in business outcomes. The highly engaged participants reported significantly greater benefits in export development, network building and high value-added business development. They also more often noted improvements in entering new markets, customer understanding and competitiveness.

The open-ended responses further highlighted key benefits, including access to information beyond one's professional *bubble* and up-to-date insights in a rapidly evolving digital environment. Many participants reported that they had gained directly applicable knowledge, particularly in the areas of business renewal and development, as well as in recognising the essential role of social media marketing.

Respondents appreciated the opportunity to reflect on their company's current situation and received practical support for concrete issues. Gaining new perspectives and inspiration for marketing development was considered important, along with learning about customer segmentation and AI use. Some participants noted increased confidence and a willingness to experiment with new solutions, such as using AI tools and creating social media advertisements independently. This led to more active customer communication and improved use of digital data. Overall, digital competence increased in multiple ways, enthusiasm for development grew, practical problems were resolved, and valuable contacts were established for future support.

A range of training formats—workshops, sparring sessions and information sessions—supported both long-term development and rapid responses to specific needs. Several respondents highlighted the importance of adapting to the digital business environment; as one of them noted: 'We have moved from the era of automatic data processing into the Digital Age, led by data and intelligence'. In particular, participants in the e-commerce pathway reported improved customer orientation in their online stores, the adoption of relevant digital tools and better use of data in decision-making.

4.2 Interviews

During the interim evaluation, eight long-term participants were interviewed in the spring and summer of 2024 to gain an in-depth understanding of their digital development needs. The thematic interviews covered the company's background, participation experiences, lessons learned, benefits and future plans, and were analysed using content analysis (Patton, 2002). The companies interviewed were mainly sole traders or micro-enterprises from diverse sectors (e.g., agriculture, clothing retail, physiotherapy, crafts). Participants were primarily drawn from those who had also taken part in earlier projects, with a few additional participants included. The entrepreneurs had varied backgrounds, with a clear distinction between digital beginners and more advanced, development-oriented participants.

Some entrepreneurs were actively pursuing growth, with the aim of expanding into domestic and international markets, as they saw increasing opportunities abroad. Their plans included launching international online stores or further scaling existing e-commerce operations. These participants emphasised the need for continuous monitoring of global trends and customer interests, as well as ongoing business development. In contrast, some entrepreneurs nearing retirement planned to close their businesses and had limited interest in growth, focusing instead on maintaining a sufficient income. Several respondents also highlighted global uncertainty, noting that the rapidly changing and unpredictable environment makes even short-term planning difficult.

Digital beginners needed simple, easy-to-use solutions and practical guidance. They often saw digital business as separate from their core activities, with digital tools playing only a minor role in their day-to-day work. Since they were typically not digital natives, they found skill acquisition challenging and often repeated training sessions, reviewing recordings and taking detailed notes. Producing content was difficult for some, leading to cautious use of channels such as social media. AI tools were usually tested carefully and were seen as potentially useful. Despite significant enthusiasm for digital development, putting the tools into practice proved demanding and progress was often slow.

For digitally advanced entrepreneurs, digital business is an integral part of daily operations, sometimes alongside brick-and-mortar activities. These people are strongly motivated to develop this area, investing in social media or e-commerce depending on their focus. They continuously analyse performance, monitor their environment and competitors, and actively seek new learning opportunities. AI is used routinely and broadly, for example, in text and image editing and for translations.

Despite differing needs, both groups benefited from the project. There are clear business impacts from participation in the project. Through digital business development, companies gained new customers, increased sales, reduced costs and developed new products.

Adopting new channels and tools can significantly increase the visibility of small businesses. Improved website functionality enhances the user experience, increases visitor numbers and boosts sales. When development is implemented coherently, business processes become faster and more efficient. Greater marketing knowledge and digital skills directly improve performance; for example, understanding how social media works helps businesses reach potential customers more effectively.

Many entrepreneurs highlighted increased confidence as regards experimenting and trying out new approaches as a key outcome. Their ability to monitor developments and maintain a positive attitude toward continuous improvement was also strengthened, providing them with a solid foundation for ongoing independent development, even in cases where external support may be needed.

5. Discussion and Conclusions

Digital business transformation is increasingly shaping the operating environment of small and medium-sized enterprises (SMEs), but access to technology alone is insufficient to ensure success in this area. SMEs operating in traditional sectors, in particular, often face challenges in translating digital skills into concrete business development, which underscores the need for effective support models that focus on enabling practical application, learning and long-term capacity building.

This paper examined how the Digital Steps programme influenced SME development, growth and competitiveness. The target group included entrepreneurs operating in the services, tourism, retail and other traditional sectors. The study examined how digital business training and coaching impacted SMEs and how the level of participation affected the perceived gains. The results were based on survey data and qualitative interviews with participating companies.

Digital business training and coaching influenced companies primarily through the development of skills and the adoption of digital tools. A better understanding of customers, the use of data and the renewal of internal processes are the most notable outcomes. The effects on business growth, exports and recruitment are clearly more limited and require a longer time horizon to materialise. Furthermore, the immediate effects on revenue and employment were limited.

Many entrepreneurs noted that the information, training and mentoring helped them keep pace with the rapidly evolving digital operating environment. Several companies reported concrete outcomes: new online stores were established, the quality of websites improved and social media marketing was strengthened. The project was also seen as encouraging experimentation with new solutions, such as artificial intelligence. Mentoring was repeatedly highlighted as one of the most valuable forms of support, providing companies with guidance, direction and confidence for their development. Motivational effects were also significant: participation inspired renewal, introduced new perspectives and helped clarify companies' digital strategies.

Although customer orientation was a central to all training, it was not easily adopted by all participants. In the competence assessments, entrepreneurs often described their customer understanding as already being 'in good shape', but discussions revealed that they did not collect customer feedback systematically or use data to support decision-making. This observation reinforced the need to strengthen competence in the *practical methods* of customer orientation, not merely as an attitude, but as concrete actions that support business development. In many cases, what was learned during the project could be transferred directly into the companies' own operations, which increased the perceived impact of the training.

Our results indicate that the combination of structured training and company-specific coaching, as well as a wide range of training formats—including workshops, sparring sessions and information sessions—supported both longer-term development work and rapid responses to specific needs. It also proved highly useful for entrepreneurs from diverse backgrounds, ranging from digital beginners to more development-oriented and digitally advanced entrepreneurs. (Rajahonka, 2025.)

In answering our second research question, it is worth emphasising that the companies that participated more intensively reported business-related outcomes, such as gaining access to new networks or markets, or improving competitiveness, and not just impacts related to acquiring new knowledge or adopting new digital

tools. They also mentioned expansion into new markets, improved customer understanding and increased competitiveness more frequently.

In the interim interviews and the survey conducted at the end of the programme, participants were also asked to provide feedback on their future development needs and the type of training they would like to receive in the future. They expressed a strong desire for similar courses to continue in the future, as the need for this type of support remains ongoing. Key areas identified for further development include digital marketing, customer management and communication, and internationalisation—topics that represent persistent challenges and are rapidly evolving. Internationalisation, particularly in the context of online retail and sales, was seen as requiring external expertise, new perspectives and peer support.

Just as the companies interviewed differed in their starting points and objectives, their outlook for the future was also twofold. Some entrepreneurs were actively developing their businesses and seeking growth, while others were approaching retirement age and planning to wind down their operations. Consequently, their expectations regarding future training also varied.

Evaluating the impact of digital skills development and SME growth is challenging due to the short duration of the project. The Digital Steps project received funding on three occasions, which made it possible to measure the impact among the companies that participated in the activities during several project periods. In this article, we present the results from the interim evaluation interviews conducted with participating entrepreneurs (2024), as well as the findings from the evaluation survey conducted at the end of the most recent project (Digital Steps – More Customer-Oriented Digital Business, 2023–2025).

The projects had a concrete impact on the entrepreneurs' businesses. A clear and recurring theme in their feedback is that the project has led to increased sales, new customers and stronger online visibility. The digital skills acquired have strengthened the entrepreneurs' self-confidence and their willingness to use digital solutions as part of their everyday operations. The findings highlight the importance of supporting SMEs' digital development through regional business support systems.

This study is subject to several limitations, including a short observation period, reliance on self-reported outcomes, and the case-specific nature of the programme, which may limit the generalisability of the findings. Future research could complement self-reported data with more objective information. Additionally, replicating the study across different contexts and incorporating comparative designs would improve the generalisability of the findings.

Ethics Declaration

Ethical clearance was not required for the research.

AI Declaration

Artificial intelligence (ChatGPT and Copilot) was used to support the writing and editing of this article. The tool was used to refine the language, assist with translation, and enhance overall readability. All content was critically reviewed and approved by the authors.

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