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STIKK KOSOVO ICT ASSOCIATION

KOSOVO IT BAROMETER

2023 - 2024

Market Sizing, Export Capacity, Workforce Trends, and Sectoral Challenges in the ICT Industry

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Executive Summary

The Kosovo IT Barometer 2023–2024 provides an in-depth assessment of the ICT and creative services sector, capturing both its rapid growth and the systemic challenges it faces. Conducted annually since 2014 by STIKK, the IT Barometer has become a trusted resource for policymakers, industry leaders, and international partners. This study is carried out with the support of "Skills for sustainable jobs in Kosovo" project, funded by the Grand Duchy of Luxembourg and implemented by LuxDev, the Luxembourg Development Cooperation Agency. The 2025 edition examines developments across 2023–2024 and includes a special focus on the awareness, participation, and effectiveness of Dual Vocational Education and Training (Dual VET) in Kosovo's private ICT sector.

At a time when digital transformation is reshaping global economies, Kosovo's ICT industry stands out as one of the country's most dynamic growth engines. More than half of the companies surveyed were founded after 2020, reflecting the sector's entrepreneurial drive. Yet, the overwhelming dominance of micro and small firms (nearly 90% of the sample) highlights the structural challenge of scaling beyond early stages. Most companies remain concentrated in Prishtina, with regional firms underrepresented, suggesting that opportunities outside the capital are still underdeveloped.

The comparison between the IT Barometer 2021–2022 and 2023–2024 reveals clear progress and structural change in Kosovo's ICT sector. JavaScript remains the top programming language, while C# has grown in use and TypeScript has newly emerged. Artificial Intelligence has moved from niche adoption to widespread application, marking a major shift in industry practices. The market continues to be dominated by micro-enterprises, yet revenues and salaries have improved across roles, reflecting greater professionalization.
Despite this progress, the shortage of skilled workers persists, and companies now face added challenges such as access to finance, economic uncertainty, and cybersecurity risks. Internationally, the DACH region and USA & Canada remain key export markets. Overall, the sector shows rapid modernization and strong innovation potential, but growth is still limited by its small-scale structure and talent gap.

Methodology

The study was based on a quantitative self-completion online survey (CAWI) conducted between August and September 2025. Invitations were extended to 396 consenting ICT-related companies drawn from the Kosovo Business Registration Agency database; 115 companies completed the questionnaire. Respondents were predominantly business owners (86%), ensuring that findings largely reflect leadership perspectives. Data was processed using NField and validated in SPSS, with strict confidentiality and quality standards. Limitations included survey dropout rates and the self-administered nature of responses, which limited verification of completion.

Key Findings

Profile and Characteristics of ICT Companies

The sector is dominated by young, micro-sized, tech-oriented companies, mostly founded after 2020 and concentrated in Prishtina. Creative Services show slightly higher female participation. Most companies lack formal certifications, limiting readiness for international markets. Despite growth since 2021–2022, talent shortages and low gender diversity remain persistent challenges.

Adopted Technologies and Provided Services

Companies mainly offer software/web development and IT support, while advanced fields (cybersecurity, big data) are less common. Core technologies include JavaScript, C#, PHP, and frameworks like React, .NET Core, and Angular. Cloud adoption (AWS, Azure, GCP) and AI integration are widespread across technical and creative roles. Creative firms focus on digital marketing, design, and AI-supported workflows; stronger upskilling is needed.

Workforce Dynamics, Skills, and Talent Readiness

The workforce is expanding and increasingly technical, but micro-enterprises still face limited internal capacity. Skills shortages remain in programming, Data/AI, and cybersecurity despite rising graduate numbers. Salaries have increased slightly but remain below international

standards, affecting retention. Training investment is modest, and graduates often lack practical experience—highlighting the need for stronger VET–industry cooperation.

International Orientation, Revenue Patterns and Market Reach

The sector is highly export-oriented and dominated by micro firms earning below €250,000. About 68% operate internationally, mainly in DACH and the US, with many relying exclusively on exports. Higher-revenue firms serve diverse global clients and offer more advanced services, while lower-revenue firms rely heavily on referrals and closer markets. Compared with 2021–2022, the sector shows more professionalization, wider technology adoption, and stronger global engagement.

Challenges and Future Outlook

Key challenges include talent acquisition, client growth, financing, and rising global competition. Higher-revenue firms face more cybersecurity risks due to larger scale and international exposure. Future skill demand will focus on AI/ML, Data/Big Data, Cloud, IoT, and next-generation networking. Most firms plan to expand services and enter new markets, particularly those already exporting.

Support and Collaboration

Engagement with educational institutions and government programs remains low. Larger firms are more active in internships, mentorships, and curriculum collaboration. Participation in Dual VET is minimal, though smaller companies show strong potential interest if awareness improves. Government support is mostly grant-based; firms highlight the need for more funding, networking, and investment opportunities.

Conclusions

Profile & Company Characteristics

- Sector dominated by young, micro-sized tech companies centered in Prishtina.

- Strong male dominance in technical roles; Creative Services slightly more gender-balanced.
- Lack of certifications limits international readiness.
- Talent shortages and low gender diversity persist despite growth since 2021–2022.

Technologies & Services

- Software/web development and IT support remain core services.
- JavaScript, C#, PHP, and frameworks like React and .NET Core dominate.
- Cloud and AI tools widely adopted across tech and creative teams.
- Creative firms rely heavily on digital marketing and design powered by AI.

Workforce, Skills & Talent Readiness

- Workforce is becoming more technical but internal capacity remains low in micro-firms.
- Skills shortages remain in programming, Data/AI, cybersecurity.
- Salaries rising but still below international standards.
- Limited practical training; stronger VET–industry cooperation needed.

International Orientation, Revenue & Market Reach

- Sector is highly export-oriented, especially toward DACH and the US.
- Majority of firms earn below €250,000; only medium/large firms exceed €1M.
- Higher-revenue firms have more diverse global clients and advanced services.
- Compared to 2021–2022, sector shows rising professionalism and global integration.

Challenges & Future Outlook

- Key challenges: talent acquisition, client growth, financing, competition, tech-related risks.
- Cybersecurity risks higher among larger, more global firms.
- High demand expected for AI/ML, Data, Cloud, IoT, and network technologies.
- Most companies plan to expand services and enter new markets.

Support & Collaboration

- Low engagement with education institutions and government programs.
- Larger firms lead in internships, mentorships, and curriculum involvement.
- Dual VET participation remains minimal.
- Firms seek more funding, networking, and investment opportunities.

Recommendations

Strengthen Workforce Development & Talent Pipelines

- Expand collaboration between companies and VET institutions.

- Promote Dual VET participation through targeted outreach and relevance.
- Increase remote-work options and structured internships.
- Improve gender diversity in technical roles and leadership.

Support Scaling & Market Diversification

- Provide tailored business development, export support, and acceleration programs.
- Help micro- and small firms move beyond early-stage operations.
- Promote ICT growth outside Prishtina to reduce geographic disparities.

Promote Technology Adoption & Upskilling

- Expand training in AI/ML, Data Science, Cloud, IoT, and next-gen networking.
- Support certification programs and continuous professional development.
- Encourage adoption of modern frameworks and cloud infrastructure.

Expand Financial & Institutional Support

- Create accessible funding mechanisms and targeted grants for micro- and small firms.
- Strengthen public–private partnerships for mentorship, networking, and market expansion.
- Enhance programs like Superpuna with incentives for skills and internationalization.

Facilitate Internationalization & Market Entry

- Support companies through trade missions, fairs, B2B matchmaking, and chamber partnerships.
- Provide guidance on client acquisition, marketing, and cybersecurity readiness.
- Broaden diversification across client sectors to strengthen resilience.

Promote Inclusiveness & Sustainable Growth

- Increase women’s participation in ICT, especially in technical and leadership roles.
- Align VET and workforce development with innovation, sustainability, and youth employment goals.
- Ensure ICT supports both economic and social development through inclusive strategies.

Introduction

The Kosovo IT Barometer is a key tool for assessing export capacity, workforce trends, and sectoral challenges within the ICT industry in Kosovo. The Kosovo IT Barometer 2023–2024 was designed to provide a comprehensive overview of the current state, opportunities, and challenges of the country's information technology and creative services sector. The Kosovo IT Barometer has been conducted annually by STIKK since 2014, and the 2025 edition covers developments in both 2023 and 2024. The current edition also includes a dedicated section on the implementation, awareness, and impact of Dual VET across the private ICT sector.

At a time when digital transformation is reshaping economies worldwide, Kosovo's ICT industry has become one of the most dynamic areas of growth, driven by young companies, entrepreneurial founders, and a workforce that is increasingly engaged in global markets. The purpose of this report is to capture the perspectives of business leaders and professionals across the sector, in order to better understand how firms operate, what services they provide, and what barriers they face in pursuing sustainable growth.

The study is particularly timely given the rapid evolution of digital tools, the growing importance of artificial intelligence, and the increasing reliance on cross-border markets. With more than half of surveyed companies founded in the past five years, the findings highlight a sector that is not only expanding quickly but also still in the process of consolidating its place in the national economy. The dominance of small and micro enterprises reflects both the accessibility of ICT entrepreneurship and the challenges of scaling beyond initial stages. By examining workforce structures, revenue distribution, and client acquisition strategies, the report offers valuable insight into the daily realities of companies working in Kosovo's technology-driven industries.

Equally important, the Barometer sheds light on issues that extend beyond individual businesses and into the broader policy and institutional environment. Questions of access to skilled labor, collaboration with educational institutions, and participation in vocational training programs underscore the link between the ICT sector and the country's human capital development. At the same time, findings on exports, international partnerships, and reliance on major cloud providers emphasize Kosovo's increasing integration into global digital markets.

Data for the 2025 Kosovo IT Barometer were collected through a quantitative, self-completion online survey (CAWI) conducted between 4 August and 14 September 2025. The sample comprised registered ICT-related businesses from the Kosovo Business Registration Agency database, with invitations sent to 396 consenting companies, of which 115 completed the questionnaire. To ensure confidentiality, no company names or contact details were collected, and all data were securely stored and accessible only to the research team. A number of participants either did not complete the questionnaire or discontinued it due to its length or lack of time, reflecting the limitations inherent to self-administered surveys.

Data processing and validation were conducted using NField and SPSS software under strict quality standards, and daily reviews were performed by the Data Processing Manager and Project Manager. While the study followed internationally recognized research protocols, limitations included potential non-response and the inability to verify completion for some self-administered questionnaires.

By combining employer perspectives with sector-level analysis, this report aims to provide stakeholders—including business leaders, policymakers, educators, and international partners—with a grounded evidence base to inform decision-making. It highlights not only the strengths and resilience of the ICT sector, but also the systemic gaps in talent, financing, and institutional support that must be addressed for long-term competitiveness. Ultimately, the Kosovo IT Barometer seeks to serve as both a mirror of current realities and a roadmap for future action, pointing to the opportunities, risks, and priorities that will shape the sector's trajectory in the years to come.

Methodology

The overall purpose of the study was to analyze skills gaps and workforce trends in Kosovo's ICT sector through the annual Kosovo IT Barometer. The 2025 edition, implemented by STIKK under the KSV/021 – Skills for Sustainable Jobs in Kosovo project funded by LuxDev, covering developments from 2023 and 2024, including a dedicated focus on the implementation, awareness, and impact of Dual Vocational Education and Training (Dual VET) within the private ICT sector.

The objectives of the study were to assess key developments in Kosovo's ICT sector during 2023 and 2024, with a focus on identifying workforce trends, export capacity, and sectoral needs. In addition, the study aimed to evaluate the level of awareness, participation, and impact of Dual Vocational Education and Training (Dual VET) among ICT companies. Based on these findings, the study sought to generate evidence-based policy and training recommendations to support skills development and the sustainable growth of the sector.

The research approach was quantitative survey – self completion interview, through the Computer Aided Web Interview (CAWI).

Data collection took place between 4 August and 14 September, spanning a total of 42 days.

The sample frame consisted of registered businesses engaged in ICT-related activities, as listed in the database of the Kosovo Business Registration Agency. A total of 1,528 contacts were identified, consisting of phone numbers and email addresses. While many businesses had both types of contact information registered in the database, a smaller share had only either a phone number or an email address.

Since consent had not been obtained from these businesses to send them invitations by email, they were first contacted by phone to request their agreement to participate in the study. Following this process, invitations containing the link to the questionnaire were sent to 396 businesses that provided consent. Out of these, 115 completed the questionnaire, while 222 opened it but exited at the introduction, and 59 started answering questions but did not finish the interview. It is important to note that 32% of the businesses (n=485) declined to participate in the survey. The

remaining contacts could not be reached for several reasons: 130 businesses did not answer or had no phone number, 444 phone numbers were incorrect or unavailable, and a small number of businesses did not receive the invitation because they provided an invalid email address or experienced technical issues with the communication application used to send the invitation. In addition, some businesses were very small, declared themselves not eligible for this type of survey, or were no longer operational.

Ensuring the safety and confidentiality of the data provided by participating companies was a key priority of the study. To guarantee anonymity, no company names or contact details were collected during the interviews, meaning that responses could not be traced back to individual businesses. All collected data were securely stored on our servers under strict data protection protocols. Access to both the survey data and the contact list used for outreach was limited exclusively to STIKK and Kantar, safeguarding the privacy of companies and the integrity of the information shared.

The questionnaire included both core questions on the main research topics and additional questions on respondent and company profiles. On average, interviews lasted around 15 minutes. The content of the questionnaire focused on the range of services offered by companies, covering both technology and creative services, as well as workforce dynamics, forms of support and collaboration, participation in the Dual VET program, and the role of government and institutional support.

Kantar Index Kosova carries out research according to internationally recognized quality standards. Kantar Index Kosova complies with ESOMAR International Code of Marketing and Social Research Conduct, to other quality guidelines adopted by ESOMAR, and to the Quality Standard of the Gallup International Association.

The CATI software used for data processing was NField. Apart from managing the questionnaire and data processing, the program is capable of logic and skip patterns, time stamps for start and end of interview. The data was processed during the interview, since the interviews were conducted using online. The data, as submitted at the end of each interview, were reviewed on a daily basis by the Data Processing Manager and the Project Manager. The final data set was validated in SPSS for Windows version 26 software, in Index Kosova offices by the Data Processing Manager and the Project Manager assigned for this project.

Limitations and Challenges of Method

A key limitation of the anonymous self-completion approach was the inability to verify whether respondents who claimed to have completed the questionnaire actually did so. Some participants forgot to complete it after agreeing to the invitation, while reminder calls occasionally caused irritation, leading to refusal. Additionally, several respondents discontinued the questionnaire, citing its length or lack of time.

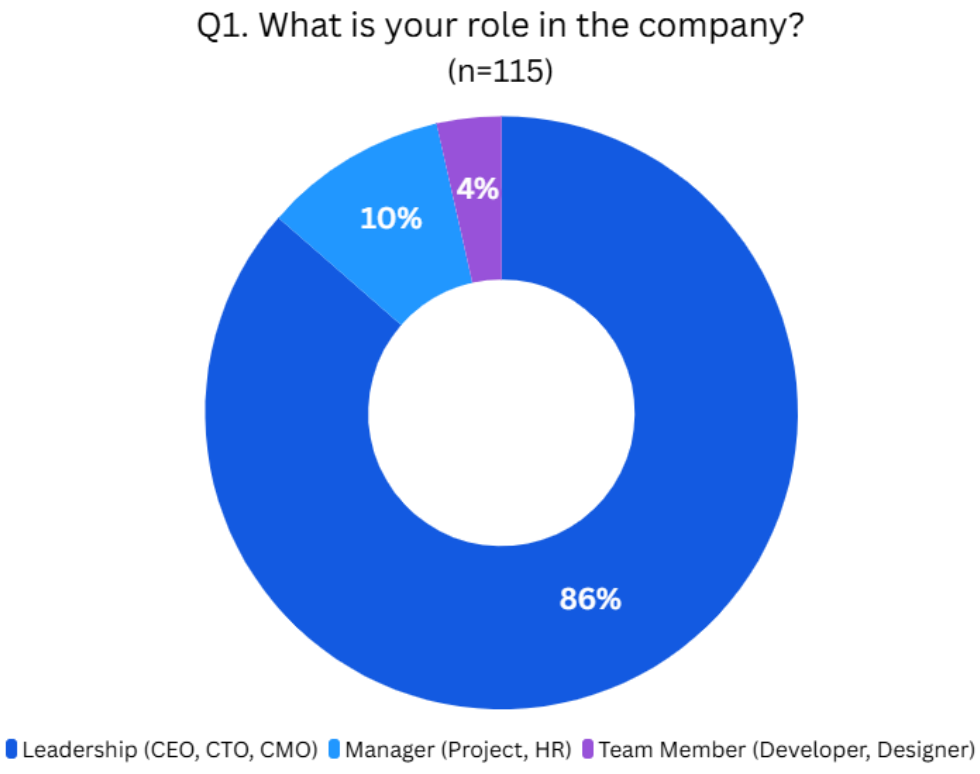
Note: ** indicates low sample size — results are not statistically significant due to low sample size and high confidence interval.*

Findings

Section 1: Respondent Profile

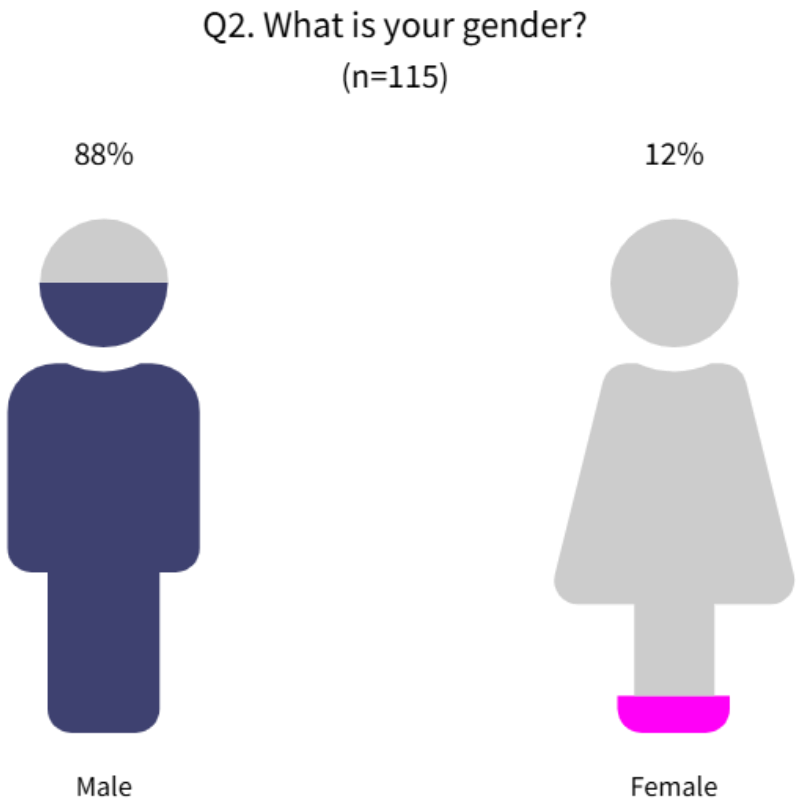
The survey results show that the overwhelming majority of respondents (86%) are business owners, underlining that the data largely reflects the views of company leaders and primary decision-makers. Managers account for 10% of the responses, bringing in perspectives from those with executive or operational responsibilities, while professionals represent 4%, contributing insights from specialized roles such as developers and designers.

This distribution emphasizes that the survey primarily captures leadership and business-owner perspectives, particularly CEOs and entrepreneurs directly involved in strategic decision-making. At the same time, the smaller share of managers and professionals indicates that operational and technical perspectives are represented to a more limited extent, positioning the findings as a strong reflection of employer and leadership priorities.



Graph 1. Role of respondents in the company

Within the sample of surveyed employers, the vast majority of respondents are male (88%), while only 12% are female. This distribution shows that the data primarily reflects the views of male representatives, with female respondents forming a smaller share of the sample. An interesting insight is that the vast majority of business owners, entrepreneurs, and managers in this sector are male.

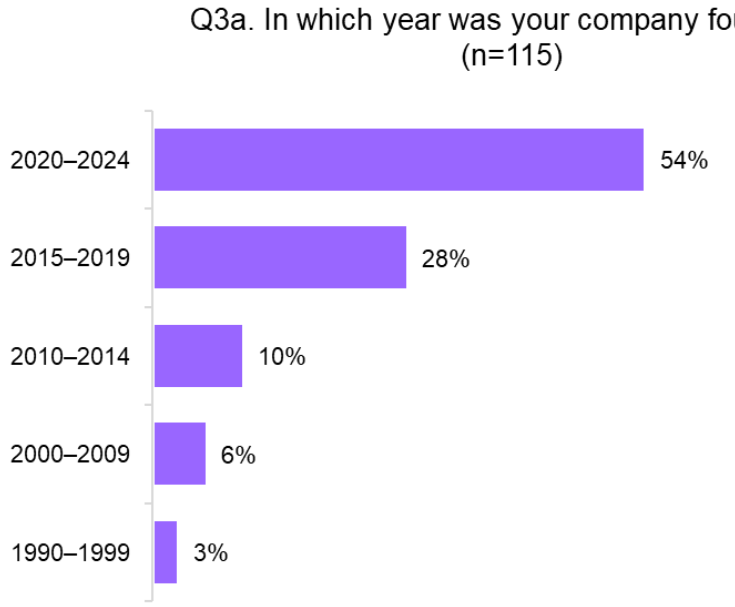


Graph 2. Gender of respondents

Section 2: Company Profile

More than half of the businesses that participated in the survey (54%) were established recently, between 2020 and 2024, highlighting the strong presence of young enterprises in the sample. Another 28% were founded between 2015 and 2019, while only 10% trace their establishment to the 2010–2014 period. A smaller share of companies we're founded between 2000 and 2009 (6%), and just 3% have been operating since the 1990s. This distribution suggests that the majority of represented businesses are relatively new in the market, with limited participation from

older and more established firms, meaning that the findings largely reflect the perspectives and challenges of younger enterprises.

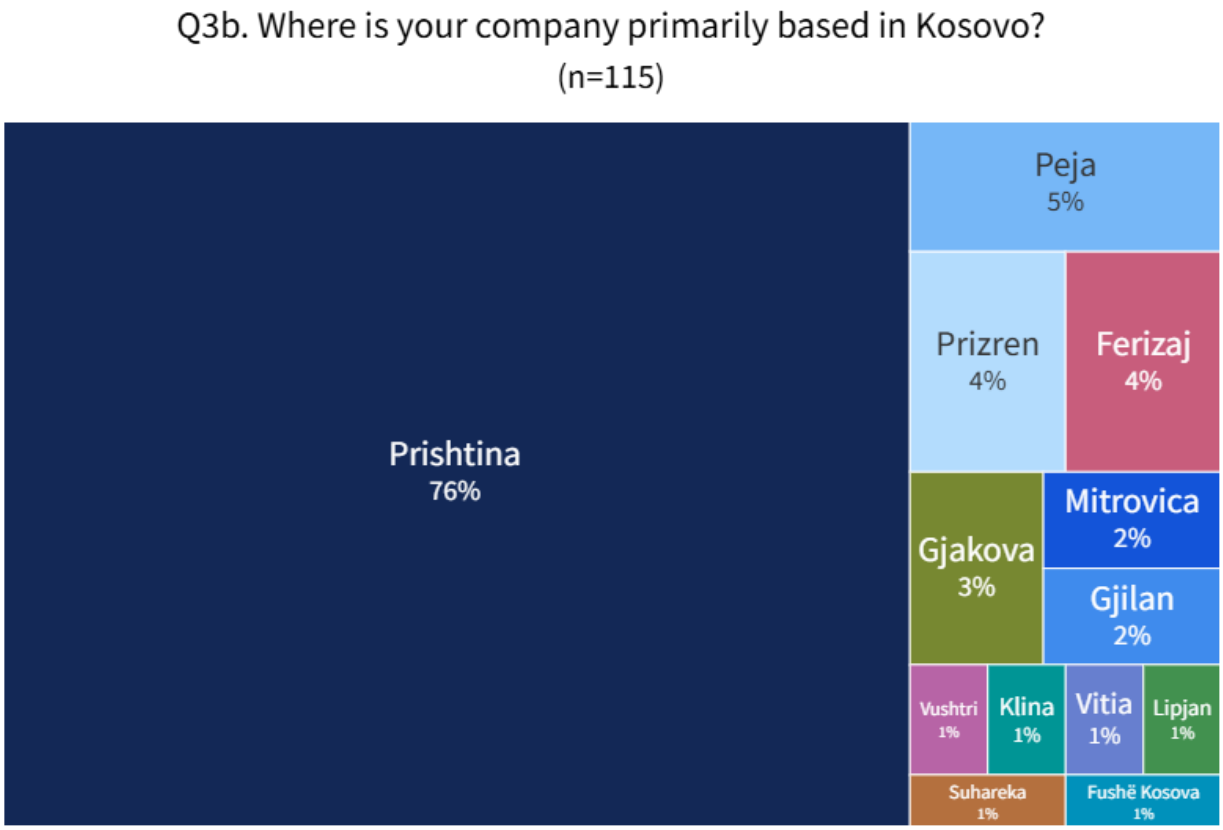


Graph 3. Year of company establishment

The geographical distribution of surveyed businesses shows a strong concentration in Prishtina, with slightly more than three quarters of companies. This demonstrates that the majority of responses reflect the perspectives of businesses located in the main economic and administrative center of the country. Beyond Prishtina, representation is more fragmented, with Peja (5%), Prizren (4%), and Ferizaj (4%) making up the next largest shares. Gjakova (3%), Mitrovica (2%), and Gjilan (2%) also contribute, while several municipalities, including Vushtrri, Klina, Vitia, Lipjan, Suhareka, and Fushë Kosova, each account for only 1% of the sample.

When cross-referencing the geographical distribution of ICT companies with their main focus areas (Q5), a clear pattern emerges. The majority of businesses located outside Prishtina are predominantly engaged in Technology Services, including software development, IT support, and web-based solutions. This demonstrates that technology-oriented activities form the backbone of the ICT industry across these key regional centers. In contrast, Creative Services—covering areas such as marketing, design, and branding—show a very limited presence beyond the capital, with only one reported case in Klina. Overall, the data indicate that while Prishtina remains the central hub for both technology and creative sectors, regional ICT ecosystems are primarily driven

by Technology Services, with Creative Services still representing a marginal share outside the capital.

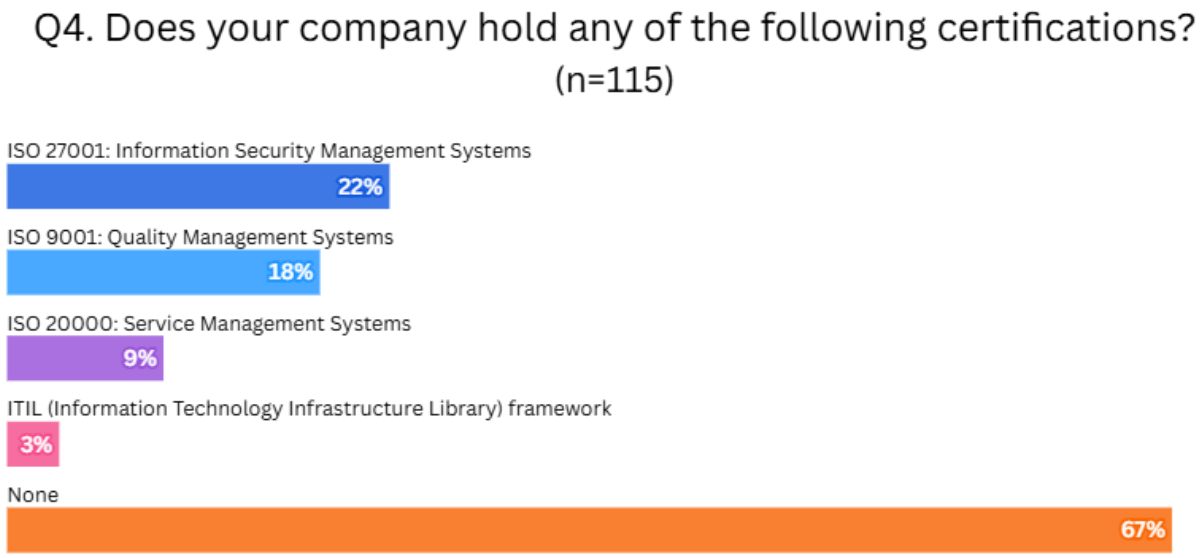


Graph 4. Region of company headquarters

Two-thirds of firms in the sample report none of the listed certifications (67%), pointing to limited adoption of formal quality, service, or security standards. Among those that are certified, ISO 27001 (Information Security Management Systems) is the most common (22%), followed by ISO 9001 (Quality Management Systems) at 18%. Far fewer companies hold ISO 20000 (Service Management Systems) (9%) or follow the ITIL framework (3%). Overall, certification is concentrated in information security and general quality management, while standards related to service management and IT frameworks are much less widespread among the surveyed firms.

The overall data suggest a clear connection between certification and export activity. Companies with established quality or information security standards, particularly ISO 9001 and ISO 27001, are more likely to operate internationally, reflecting stronger organizational capacity and

compliance with global client requirements. Notably, over 80% of firms holding these certifications are engaged in exporting, underscoring the close link between certification and global market participation. In contrast, certifications such as ISO 20000 or ITIL appear only among a few firms, and their association with export activity is not significant. It is also worth noting that several firms without any formal certification have nonetheless engaged in export activities, indicating that while certifications may facilitate international competitiveness, they are not a prerequisite for exporting. Overall, the findings suggest that certifications strengthen readiness for international markets, but a portion of Kosovo's ICT firms continue to export successfully even without them.



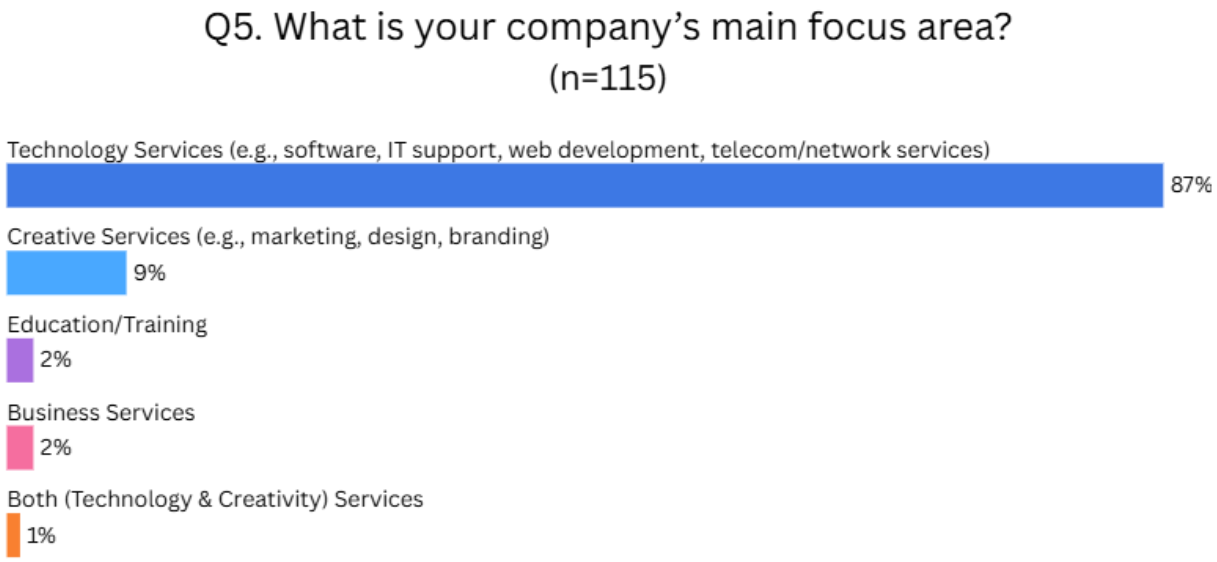
Graph 5. Company certifications holdings

The large majority of surveyed businesses (87%) operate in the field of technology services, covering areas such as software development, IT support, web development, and telecom/network services. Creative services, including marketing, design, and branding, represent 9% of companies, while only small shares focus on education and training (2%) or business services (2%). An even smaller fraction (1%) report combining technology and creative services as their primary activity.

This strong dominance of technology-focused firms shows that the sample is highly concentrated in the ICT sector, with other industries playing a comparatively minor role. As a result, the insights gathered are largely influenced by the challenges, opportunities, and growth patterns of

technology-driven businesses, while the perspectives of companies outside this sector are less present in the overall findings.

When examining the correlation between salaries and the company's main focus areas, the data shows that *Digital Marketing & Growth* and *Digital Creativity & Content* within Technology Services has the largest share (more than half) of lower salary levels (below 1001 euros), while *Technical & Engineering* and *Leadership* roles are more frequently (over 60%) associated with higher salaries (more than 1000 euros). In Creative Services, the highest salaries (more than 1000 euros) are found in *Business Operations* (around 50%), whereas *Product & Management* includes a higher proportion of lower-paid positions (below 1001 euros). Although some differences can be noted, they do not indicate a clear or consistent relationship between salaries and company focus areas.

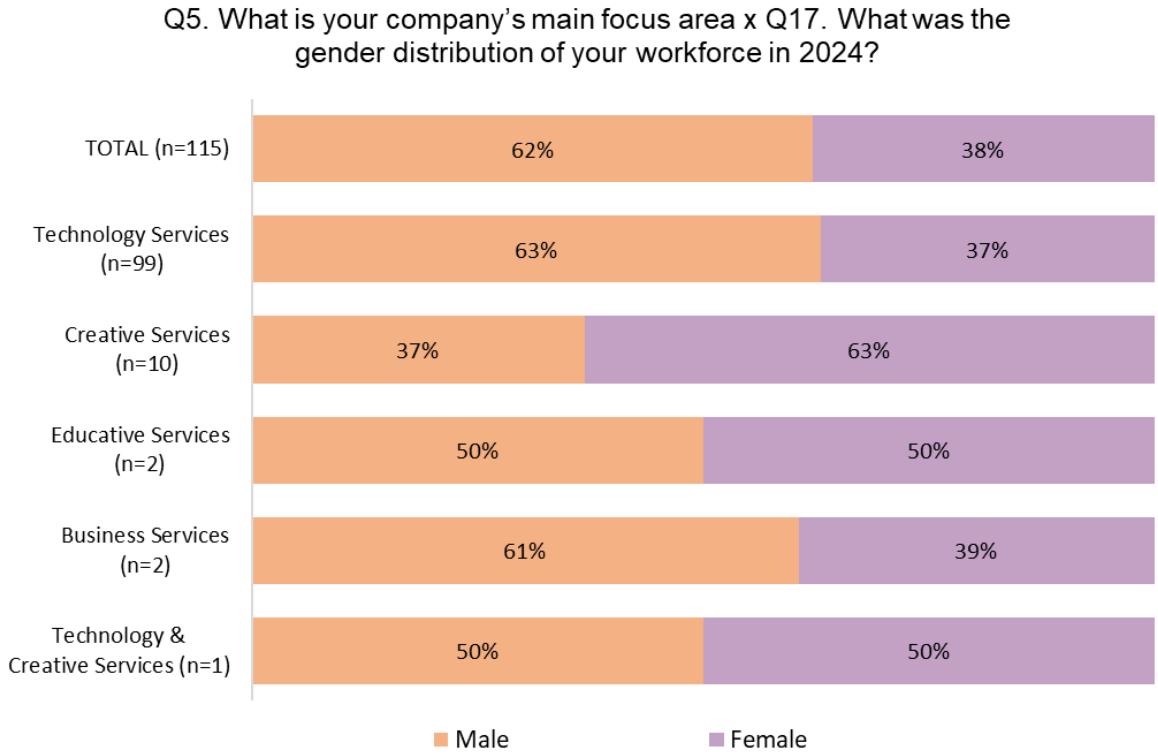


Graph 6. Company's main focus area

The cross-tabulation between company focus area and gender distribution shows that male employees make up a larger share across most sectors, particularly within Technology Services—the dominant area of Kosovo's ICT industry. In contrast, Creative Services, which account for 9% of businesses and include marketing, design, and branding, display a higher proportion of female employees. This indicates that while the sector remains largely male-dominated, creative and content-oriented fields provide more balanced gender representation.

Additionally, higher-paying roles are more common in technical and leadership positions, while creative and marketing roles—where female representation is higher—tend to fall within lower salary ranges.

** However, results for Creative and other smaller sectors should be interpreted with caution due to the very low sample size, which limits statistical reliability and may not reflect actual trends.*



Graph 7. Gender Distribution of Workforce by Company Focus Area (2024)

Section 3: Service Offered

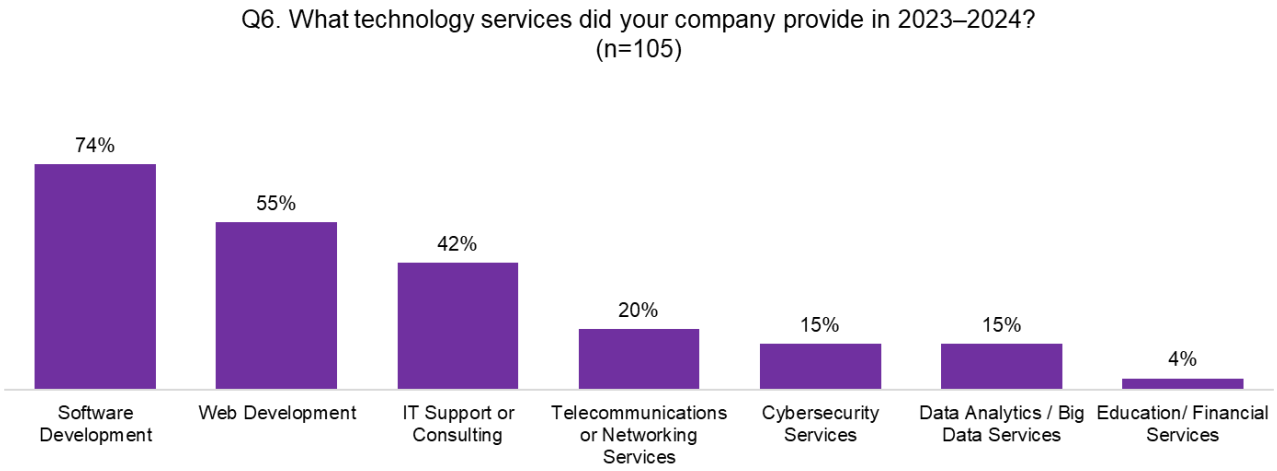
Technology Services

Among the companies that reported technology as their main focus area, respondents were asked to specify which services they provide. Notably, these technology-focused firms make up the vast majority of the sample — around 90% (105 out of 115 companies) — which means that the findings largely reflect the perspectives and service portfolios of businesses operating in the tech sector. The majority indicated software development (74%), followed by web development (55%)

and IT support or consulting (42%). Smaller shares of companies offer telecommunications or networking services (20%), cybersecurity services (15%), and data analytics/big data services (15%). Only a few companies reported involvement in education or financial services (4%).

This distribution shows that most technology-oriented businesses in the sample are concentrated in core digital services such as software and web development, while more specialized areas like cybersecurity, big data, and telecom are less frequently provided.

As a result, the survey findings primarily reflect the perspectives of firms engaged in foundational IT activities, with comparatively fewer insights from companies working in advanced or niche segments of the digital sector.

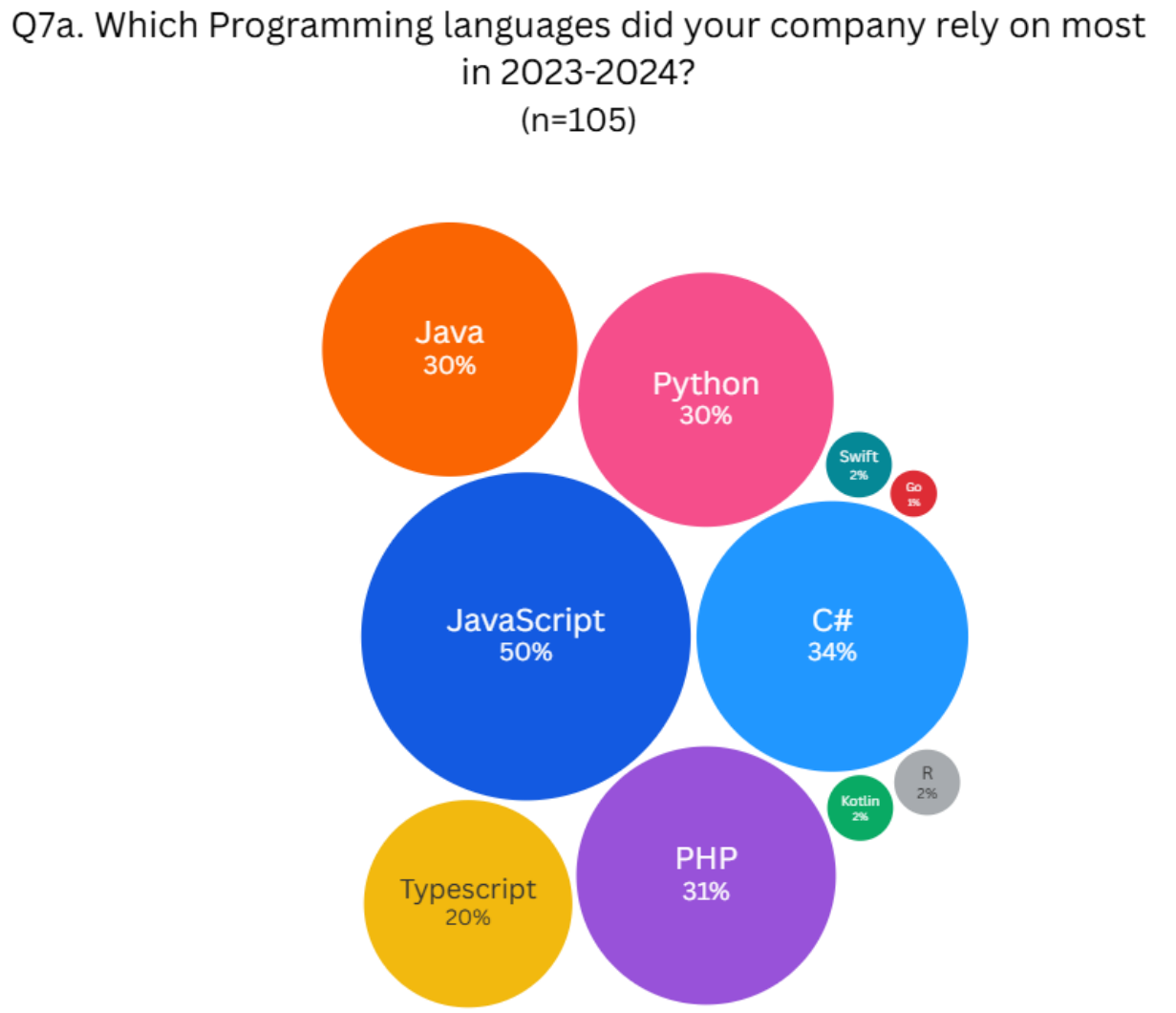


Graph 8. Technology services provided in 2023–2024

When asked about the programming languages their companies rely on most, the top three mentioned were JavaScript (50%), C# (34%), and PHP (31%). This confirms JavaScript's central role in software and web development, while C# and PHP stand out as widely adopted backend and application development tools across companies. Python (30%) and Java (30%) also remain important, further illustrating a diverse range of programming skills present in the sector, and Typescript (20%) reflects its growing adoption in front-end and full-stack development.

Similarly to the previous IT Barometer 2021–2022, JavaScript remains the leading language, reaffirming its dominant role in web and software development, but it is now closely followed by C#, which has gained greater prominence in backend and application development. A notable new entry in the latest IT Barometer 2023–2024 is Typescript, which has started being adopted

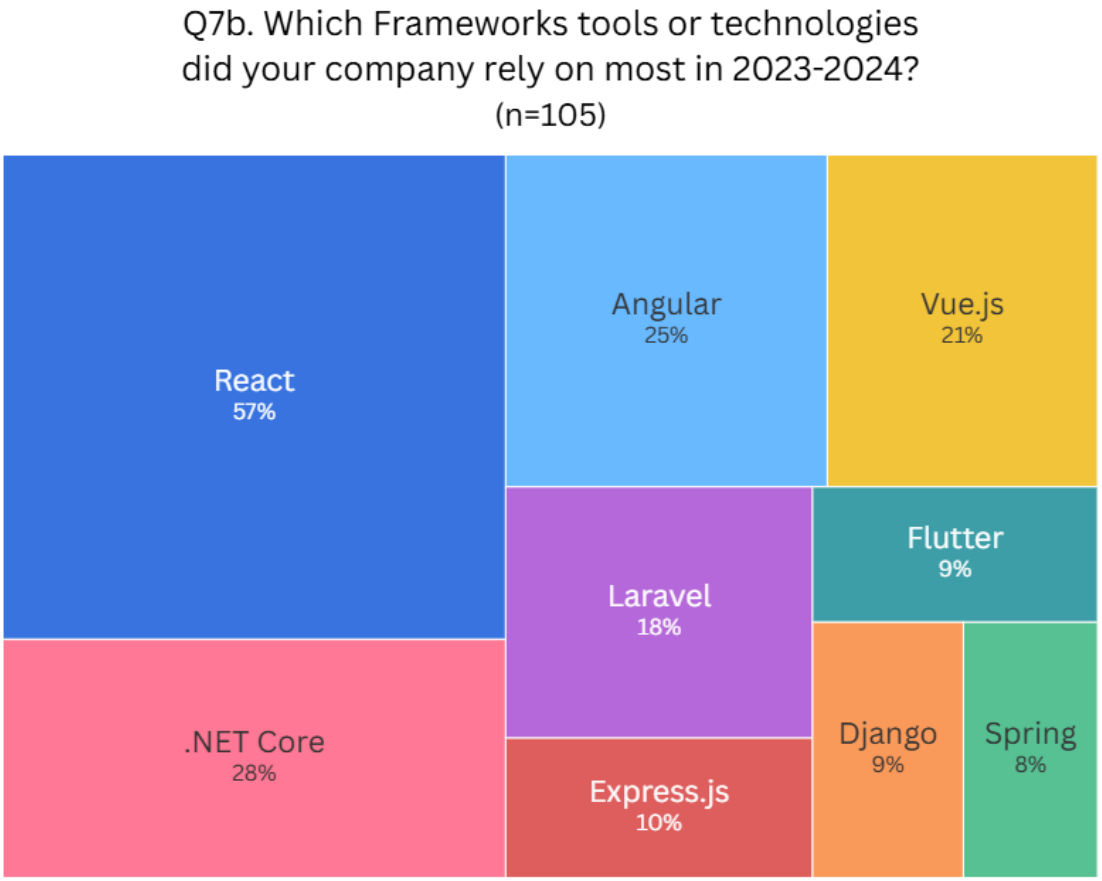
by companies and currently ranks as the fifth most used programming language, indicating growing interest in more structured and type-safe approaches to JavaScript development.



Graph 9. Programming languages used most by companies (2023–2024)

When asked about the frameworks and technologies their companies rely on most, the top three mentioned were React (57%), .NET Core (28%), and Angular (25%). This confirms React's leading role in front-end development, while .NET Core and Angular demonstrate that many firms also build on strong backend and enterprise-ready frameworks. Vue.js (21%) and Laravel (18%) also remain well represented, reflecting their popularity for flexible and efficient development across different project types.

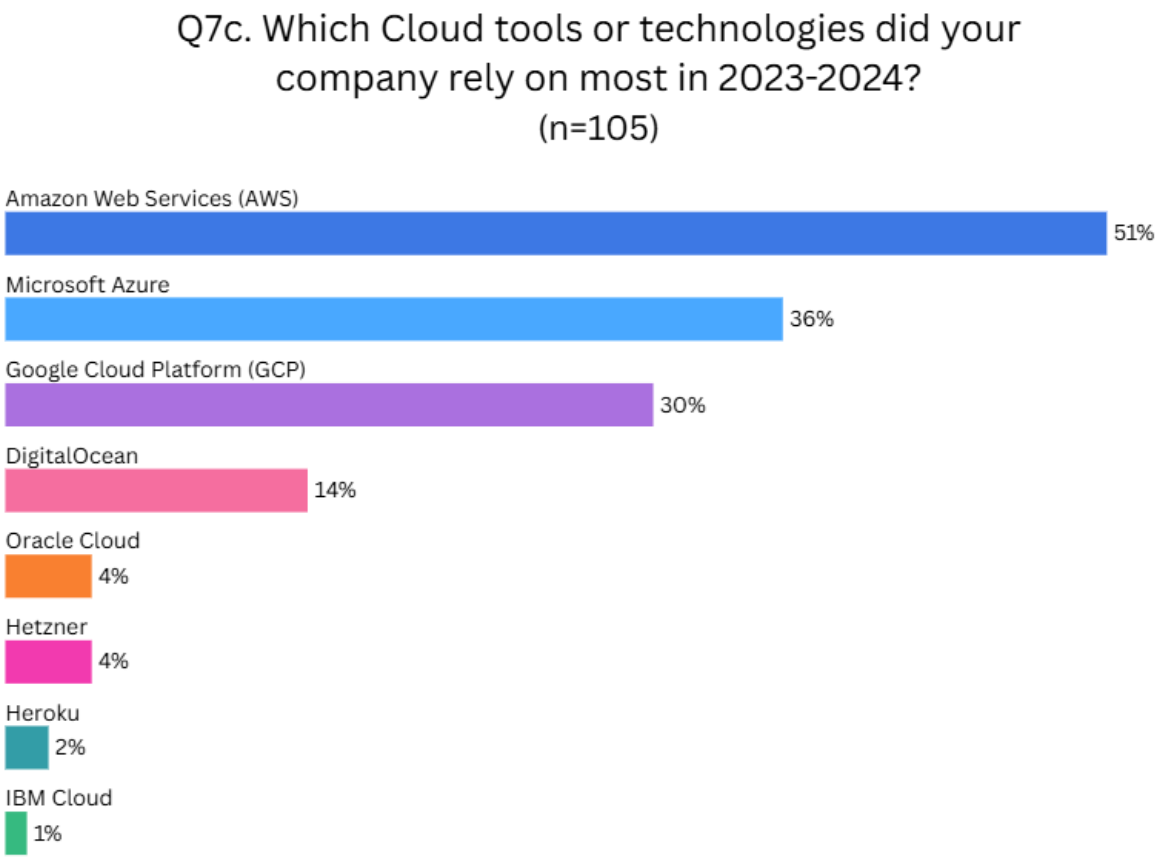
Less commonly used frameworks include Express.js (10%), Flutter (9%), Django (9%), and Spring (8%), which are applied in more specialized contexts. Overall, the results highlight that companies in the sample prioritize modern JavaScript-based frameworks alongside robust enterprise solutions, with React standing out as the most dominant tool in their development practices.



Graph 10. Frameworks, tools, and technologies used most by companies (2023–2024)

More than half of the surveyed companies reported relying on Amazon Web Services (AWS) (51%), making it the most widely used cloud platform in the sample. Microsoft Azure (36%) and Google Cloud Platform (30%) follow as the other two leading choices, confirming their role as the main alternatives for businesses adopting large-scale cloud solutions. DigitalOcean is used by a smaller share of firms (14%), while only a limited number reported relying on Oracle Cloud (4%), Hetzner (4%), Heroku (2%), or IBM Cloud (1%).

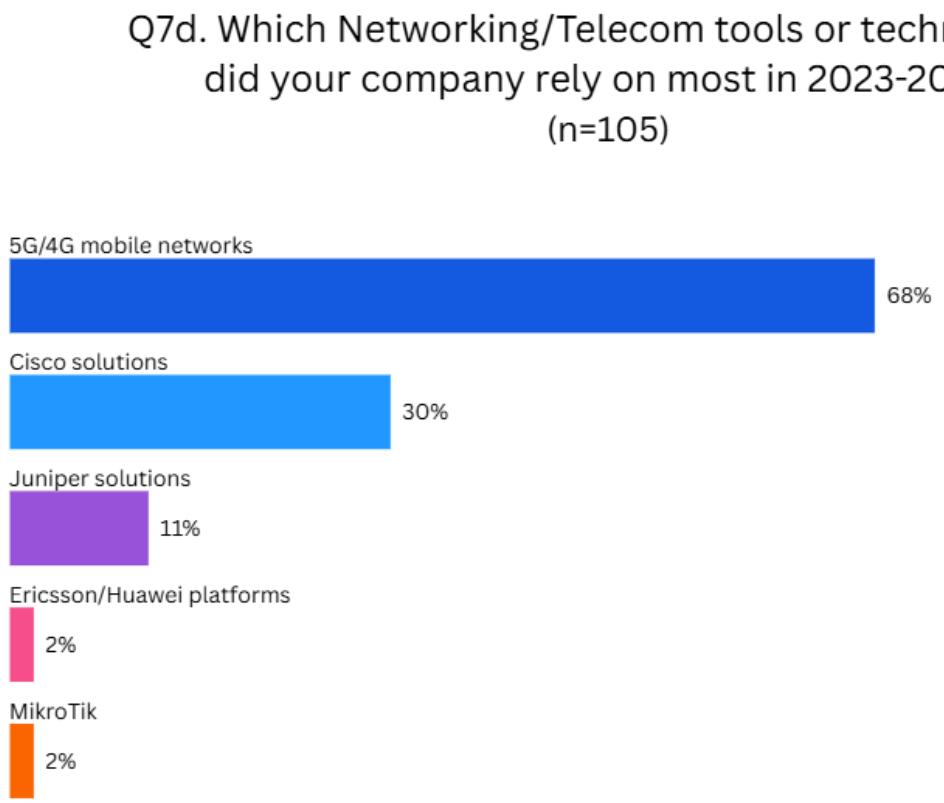
The distribution clearly shows that the vast majority of companies in the sample depend on the three dominant global providers—AWS, Azure, and GCP—highlighting a strong reliance on well-established cloud ecosystems that offer scalability, security, and comprehensive services. Meanwhile, smaller or more specialized platforms remain only marginally adopted.



Graph 11. Cloud tools and technologies used most by companies (2023–2024)

Most respondents reported relying on 5G/4G mobile networks (68%), highlighting the central role of mobile connectivity in supporting day-to-day business operations. Cisco solutions (30%) represent the second most common choice, pointing to widespread adoption of enterprise networking infrastructure. Juniper solutions (11%) are also among the top three, though with a more limited share compared to Cisco. By contrast, only a very small portion of companies depend on Ericsson/Huawei platforms (2%) or MikroTik (2%).

This distribution shows that the majority of companies in the sample rely primarily on mobile networks, complemented by Cisco's enterprise-grade solutions and, to a smaller degree, Juniper. Adoption of other vendor-specific networking platforms remains minimal.

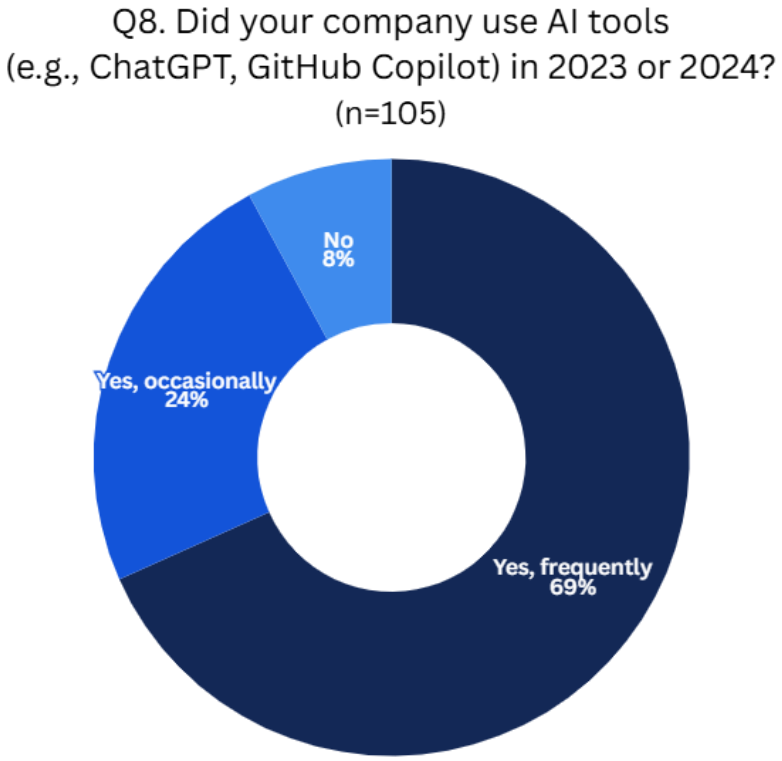


Graph 12. Networking/Telecom tools and technologies used most by companies (2023–2024)

As part of the survey with technology services companies, respondents were asked whether they had integrated AI tools such as ChatGPT or GitHub Copilot into their operations during 2023–2024. The results show that the vast majority already make frequent use of these tools (69%), while a notable share use them occasionally (24%). Only a small fraction reported not using AI at all (8%).

This demonstrates that within the technology services sector, AI adoption has rapidly advanced from limited experimentation to becoming an established element of daily business practice. The findings underline the importance of AI in driving productivity, efficiency, and innovation across companies working in this field.

Compared to the previous IT Barometer 2021–2022, where the use of Artificial Intelligence in product and service development was still relatively limited, in this IT Barometer the data show a remarkable shift. In the earlier edition, most technology-oriented companies primarily relied on web-based development technologies, with AI seen as an emerging tool used by only a small share of firms. In this edition, however, almost all respondents (92%) reported that they use AI in their services or operations, reflecting a major transformation in the sector.

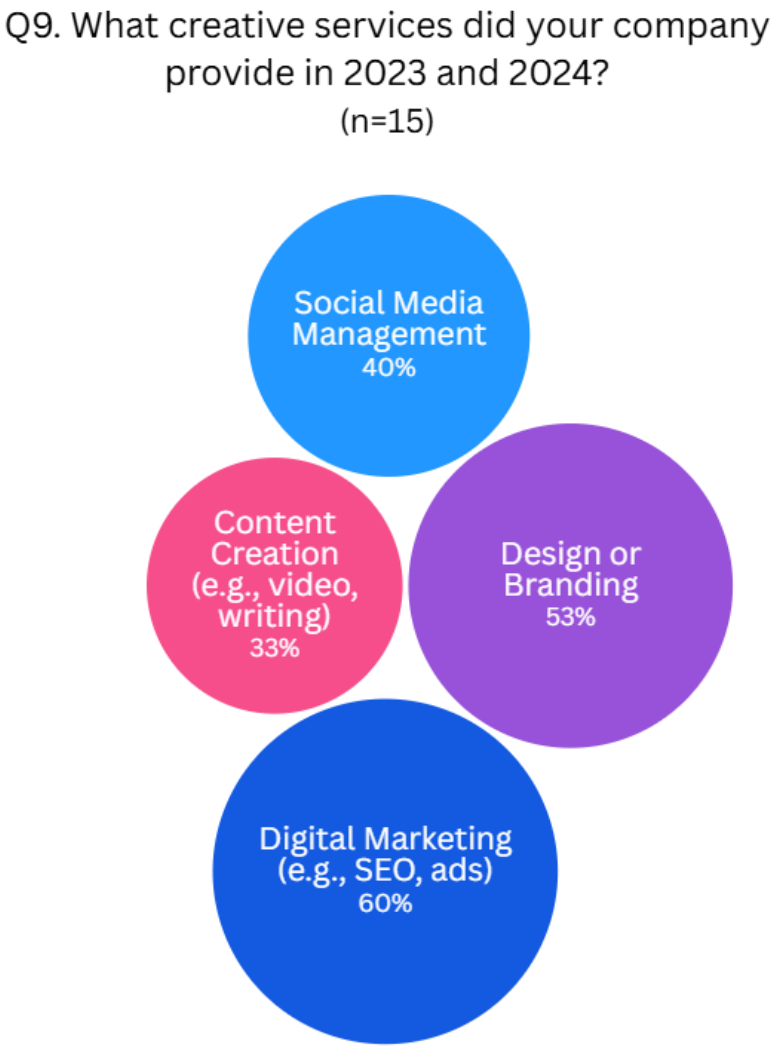


Graph 13. Use of AI tools in 2023–2024 (Technology Services)

Creative Services

Among respondents engaged in creative services — who make up only around 10% of the total sample (15 out of 115 companies) — the most frequently mentioned activities were digital marketing (60%) and design or branding (53%). Social media management (40%) was also a common service, while content creation such as video production or writing (33%) played a notable but smaller role.

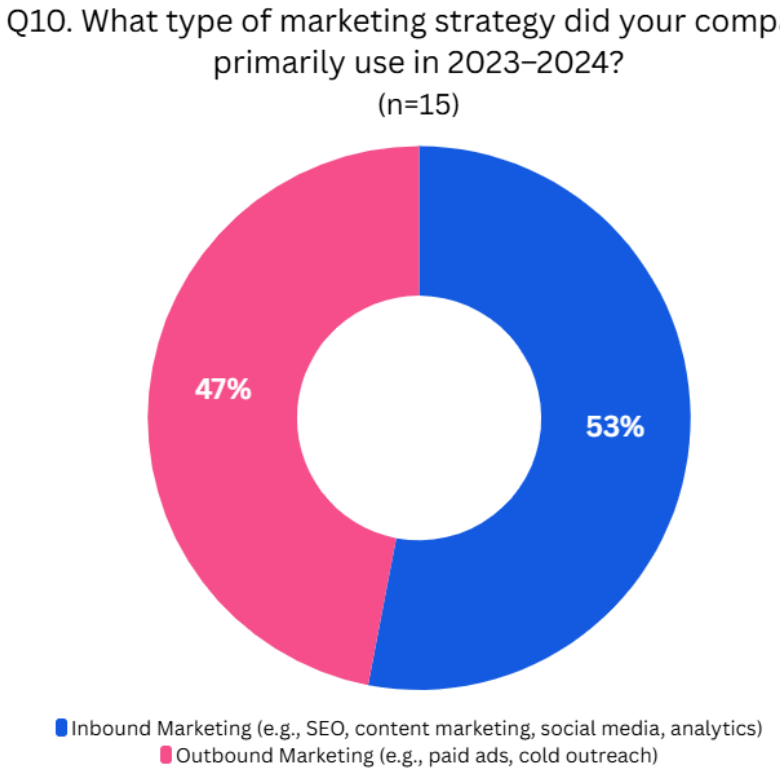
These results indicate that within the creative services sector, marketing-oriented activities represent the largest share of work, while design and branding also stand out as a strong area of focus. By contrast, more specialized areas like content creation are present but less prominent.



Graph 14. Creative services provided most by companies in 2023–2024

Creative services companies were asked about the type of marketing strategy they relied on most during 2023–2024. A slight majority reported using inbound marketing approaches (53%), such as SEO, content marketing, social media, and analytics, while outbound marketing (47%), including paid ads and cold outreach, was almost equally common.

The near balance between inbound and outbound strategies suggests that creative firms employ a mixed approach to reach audiences, with no single strategy dominating the sector. This indicates that while many companies are leaning into digital, content-driven, and organic methods to attract clients, a significant share continue to depend on more direct advertising and outreach techniques to generate business.



Graph 15. Marketing strategies used most by companies in 2023–2024

Among creative services companies using inbound marketing (n=8), the top three platforms were Google Analytics, SEMrush (25%), and HubSpot (13%). This shows that firms adopting inbound strategies focus primarily on performance tracking and search optimization, with some also relying on automation and CRM solutions.

For companies using outbound marketing (n=7), the most commonly mentioned tools were Google Ads (43%), LinkedIn Sales Navigator (43%), and Meta Ads (Facebook/Instagram). These results indicate that outbound strategies are centered on paid digital advertising and lead generation, with LinkedIn in particular serving as a key channel for reaching business clients.

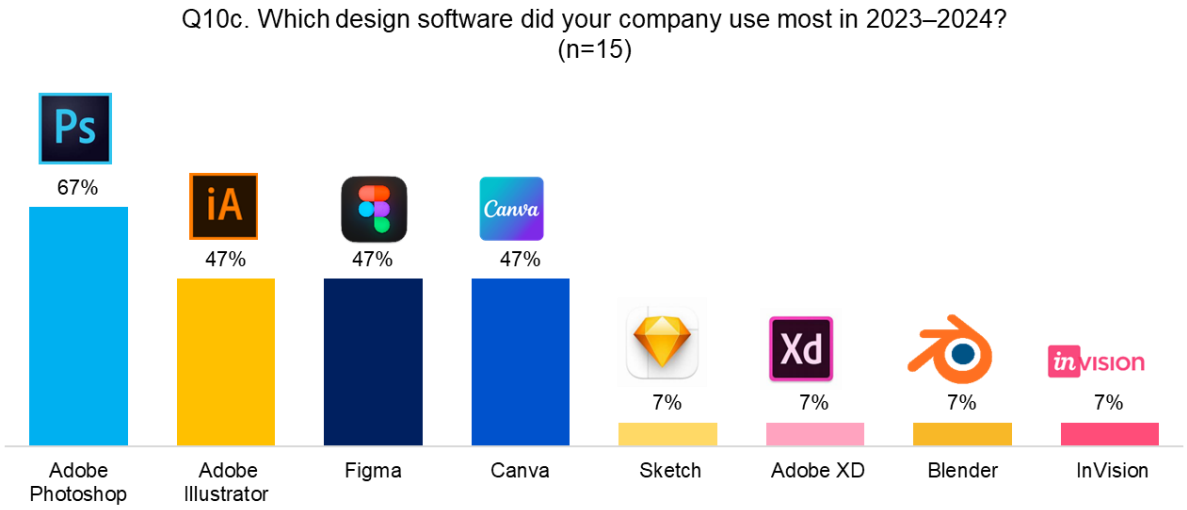
Overall, the findings highlight that creative firms prioritize analytics and SEO tools for inbound marketing, while outbound strategies are dominated by digital ad platforms, especially Google and LinkedIn.

Table 1. Inbound and outbound marketing platforms used most by companies in 2023–2024

Q10a.b. Which inbound and outbound platforms or tools did your company use most in 2023–2024? (n=15)			
Inbound Platforms (n=8)		*Outbound Platforms (n=7)*	
Google Analytics	75%	LinkedIn Ads	57%
SEMrush	25%	Google Ads	43%
Mailchimp	25%	Meta Ads (Facebook/Instagram)	43%
HubSpot	13%	LinkedIn Sales Navigator	43%

Creative services companies reported using a mix of professional and accessible design tools, with Adobe Photoshop (67%) emerging as the most widely used. Adobe Illustrator (47%) and Figma (47%) also stand out among the top three, reflecting their strong role in both professional design work and collaborative interface development. Canva (47%) was also widely mentioned, showing its appeal as an easy-to-use platform, though it ranks just behind the three leading tools in terms of emphasis.

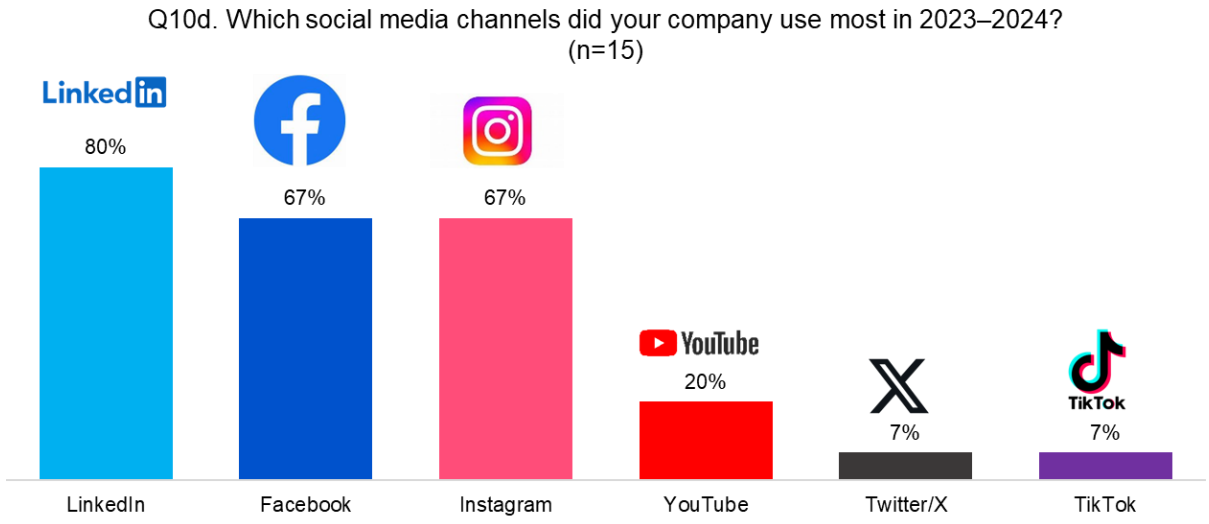
Overall, the results suggest that creative companies rely primarily on Adobe Photoshop, Illustrator, and Figma as their core toolkit, while also adopting complementary solutions like Canva for efficiency and other specialized tools such as Sketch, Adobe XD, Blender, and InVision for specific project needs.



Graph 16. Design software used most by companies in 2023–2024

Creative services companies reported relying on a variety of social media platforms to promote their work and engage with audiences. LinkedIn (80%) was by far the most frequently used channel, reflecting its importance for professional networking and reaching business clients. Facebook (67%) and Instagram (67%) followed as the next most common platforms, showing that many firms also rely on consumer-oriented networks to build visibility and connect with wider audiences.

By contrast, YouTube (20%) was used less often, while Twitter/X (7%) and TikTok (7%) were only mentioned by a small share of respondents. Overall, the findings highlight that creative companies prioritize LinkedIn, Facebook, and Instagram as their main social media mix, balancing professional networking with broader outreach channels.

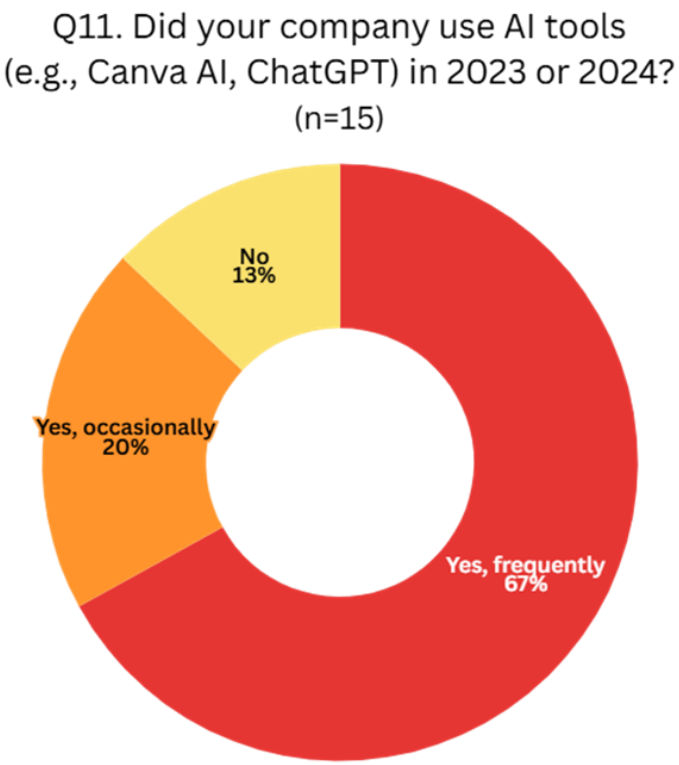


Graph 17. Social media channels used most by companies in 2023–2024

Within the creative services sector, most companies reported making frequent use of AI tools such as Canva AI or ChatGPT (67%), while another share use them occasionally (20%). Only a small minority (13%) indicated that they do not use AI tools at all. Compared with technology companies, where AI adoption is even more widespread, creative firms show a slightly lower but still very high rate of use — highlighting that while both sectors embrace AI, technology companies tend to integrate these tools more comprehensively.

These findings show that AI adoption is already well embedded in the workflows of creative service providers, where such tools support design, content creation, and efficiency in daily operations. The reliance on AI also reflects how creative companies are adapting quickly to new technologies, using them not only to enhance productivity but also to expand the range of services they can offer clients.

Although the share of creative firms using AI has clearly increased compared to the previous IT Barometer 2021–2022, this difference should not be interpreted as statistically significant, as the number of companies in this category remains relatively small.



Graph 18. Use of AI tools in 2023–2024 (Creative Services)

Within content and creativity, the top three AI applications were brainstorming and idea generation (85%), content creation (77%), and image and graphic generation (54%). This shows that AI is most often used as a support tool to accelerate ideation and streamline creative production.

In marketing and sales, companies leaned most heavily on AI for advertising copywriting (69%), market research and analysis (62%), and SEO (46%). These findings highlight how AI is being applied to strengthen both the creative and analytical dimensions of marketing.

For software development and IT, the leading uses were code generation and assistance (54%), debugging and code review (46%), and technical documentation (46%). This indicates that while AI is not the primary focus for creative firms in IT, it plays a meaningful role in supporting technical processes.

Finally, in business operations and strategy, the top three applications were data analysis and reporting (77%), financial analysis and forecasting (31%), and human resources and recruitment

(15%). These results point to AI's growing importance in helping companies extract insights, plan strategically, and optimize resource management.

Table 2. Purposes for which AI tools were used most by companies (Creative Services)

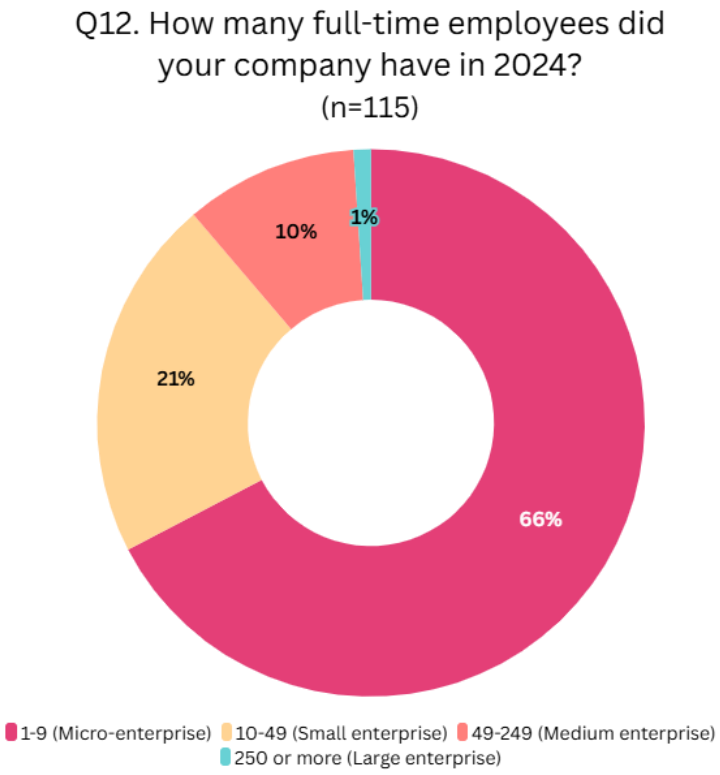
Q11a. For which of the following purposes did your company use AI tools? (n=15)		
Content & Creativity	Content Creation	77%
	Image & Graphic Generation	54%
	Brainstorming & Idea Generation	85%
	Summarization	39%
	Video or Audio Creation	23%
Software Development & IT	Code Generation & Assistance	54%
	Debugging & Code Review	46%
	Software Testing & Quality Assurance	39%
	Technical Documentation	46%
Marketing & Sales	Marketing & Advertising Copywriting	69%
	Market Research & Analysis	62%
	SEO (Search Engine Optimization)	46%
	Customer Service & Support	23%
	Lead Generation & Sales Support	23%
Business Operations & Strategy	Data Analysis & Reporting	77%
	Human Resources & Recruitment	15%
	Financial Analysis & Forecasting	31%
	Internal Training & Knowledge Management	15%

Section 4: Workforce Dynamics

The findings show that most surveyed companies are micro-enterprises (66%), employing between 1–9 people, while 21% are small firms with 10–49 employees. Together, these account for nearly nine in ten respondents, confirming that the sample is largely composed of very small

businesses. Only 10% are medium-sized and 1% large enterprises, indicating that the results mainly reflect the perspectives of smaller firms rather than larger organizations.

A comparison between the IT Barometer 2021–2022 and the latest IT Barometer 2023–2024 reveals a clear shift in the size distribution of ICT companies in Kosovo. While the sector was previously characterized by small-scale operations, the newest results show that it is now even more dominated by micro-enterprises (up to 10 employees), which have increased from 48% to 66% of all firms. The share of small enterprises (up to 50 employees) has declined notably from 32% to 21%, and medium and large enterprises (more than 50 employees) have remained nearly unchanged, moving slightly from 12% to 11%. These findings confirm that most ICT businesses continue to operate with very limited staff, and expansion beyond small-scale operations remains relatively uncommon. Overall, Kosovo's ICT sector continues to be characterized by a predominance of small firms, reflecting a growing concentration of micro-enterprises as the main drivers of market activity.



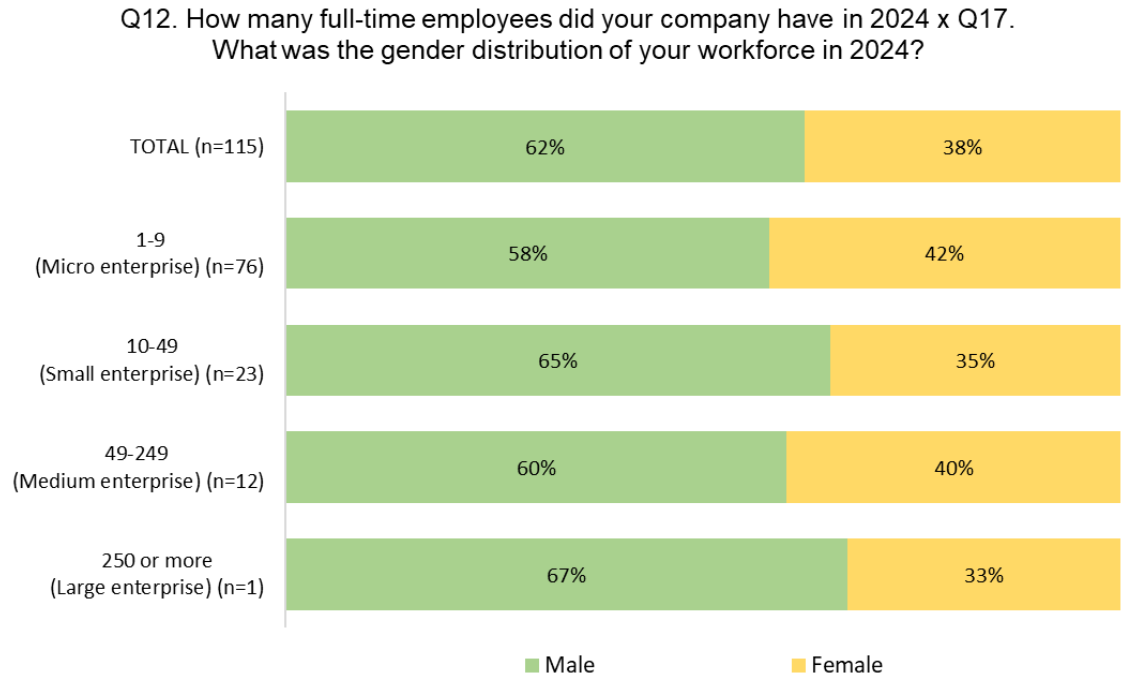
Graph 19. Company size by number of full-time employees (2024)

The cross-analysis between company size and gender distribution reveals that men represent a larger share of employees across all company sizes, with slightly higher male dominance in small and large enterprises. Female representation is somewhat stronger in micro-enterprises, which make up around two-thirds of all ICT companies in Kosovo, suggesting that the growing prevalence of smaller firms may be supporting gradual progress toward gender balance.

Data from the Kosovo Tax Administration (2024) reinforces this finding, showing that in the Information and Communication sector, 64% of employees are male and 36% are female. The gender balance among younger age groups (15–44) aligns closely with our survey results-around four out of ten employees are female and is slightly more balanced in the 15–24 age band, which shows the highest parity. However, as age increases (45–65+), the gap widens considerably, with only about three out of ten employees being female.

This trend indicates that while younger generations are fostering a more balanced workforce, the ICT sector overall remains male-dominated, highlighting the need for ongoing efforts to strengthen gender equity as the industry evolves.

**Results for the enterprises should be interpreted with caution due to low sample sizes, which may limit statistical reliability.*



Graph 20. Gender Distribution of Workforce by Company Size (2024)

The cross-tabulation between company size (based on the number of full-time employees) and main focus area shows no statistically significant relationship (p=0.53). Across all size categories — from micro to large enterprises — the majority of firms operate within Technology Services, while Creative Services, Educational Services, and Business Services appear only marginally. This indicates that the distribution of focus areas remains largely consistent regardless of company size. In other words, whether a company is small or medium-sized does not meaningfully affect the type of services it provides, confirming that no significant correlation exists between these two variables.

Table 3. Relationship between company size and main focus area

Q12. How many full-time employees did your company have in 2024 x Q5. What is your company's main focus area? *(p > 0.05)				
Company Services	1-9 (Micro-enterprise) (n=76)	10-49 (Small enterprise) (n=24)	49-249 (Medium enterprise) (n=12)	250 or more (Large enterprise) (n=1)
Technology Services	84%	92%	92%	100%
Creative Services	12%	4%	-	-
Educational Services	1%	4%	-	-
Business Services	1%	-	8%	-
Technology & Creative Services	1%	-	-	-

The cross-tabulation between company size and export activity shows no statistically significant relationship. While a higher share of small and medium enterprises report exporting compared to micro-enterprises, these differences are not strong enough to indicate a meaningful association. This suggests that the likelihood of exporting products or services does not depend on the number of full-time employees a company has.

Table 4. Relationship between company size and export activity

Q12. How many full-time employees did your company have in 2024 x Q21. Did your company export any products or services in 2023 or 2024? *(p > 0.05)				
Export	1-9 (Micro-enterprise) (n=76)	10-49 (Small enterprise) (n=24)	49-249 (Medium enterprise) (n=12)	250 or more (Large enterprise) (n=1)
Yes	62%	83%	83%	100%
No	34%	17%	17%	-
Prefer not to say	4%	-	-	-

The correlation between company size and revenue shows a clear and statistically significant relationship (p = 0.000005). The results indicate that micro-enterprises are most represented in the lowest revenue category (up to 50,000 EUR), while small enterprises most often fall within the 250,000–1 million EUR range. Medium-sized companies, although fewer in number, tend to report revenues above 1 million EUR, a pattern also seen among large enterprises. Respondents who selected *"prefer not to say"* generally did not provide revenue data. Overall, the correlation confirms that company size is closely linked with revenue levels, and this association is statistically significant.

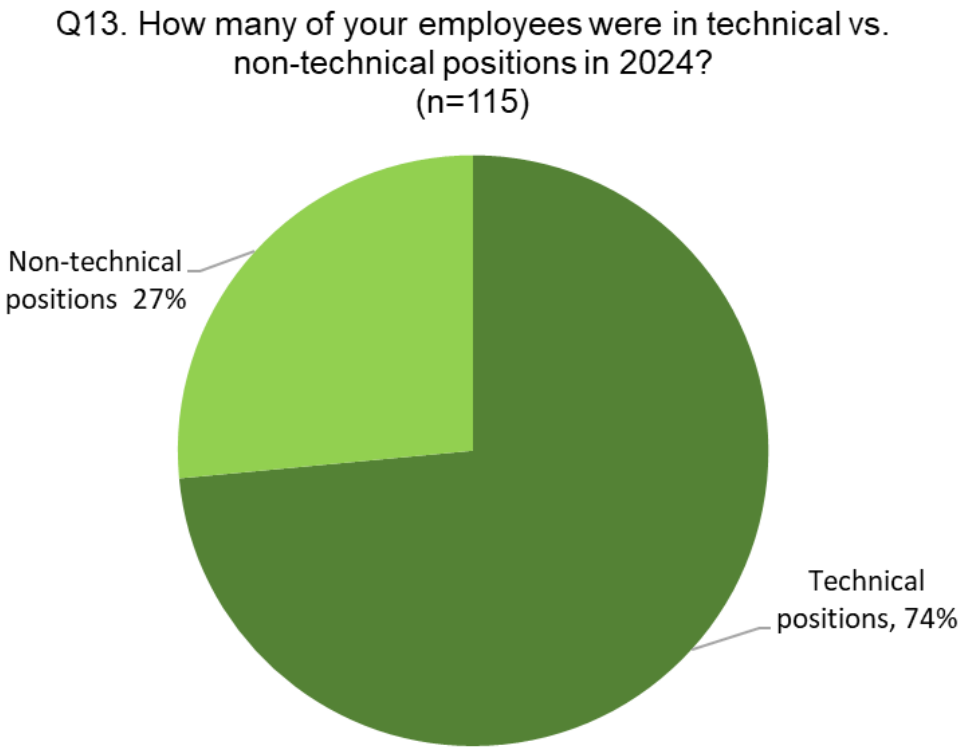
Table 5. Relationship between company size and revenue levels

Q12. How many full-time employees did your company have in 2024 x Q24. What was your approximate revenue in 2024? *(p < 0.05)				
Revenue	1-9 (Micro-enterprise) (n=76)	10-49 (Small enterprise) (n=24)	49-249 (Medium enterprise) (n=12)	250 or more (Large enterprise) (n=1)
<50,000 EUR	40%	-	8%	-
50,000-250,000 EUR	29%	13%	-	-
250,001-1,000,000 EUR	5%	54%	17%	-
>1,000,000 EUR	-	25%	58%	100%
Prefer not to say	26%	8%	17%	-

When respondents were asked about the number of employees in technical and non-technical positions, they provided figures for each category within their company. Overall, based on the

total sample of 115 companies, 74% of employees hold technical positions, while 27% work in non-technical roles.

**Due to low sample sizes in certain industries results should be interpreted with caution, as they are not statistically significant and may not fully represent overall industry trends.*



Graph 21. Number of employees in technical vs. non-technical positions (2024)

The wage distribution across Kosovo's ICT sectors highlights a clear divide between technical or leadership roles and creative or marketing positions. Employees earning above €1,000 are mainly in Technical & Engineering (67%), Leadership (66%), and Data & AI (47%), which also account for the highest shares in the >€3,000 wage range, reflecting the premium placed on specialized and strategic roles.

In contrast, lower wages below €1,000 are concentrated in Digital Creativity & Content (75%), Digital Marketing & Growth (73%), and Sales & Customer Relations (64%), showing that creative, marketing, and client-facing positions remain less financially competitive.

Overall, the data emphasize that technical, data-driven, and leadership roles command the highest pay within Kosovo's ICT sector.

Comparing 2021-2022 IT Barometer and the 2023-2024 results, salaries in Technical & Engineering and Leadership sectors show a clear increase, reflecting growing recognition of technical expertise and leadership responsibilities.

Product & Management has experienced moderate growth, indicating steady demand for managerial and product-focused roles. In contrast, Digital Marketing & Growth, Digital Creativity & Content, Sales & Customer Relations, and Business Operations have seen little change or slight decreases, suggesting compensation in these sectors has remained relatively stable.

While a direct comparison for the Data & AI sector is not possible, as these roles were not analyzed in 2021-2022, it is notable that in 2023-2024 Data & AI ranks among the top three highest-paid sectors, highlighting its increasing importance and value in the IT labor market and underscoring its expanding strategic importance.

This pattern is reinforced by wage data from the Kosovo Tax Administration (2024), which shows that the average gross wage in the Information and Communication sector is roughly 30% higher than the national average across all sectors. This wage advantage highlights the strong demand for ICT talent and helps clarify why salary growth is most evident in highly skilled and technically specialized roles.

Overall, the trend highlights stronger growth in traditionally higher-paying sectors, while other sectors remain largely stable.

The data indicate a clear relationship between company size and salary structure across all professional sectors. Micro-enterprises are mostly concentrated in lower pay brackets, while small and medium-sized firms show a gradual shift toward higher salary ranges. This upward trend is strongest in *Technical & Engineering, Data & AI, and Leadership* roles, where earnings increase consistently with company growth. By contrast, *Digital Marketing & Growth* and *Digital Creativity & Content* sectors show smaller pay differences, suggesting a more balanced distribution across firm sizes. Overall, as companies expand, they tend to offer more competitive salaries—although the strength of this association varies between sectors.

Table 6. Average monthly salary ranges by job function (2024)

Q14. What was the average monthly salary range for your staff in 2024? (n=115)									
	<500	501 - 1000	1001 - 1500	1501 - 2000	2001 - 2500	2501 - 3000	>3000	Prefer not to say	Not applicable
Technical & Engineering	10%	20%	26%	15%	7%	8%	5%	8%	2%
Product & Management	24%	26%	21%	9%	4%	4%	2%	8%	3%
Data & AI	30%	17%	19%	5%	6%	4%	6%	7%	5%
Digital Marketing & Growth	30%	32%	12%	6%	1%	4%	1%	7%	7%
Digital Creativity & Content	28%	37%	13%	3%	4%	3%	-	7%	7%
Sales & Customer Relations	28%	28%	10%	12%	5%	4%	1%	7%	6%
Business Operations	27%	21%	24%	8%	4%	4%	1%	8%	5%
Leadership	17%	13%	17%	8%	13%	7%	14%	8%	3%

When asked about their experience hiring skilled staff, the majority of respondents described the process as moderately difficult (55%), indicating that while firms were able to fill roles, it often required effort and persistence. Around a quarter of companies (25%) reported that hiring was hard, reflecting significant challenges in accessing the right talent. By contrast, only 20% of respondents said that finding skilled staff was easy, highlighting that straightforward recruitment was the exception rather than the rule. Taken together, the findings suggest that attracting qualified employees remains a notable challenge for most businesses. The fact that three out of four firms characterized hiring as either moderate or hard underscores the competitive environment for skilled talent and points to potential barriers such as limited candidate availability, high competition, or mismatches between job requirements and available skills.

In the previous IT Barometer (2021–2022), 74% of companies reported facing a shortage of skilled or qualified workers, indicating a structural challenge in recruiting adequately trained staff. In the 2023–2024 edition, the data show a similar situation, even though the question format has changed. Previously, the question offered only a yes/no response option, while in the latest survey, companies could choose between “hard,” “moderate,” and “easy.”

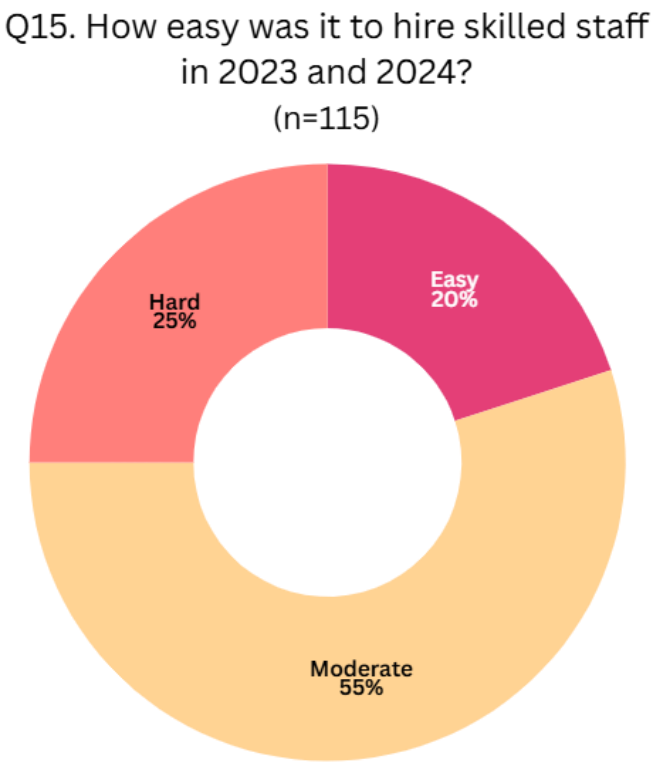
When combining the “hard” and “moderate” responses (80% in total), the results are comparable to the 74% reported in the earlier survey, confirming that the skills gap remains a persistent issue in Kosovo’s ICT sector. Although there are signs of slight improvement, with some companies finding hiring moderately challenging, the overall situation still reflects a continuing shortage of skilled professionals and a need for further workforce development and alignment between education and industry demands.

Recent trends in education and labor demand show both encouraging progress and ongoing challenges for Kosovo's ICT talent pipeline. According to the Kosovo Agency of Statistics, enrollment in ICT-related bachelor programs increased by about 20% between the 2021/2022 and 2023/2024 academic years, accompanied by a roughly 30% rise in ICT graduates over the same period. These gains, along with a more balanced gender composition among students, indicate growing interest and engagement in ICT fields.

However, the rapid pace of technological change means that formal education alone is not sufficient to fully prepare students for the labor market. This gap is reflected in survey findings, where nearly three-quarters of ICT companies invested in employee training and upskilling during 2023–2024. Despite this, 80% of companies-particularly larger firms and those engaged in exports-report increasing difficulty in finding skilled staff. Only micro-enterprises and companies with lower revenue levels perceive hiring as slightly easier.

Notably, companies that view Dual VET programs as highly effective are more likely to report fewer hiring challenges, suggesting that structured practical training plays an important role in bridging skills gaps.

Overall, while the education system is expanding its ICT output, Kosovo's labor market requires additional support to keep pace. Targeted investment in technical training and upskilling for students and recent graduates would help align emerging talent with current industry needs, ultimately easing recruitment pressures for ICT companies.



Graph 22. Ease of hiring skilled staff in 2023–2024

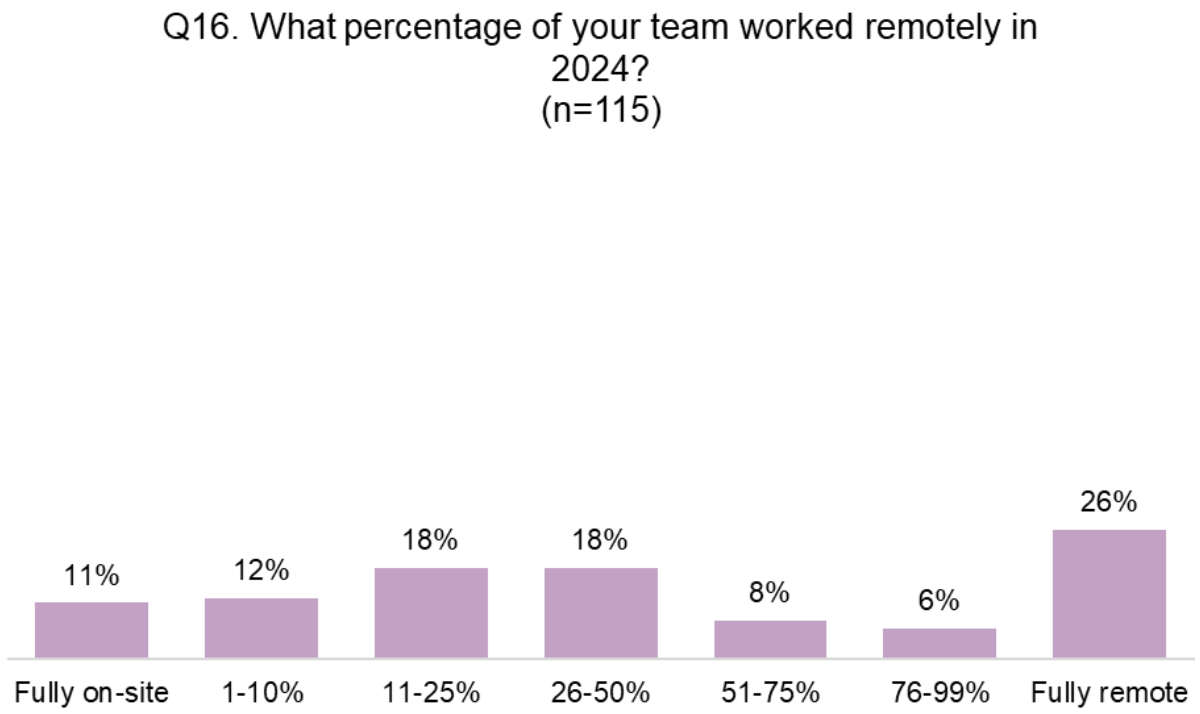
The results show that remote work has become a significant part of company operations. Over a quarter of respondents (26%) reported operating as fully remote teams, while smaller groups were split across hybrid arrangements. Specifically, 18% said that 11–25% of their staff worked remotely, and another 18% reported 26–50% remote work. A smaller portion (8%) had 51–75% of their teams remote, while 6% had 76–99% remote employees.

At the other end of the spectrum, 12% of firms had only 1–10% of staff working remotely, and 11% reported being fully on-site, showing that traditional work arrangements are still present but less common than flexible or remote-first setups.

Overall, the findings indicate that remote work is firmly embedded in company structures, with a strong shift toward fully remote operations (26%), while hybrid models (63%) remain widespread. A smaller share of firms continues to maintain a primarily on-site workforce (11%), suggesting that flexibility rather than uniformity defines workplace practices in 2024.

ICT companies offering mostly or fully remote work (76–100%) report greater ease in attracting skilled staff compared to those whose employees work primarily on-site (0–25% remote). This advantage stems from broader access to talent and alignment with the preferences of today's digital workforce. These findings highlight the need to strengthen ICT skill development, modernize vocational pathways, and equip young people and women with competencies that reflect the flexible and innovation-driven nature of the sector.

By developing a workforce that is adaptable, digitally skilled, and ready for both local and remote roles, Kosovo can enhance employment opportunities, foster inclusive economic growth, and strengthen its position in the global digital economy.



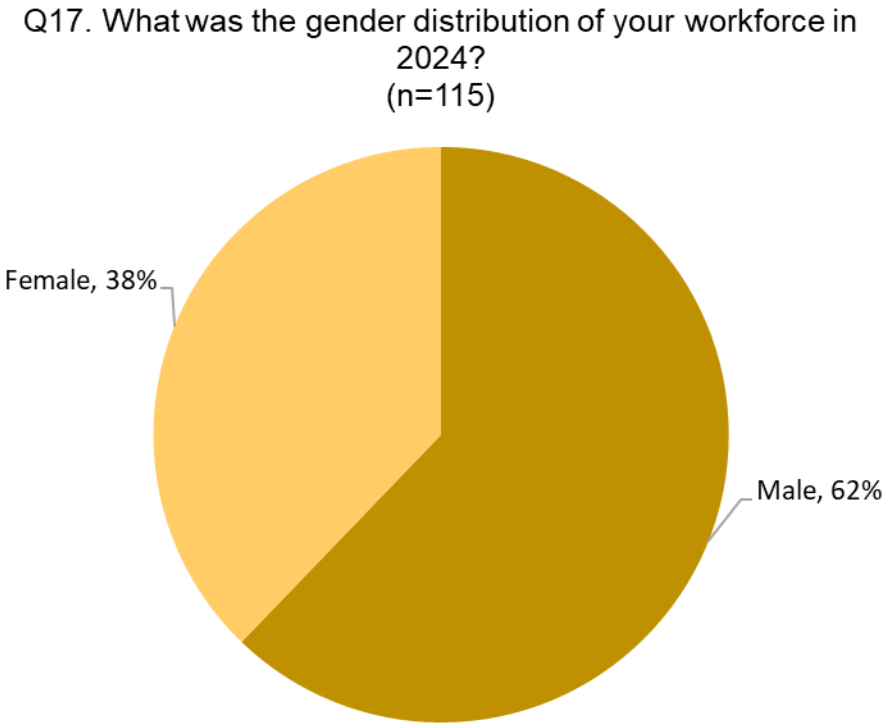
Graph 23. Share of teams working remotely in 2024

Among the 115 ICT companies surveyed, about two out of five employees are female (38%), showing a relatively strong interest of women in the ICT sector. This finding aligns closely with data from the Kosovo Tax Administration, which reports that in 2024, 64% of employees were male and 36% female in the Information and Communication sector. However, men still outnumber women in most companies, reflecting a common global pattern of male-dominated ICT workforces.

In the broader labor force, women face higher unemployment (18%) and a much lower employment rate (21%) compared with men (8% unemployment, 56% employment), according to the Kosovo Statistical Agency (Labor Force Survey 2024).

This persistent gender imbalance highlights the ongoing challenge of promoting diversity and inclusion and underscores the need for targeted initiatives to attract, retain, and support more female professionals in technology roles.

**Due to low sample sizes in certain industries results should be interpreted with caution, as they are not statistically significant and may not fully represent overall industry trends.*

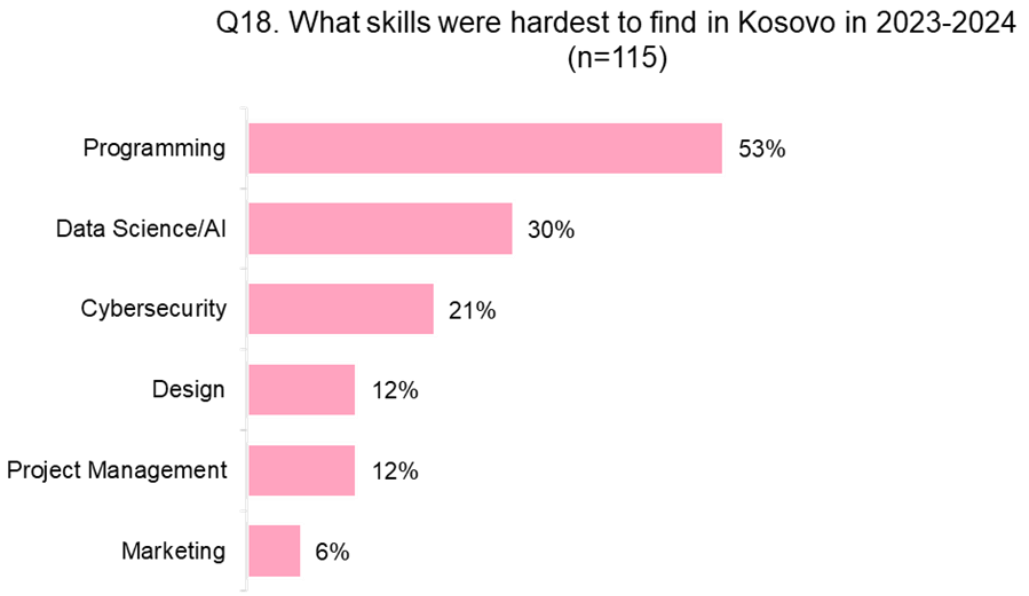


Graph 24. Workforce gender breakdown (2024)

Programming emerged as the most difficult skill to recruit, cited by 53% of companies, underlining a critical shortage in the country's tech workforce. Data Science and AI followed at 30%, reflecting rising demand for advanced analytics expertise. Cybersecurity was also highlighted as a key gap by 21%, pointing to concerns around protecting digital infrastructure.

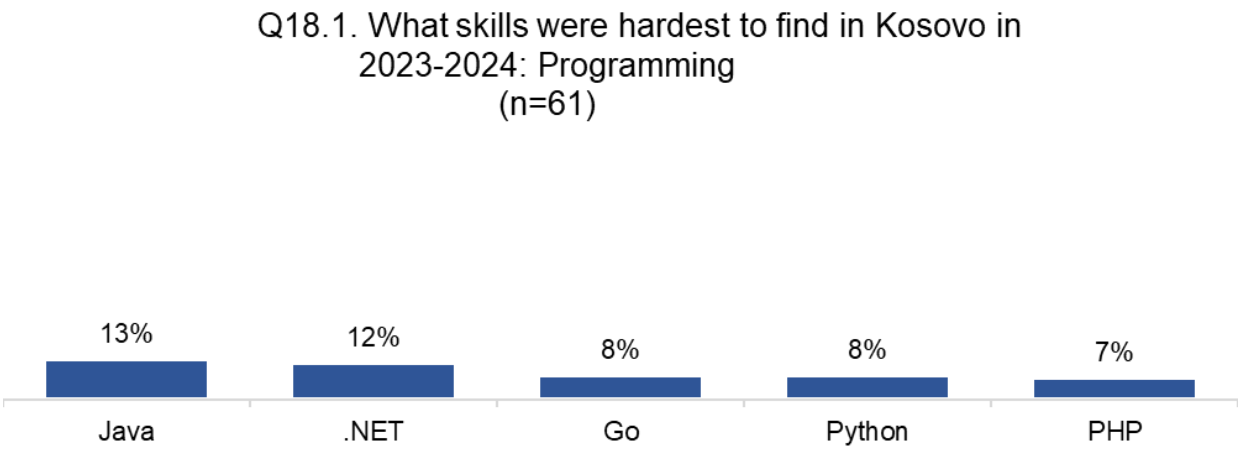
Beyond these technical fields, design and project management were each mentioned by 12%, while marketing was seen as less of a challenge (6%).

Taken together, the results show that firms in Kosovo face their greatest hiring struggles in specialized technical areas, especially programming, AI, and cybersecurity, while non-engineering roles present fewer difficulties.



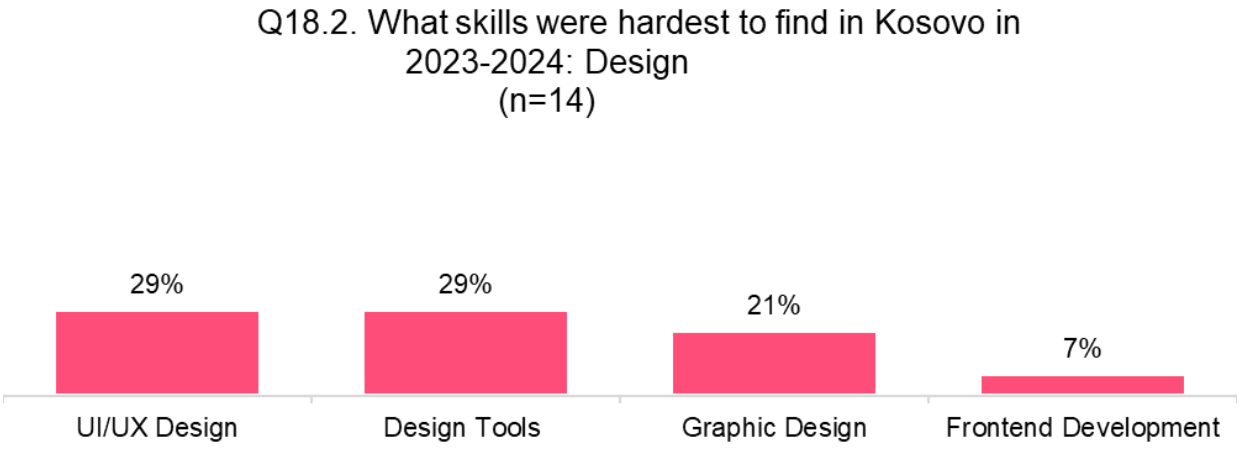
Graph 25. Skills hardest to find in Kosovo (2023–2024)

Among respondents who indicated programming skills were the hardest to find, shortages were spread across multiple languages. .NET (13%) and Java (12%) stand out as the most difficult to recruit for, highlighting demand for both enterprise and backend development expertise. Go follows (8%), reflecting the growing importance of modern, scalable systems. Python (7%) and Laravel (7%) were also identified, pointing to challenges in sourcing talent for data science, scripting, and web frameworks.



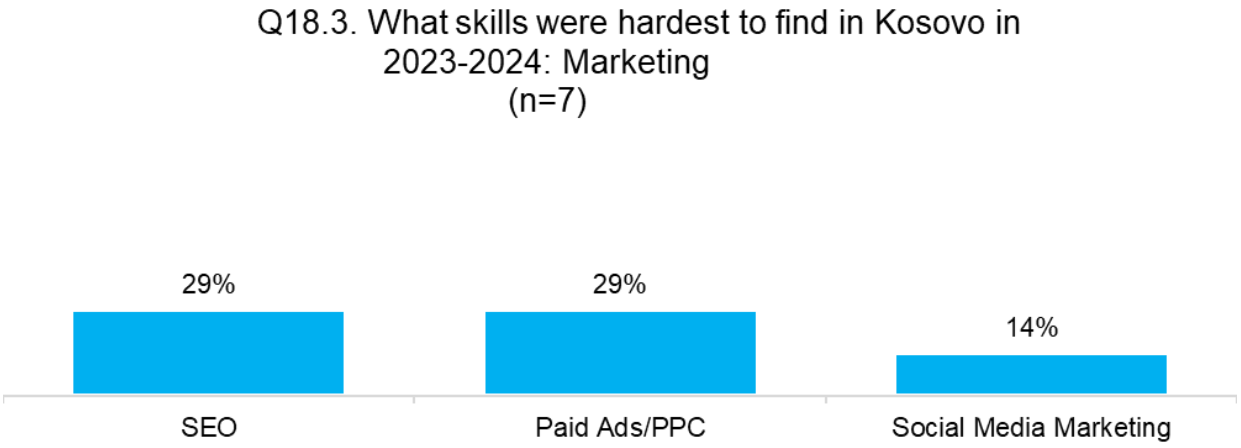
Graph 26. Programming languages skills hardest to find in Kosovo (2023–2024)

Within design-related roles, UI/UX design and proficiency with design tools (29% each) were the hardest to source, highlighting a shortage of specialists who can create user-centered interfaces and effectively leverage modern design software. Graphic design (21%) also emerged as a significant gap, indicating continued demand for creative visual skills. Frontend development (7%), though less common, still reflects crossover challenges where design and technical skills overlap.



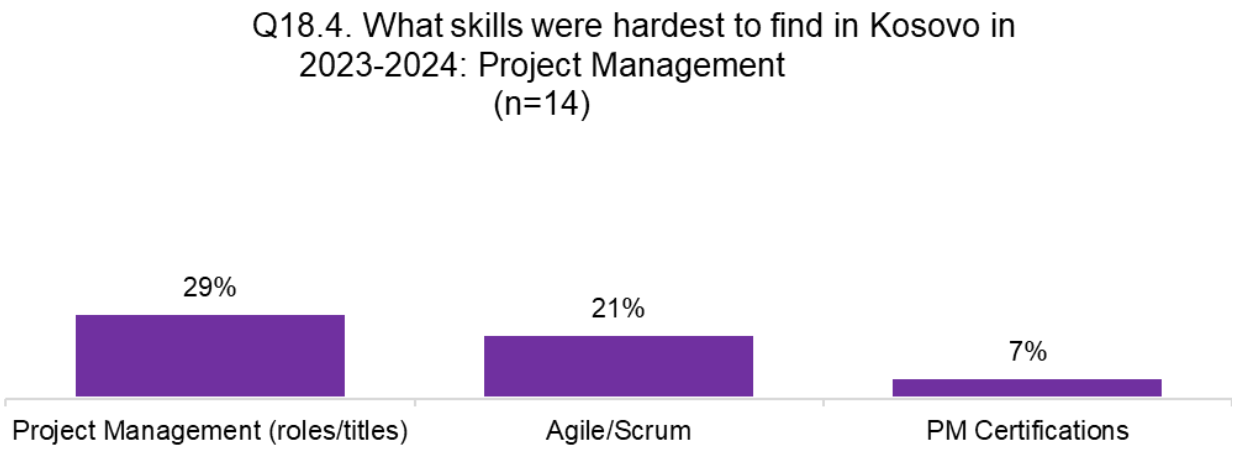
Graph 27. Design skills hardest to find in Kosovo (2023–2024)

For marketing-related roles, the hardest skills to find were SEO (29%) and Paid Ads/PPC expertise (29%), both equally in demand. This indicates a shortage of professionals with strong digital marketing optimization and advertising campaign management capabilities. Social media marketing (14%) was also highlighted, but to a lesser degree, suggesting that while social media skills are needed, the real hiring difficulty lies in specialized digital performance marketing skills.



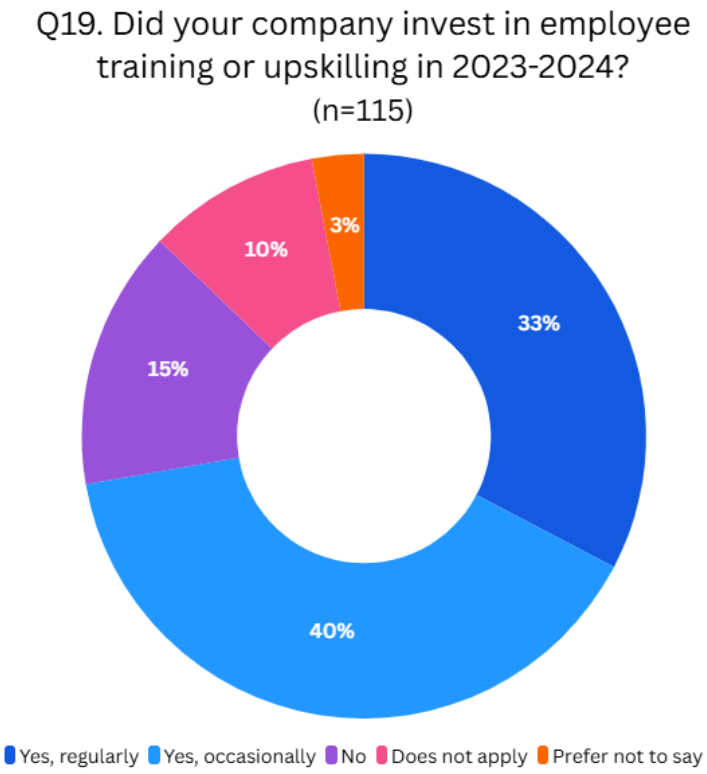
Graph 28. Marketing skills hardest to find in Kosovo (2023–2024)

Within project management, the hardest skill to source was general project management expertise (29%), reflecting demand for professionals capable of overseeing complex initiatives. Agile/Scrum methodologies (21%) were also highlighted as a significant challenge, pointing to the need for structured, iterative approaches in technology and business projects. Meanwhile, formal PM certifications (7%) were least mentioned, suggesting that while certifications add value, employers are primarily struggling to find candidates with practical project execution and agile experience.



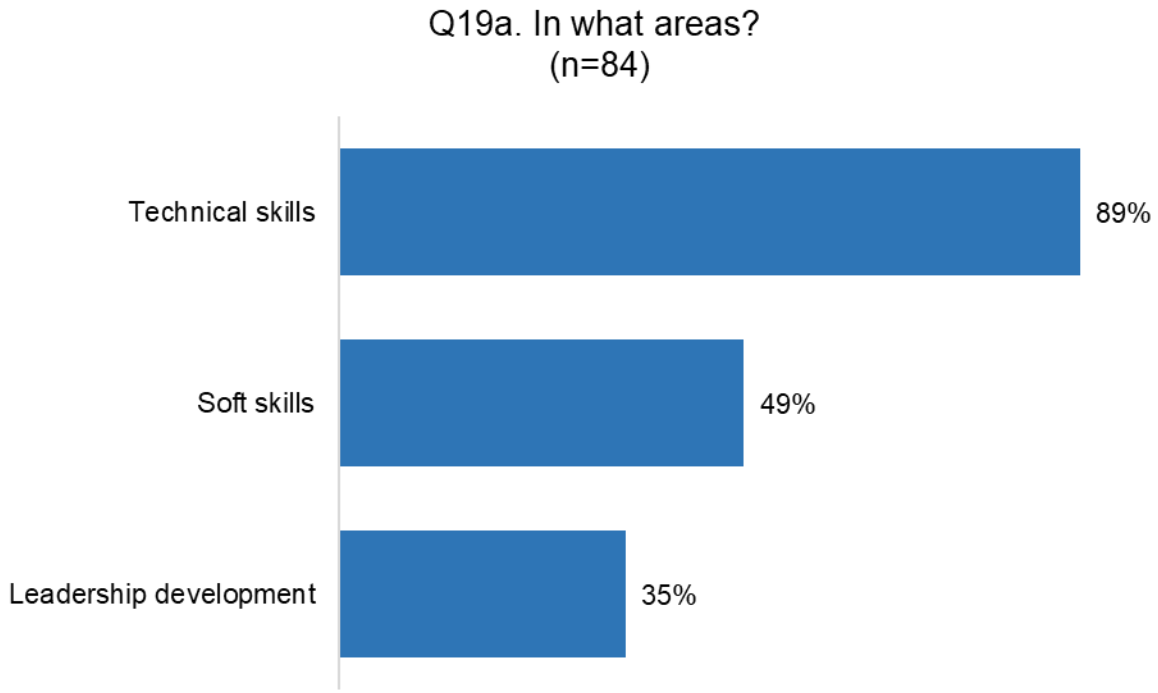
Graph 29. Project management skills hardest to find in Kosovo (2023–2024)

Most firms reported engaging in employee development during 2023–2024, with 40% investing occasionally and 33% investing regularly. A smaller share did not invest in training (15%), while 10% said this does not apply to their business model, and 3% preferred not to answer. Overall, the results indicate that training and upskilling are common practices across the sample, though a minority of companies remain disengaged.



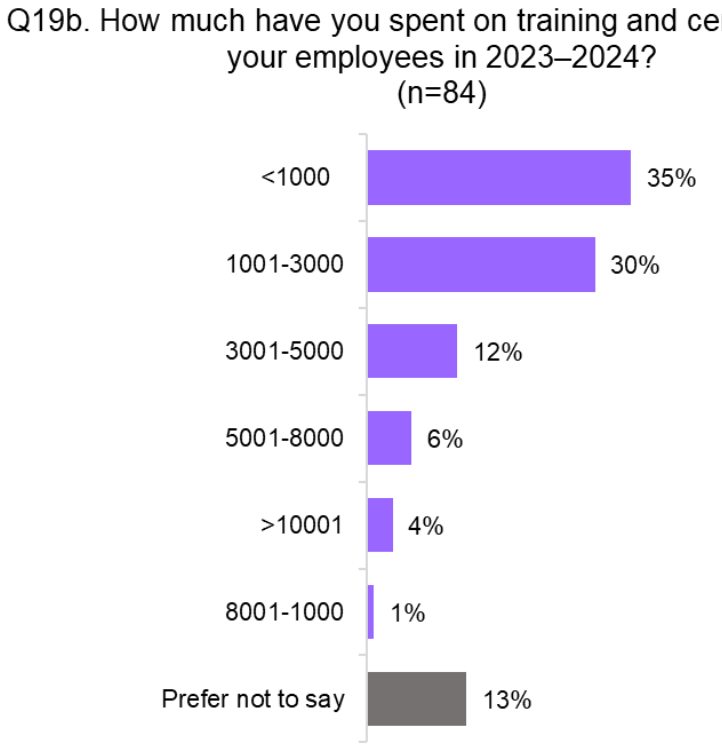
Graph 30. Company investment in employee training and upskilling (2023–2024)

For three out of four companies that reported investing in employee training, the main focus was on technical skills (89%), underlining the critical importance of building technical capacity within firms. At the same time, nearly half (49%) also invested in soft skills, recognizing the value of communication, teamwork, and adaptability. Leadership development (35%) was a further area of attention, reflecting the need to prepare future leaders and strengthen management capabilities.



Graph 31. Areas of employee training and upskilling (2023–2024)

Most companies that invested in employee training and certification reported spending relatively modest amounts. 35% spent under 1000 EUR, while another 30% spent between 1001–3000 EUR. A smaller share invested at higher levels, including 12% spending 3001–5000 EUR, 6% spending 5001–8000 EUR, and 4% above 10,000 EUR. Just 1% reported spending 8001–10000 EUR, while 13% preferred not to disclose their training expenditure. This distribution highlights that while training investment is widespread, it remains limited in scale for most firms.

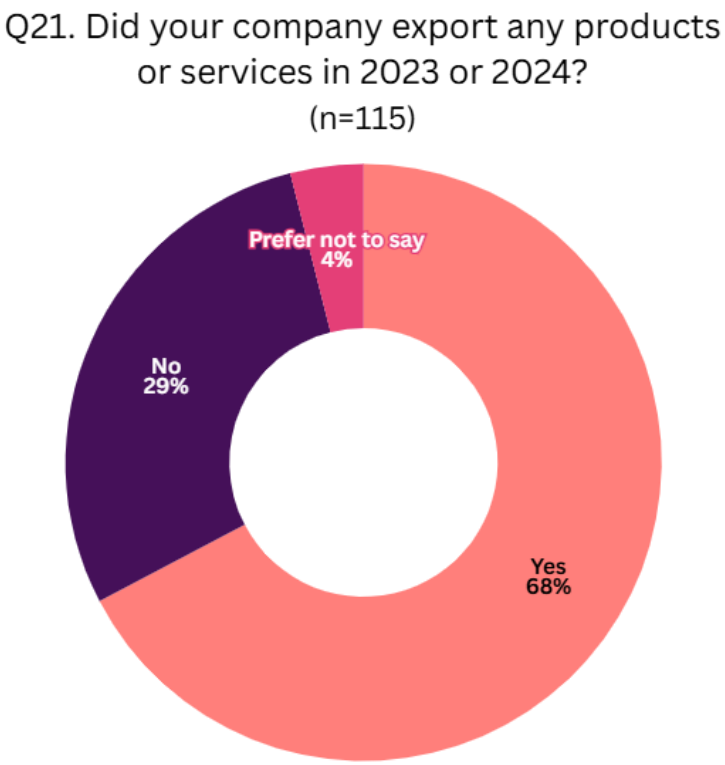


Graph 32. Spending on employee training and certification (2023–2024)

Section 5: Market and Revenue

A majority of firms reported engaging in exports, with 68% confirming they exported products or services in 2023–2024. Meanwhile, 29% of companies stated they did not export, and 4% preferred not to disclose this information. This indicates that exports play a significant role in business activity for most firms, though a notable portion still focuses solely on domestic markets.

Compared to the 2021–2022 period, when around 84% of ICT companies were active in international markets through direct exports or partnerships abroad, the 2023–2024 results show a slight decline in international engagement. Still, companies remain largely outward-oriented, especially in software development, IT services, and digital marketing. Export activity continues to be a key driver of growth and competitiveness, even as a growing number of businesses appear to be focusing more on the domestic market.



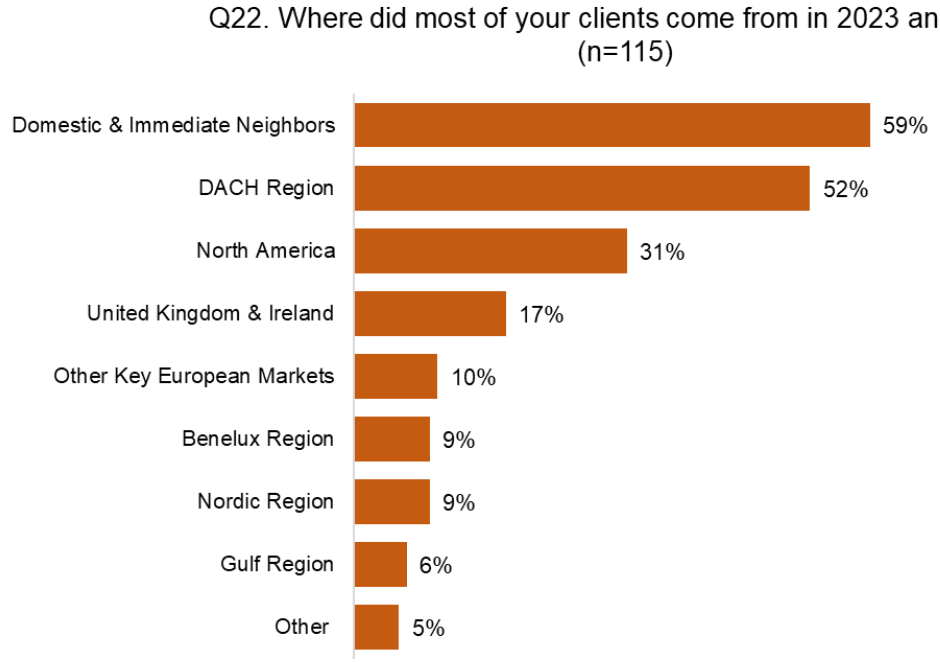
Graph 33. Export activity of companies (2023–2024)

The analysis below presents the overall regional distribution of clients for 2023 and 2024, based only on respondents who selected at least one region (n=115).
It's important to note that within each regional group (for example, Domestic & Immediate Neighbors or DACH Region), respondents could select multiple countries (e.g., Kosovo, Albania, North Macedonia, etc.). Therefore, if a respondent selected at least one country from a region, they were counted as having clients in that region. In other words, the figures represent the share of respondents who reported any client presence within each region.

Although Domestic and Immediate Neighboring markets appear as the most frequently mentioned (60%), this should be interpreted with caution, as in reality nearly half of Kosovo's companies do not operate in the local market at all but work exclusively through exports. Therefore, the high percentage under "Domestic & Immediate Neighbors" does not necessarily indicate a local orientation but rather reflects how companies reported their activities, while the DACH region (52%) and North America (31%) remain the main external markets.

**The results reflect respondent-level selections, not the number of countries chosen, meaning each respondent is counted once per region if they reported having clients there*.

Compared to the 2021–2022 IT Barometer Report, the DACH Region and USA & Canada continue to lead as the main client markets in this IT Barometer 2023-2024 as well.



Graph 34. Client Origins by Region (2023–2024)

The table below lists the countries from which clients come, grouped under their respective regional categories such as DACH, Benelux, Nordic, etc.

Table 7. Main Client Markets by Regional and Country Groupings (2023–2024)

Q22. Where did most of your clients come from in 2023 and 2024? (n=115)		
Domestic & Immediate Neighbors	Kosovo	56%
	Albania	12%
	North Macedonia	5%
	Montenegro	4%
	Serbia	1%
	Bosnia and Herzegovina	0%
DACH Region	Germany	40%
	Switzerland	30%
	Austria	10%
Benelux Region	The Netherlands	6%
	Belgium	5%
	Luxembourg	3%
Nordic Region	Sweden	6%
	Denmark	3%
	Norway	4%
	Finland	1%
United Kingdom & Ireland	United Kingdom	16%
	Ireland	3%
Other Key European Markets	France	4%
	Italy	2%
	Spain	2%
	Croatia	3%
	Slovenia	3%
	Poland	1%
North America	USA	30%
	Canada	4%
Gulf Region	UAE	3%
	Saudi Arabia	4%
	Qatar	1%
Other	Turkey	2%
	Malta	1%
	Australia	1%
	Worldwide	2%

Because Q22 asked respondents to estimate the percentage of clients by country, but most countries had very high non-response rates (around or above 50%), the data are not reliable for analysis. This applies particularly to markets such as Kosovo, Germany, and Switzerland, where many respondents selected the country but did not provide a percentage.

Table 8. Client Origins – Mean Percentages and Non-Response Insights (2023–2024) 1/2

Q22. Where did most of your clients come from in 2023 and 2024? Estimated % (n=115) 1/2			
Region	Country	Mean %	No answer
Domestic & Immediate Neighbors	Kosovo (n=64)	(n=25) 60%	(n=39) 61%
	Albania (n=14)	(n=5) 29%	(n=9) 64%
	North Macedonia (n=6)	(n=3) 18%	(n=3) 50%
	Montenegro (n=4)	(n=1) 10%	(n=3) 75%
	Serbia (n=1)	-	(n=1) 100%
DACH Region	Germany (n=46)	(n=21) 33%	(n=25) 54%
	Switzerland (n=33)	(n=12) 31%	(n=21) 64%
	Austria (n=11)	(n=4) 6%	(n=7) 64%
Benelux Region	The Netherlands (n=7)	(n=2) 6%	(n=5) 71%
	Belgium (n=6)	(n=2) 13%	(n=4) 67%
	Luxembourg (n=3)	(n=2) 42%	(n=1) 33%
Nordic Region	Sweden (n=7)	(n=3) 22%	(n=4) 57%
	Denmark (n=3)	-	(n=3) 100%
	Norway (n=4)	-	(n=4) 100%
	Finland (n=1)	-	(n=1) 100%
United Kingdom & Ireland	United Kingdom (n=18)	(n=7) 5%	(n=11) 61%
	Ireland (n=3)	(n=2) 8%	(n=1) 33%

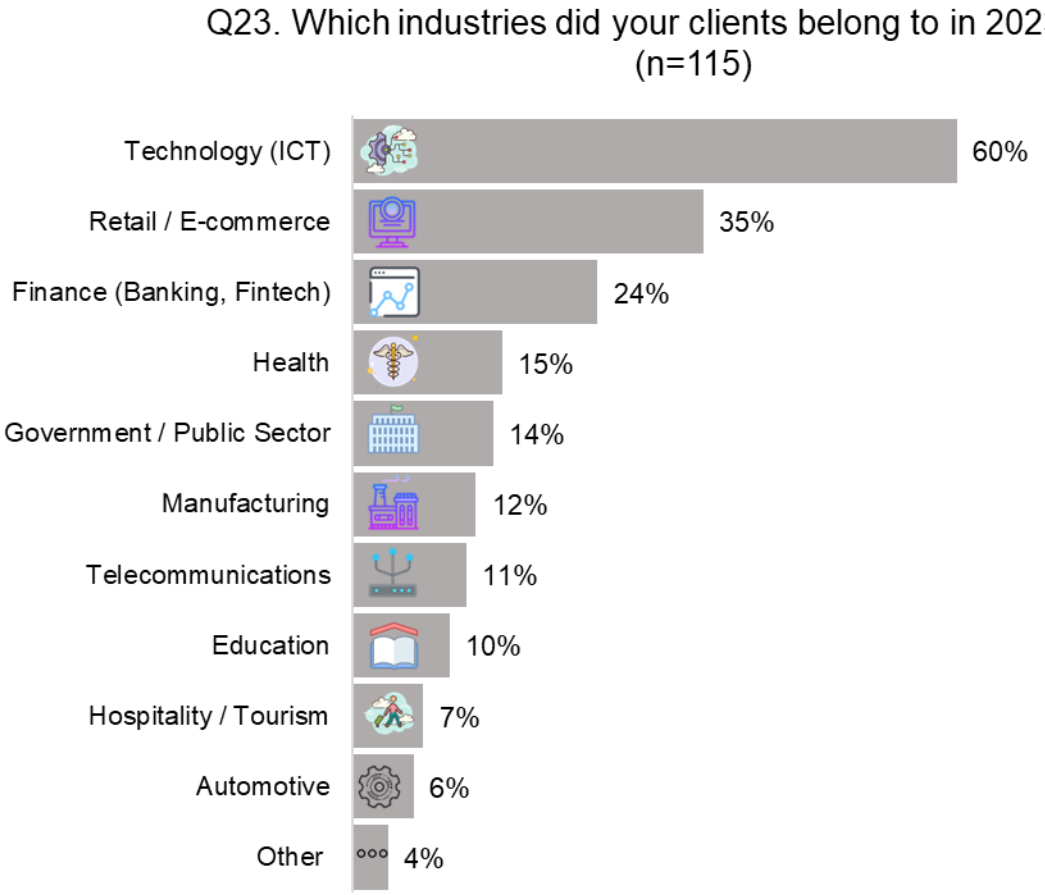
Furthermore, in other regions like North America, although the USA had a higher number of respondents (n=35), 43% of them did not provide a percentage estimate, which further limits the interpretability of the results.

Table 9. Client Origins – Mean Percentages and Non-Response Insights (2023–2024) 2/2

Q22. Where did most of your clients come from in 2023 and 2024? Estimated % (n=115) 2/2			
Region	Country	Mean %	No answer
Other Key European Markets	France (n=4)	(n=2) 33%	(n=2) 50%
	Italy (n=2)	(n=2) 12%	-
	Spain (n=2)	(n=1) 19%	(n=1) 50%
	Croatia (n=3)	(n=2) 5%	(n=1) 33%
	Slovenia (n=3)	(n=2) 8%	(n=1) 33%
	Poland (n=1)	(n=1) 3%	-
North America	USA (n=35)	(n=20) 57%	(n=15) 43%
	Canada (n=4)	(n=4) 8%	-
Gulf Region	UAE (n=3)	(n=2) 51%	(n=1) 33%
	Saudi Arabia (n=5)	(n=4) 30%	(n=1) 20%
	Qatar (n=1)	-	(n=1) 100%
Other	Other Countries (n=6)	(n=4) 48%	(n=2) 33%

The majority of clients came from the Technology (ICT) sector, representing 60% of the total, making it the leading industry served. Retail/E-commerce (35%) and Finance (Banking, Fintech) (24%) followed as the other two most important client sectors, highlighting strong ties to digital commerce and financial services.

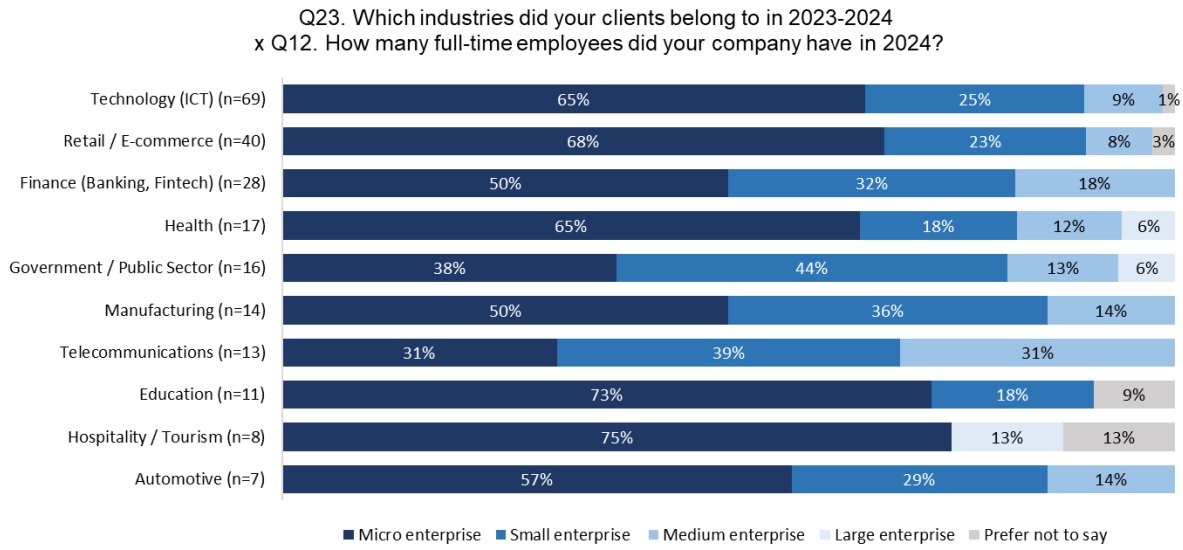
Other industries such as Health (15%), Government/Public Sector (14%), and Manufacturing (12%) were also represented, while smaller shares came from Telecommunications (11%), Education (10%), Hospitality/Tourism (7%), Automotive (6%), and Other (4%).
Overall, the results confirm that ICT, retail, and finance are the top three client industries, while firms also engage with a wide range of additional sectors.



Graph 35. Industries served by client companies (2023–2024)

Cross-tabulating Q23 (client industries in 2023–2024) with Q12 (company size by number of full-time employees) shows that most industries are predominantly served by micro and small enterprises, reflecting their dominance within the overall business landscape. Medium enterprises, however, are more prominent in the Telecommunications sector, followed by the Finance and Banking (FinTech) industry. Large enterprises are particularly concentrated in the Hospitality and Tourism sector.

**Due to low sample sizes in certain industries results should be interpreted with caution, as they are not statistically significant and may not fully represent overall industry trends.*

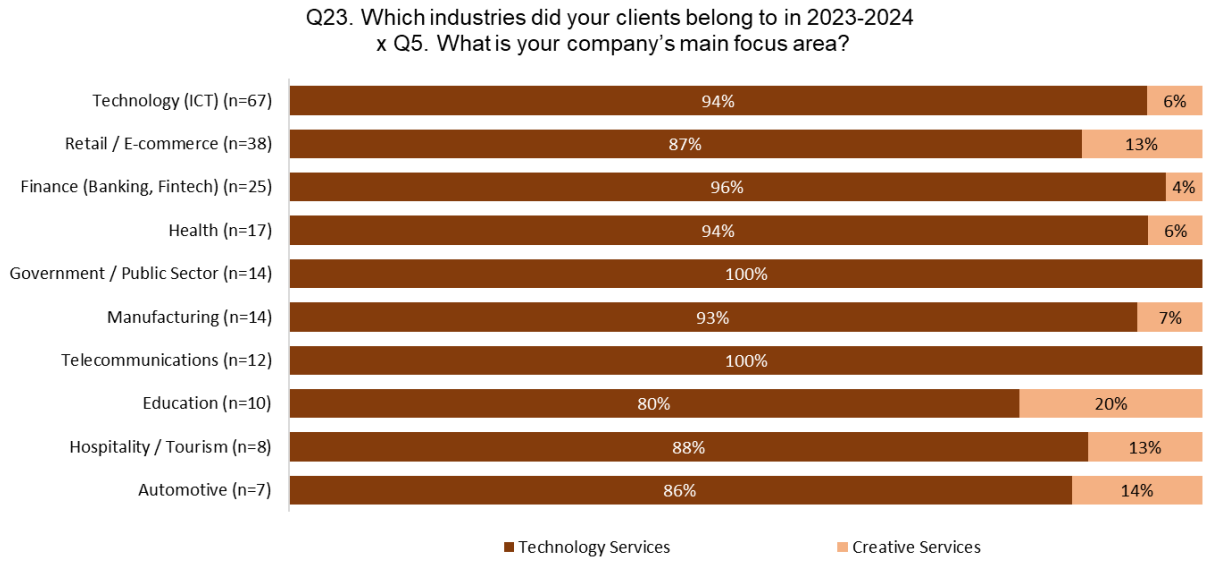


Graph 36. Client Industries by Company Size (2023–2024)

The crosstab between Q23 (Industries clients belonged to in 2023–2024) and Q5 (Company's main focus area) shows that the vast majority of respondents across nearly all industries operate in Technology Services.

Industries such as Government/Public Sector and Telecommunications are exclusively represented by Technology Services companies (100%), while sectors like Finance (96%), Technology (ICT) (94%), Health (94%), and Manufacturing (93%) also show very high representation within the same category. Creative Services appear to have a smaller presence overall, being slightly more common in Education (20%), Automotive (14%), Retail/E-commerce (13%), and Hospitality/Tourism (13%).

** The dominance of Technology Services across industries suggests that most surveyed firms primarily offer technology-oriented solutions, while Creative Services remain more niche and sector-specific. However, results for industries with low sample sizes should be interpreted with caution, as they are not statistically significant.*



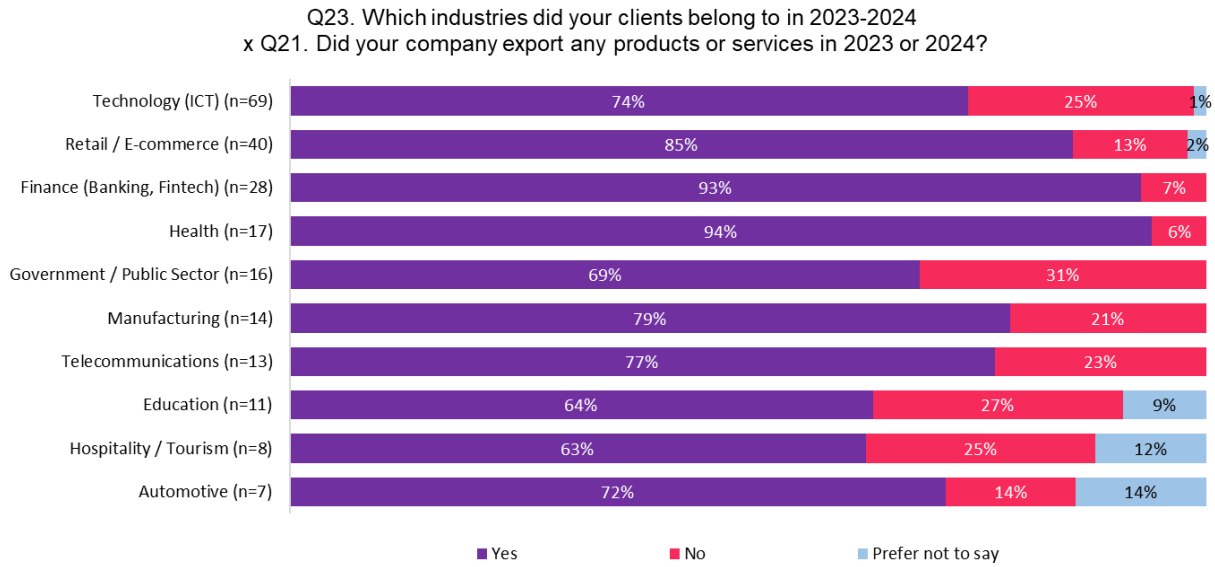
Graph 37. Client Industries by Company Focus Area (2023–2024)

The crosstab between Q23 (Industries clients belonged to in 2023–2024) and Q21 (Export activity in 2023 or 2024) shows that exporting is a common practice across most industries, though with varying intensity.

Industries such as Health (94%), Finance (93%), Retail/E-commerce (85%), and Technology (74%) report the highest shares of companies engaged in exports, highlighting their strong international reach. Manufacturing (79%) and Telecommunications (77%) also demonstrate solid export participation, reflecting their integration into broader regional or global markets.

By contrast, export activity is lower in sectors like Government/Public Sector (69%), Education (64%), and Hospitality/Tourism (63%), where operations are more likely to be domestically oriented.

** Due to low sample sizes in several sectors these results should be interpreted with caution, as they are not statistically significant and may not represent wider market patterns.*

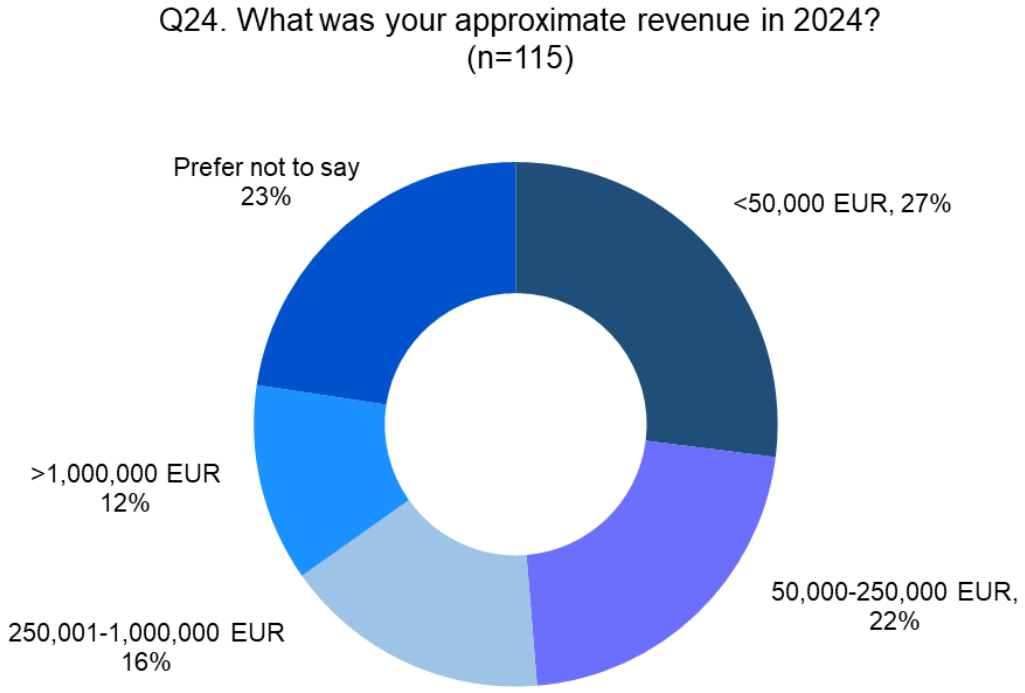


Graph 38. Client Industries by Export Activity (2023–2024)

Revenue distribution in 2024 shows that a small share of companies reported revenues below €50,000, while over half earned above this threshold, mostly within the €50,000–€1,000,000 range.

Compared with 2022, the share of firms below €50,000 increased slightly, and those above €50,000 dropped from 62% to 50%. This shift is largely due to the rise in micro-enterprises, which grew from 48% in 2022 to two-thirds of the sector in 2024 and typically generate lower turnover. A higher number of companies in 2024 (23%) also chose not to disclose their revenues, contributing to the change.

Despite these shifts, the sector overall maintains stable financial performance.



Graph 39. Approximate company revenue in 2024

Company revenue in 2024 closely reflects workforce structure and investment patterns. Companies with more than 10 full-time employees most often reported revenues above €250,000, while micro-enterprises with up to 10 employees were more frequently positioned below this level. Gender distribution remains consistent across all firms, with roughly two in five employees being women.

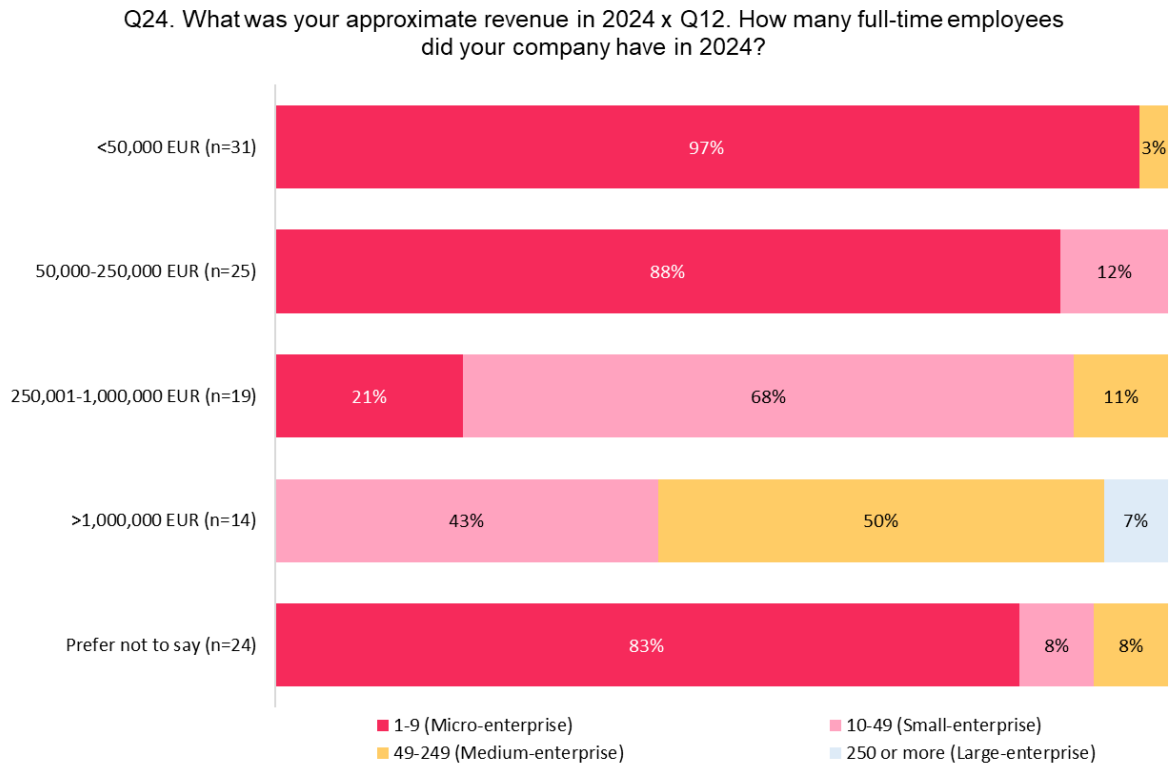
Higher-revenue companies are notably more technical, with nearly three-quarters of their workforce in technical roles, compared to a more even technical–non-technical split among lower-revenue firms. Wage levels follow the same trend, as a significantly larger share of staff earning over €1,500 per month is found in companies generating more than €250,000. These higher-revenue firms also operate mainly on-site, with just over half reporting limited remote work (0–25%).

Recruitment challenges persist across the sector, though they are slightly more pronounced among higher-revenue companies. Talent shortages also differ: firms above €250,000 report the greatest difficulty finding Project Management and Data & AI skills, while those below €250,000 struggle more with Programming, Cybersecurity, and Design roles.

Differences in workforce investment are even more prominent. Nearly 90% of higher-revenue companies invested in training and upskilling in 2023–2024, compared with about two-thirds of lower-revenue firms. Their priorities also diverge: higher-revenue companies focus more on soft and leadership skills, whereas lower-revenue companies concentrate on technical skills. Investment levels reflect this, with more than half of lower-revenue companies spending up to €1,000 on training, while 70% of higher-revenue firms invested more than €1,000.

The crosstab between Q24 (Approximate revenue in 2024) and Q12 (Company size by number of full-time employees 2024) shows that companies with revenues below €250,000 are mainly micro-enterprises - 97% among those earning under €50,000 and 88% among those in the €50,000–250,000 range - confirming that the sector remains strongly composed of small scale.
Mid-range revenue companies (€250,001–€1,000,000) are mostly small enterprises (68%), with only a small share falling into the medium/large category. In contrast, companies earning over €1,000,000 are primarily small (43%) and medium/large enterprises (57%), reflecting a more established segment with greater financial capacity.
Interestingly, even among those who preferred not to disclose their revenue, the majority (83%) were micro-enterprises, suggesting that smaller firms may be more reluctant to share financial details.
Compared with the 2022 IT Barometer, the share of higher-revenue companies has declined, largely due to the sharp increase in micro-enterprises, which now represent 66% of the sector (up from 48% in 2022). A higher number of companies also chose not to disclose revenue, adding some uncertainty. Overall, the sector remains active but increasingly shaped by micro-enterprise turnover patterns.

** Due to low sample sizes in several sectors these results should be interpreted with caution, as they are not statistically significant and may not represent wider market patterns.*

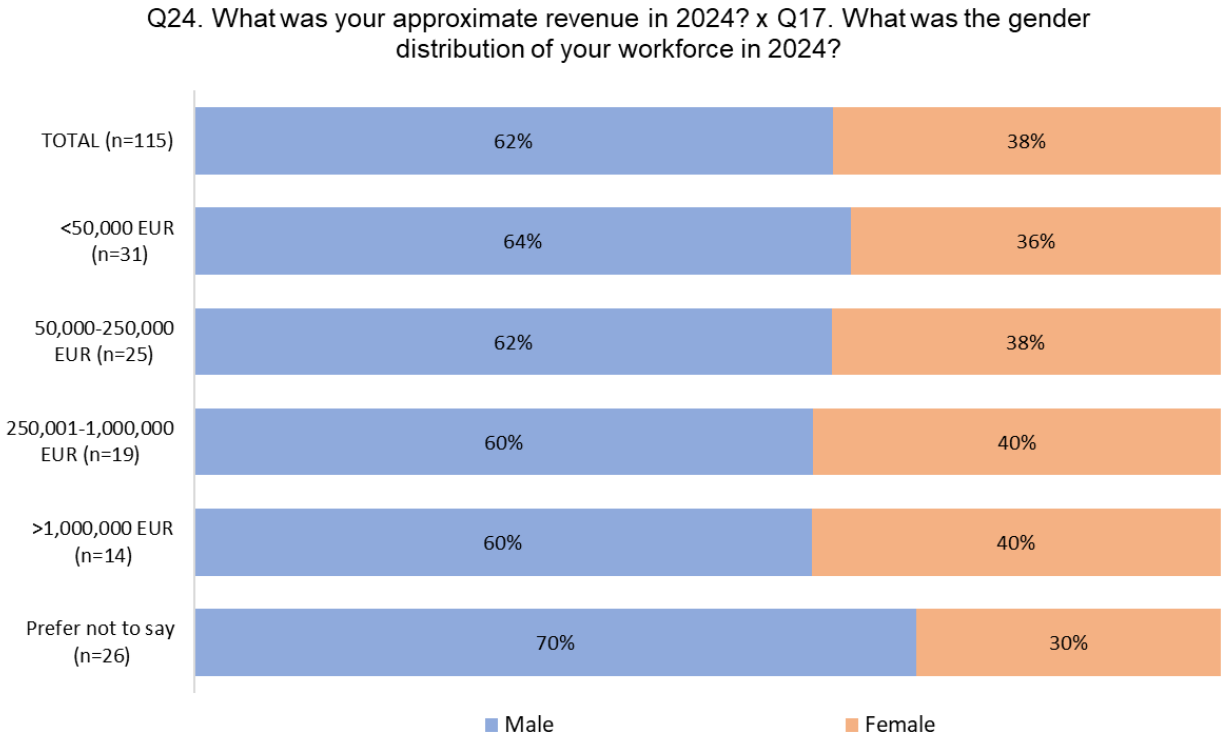


Graph 40. Company Revenue by Number of Employees (2024)

Given that in the total sample of 115 companies, male employees make up a higher share (62%) compared to female employees (38%), the cross-tabulation with company revenue shows a similar pattern across all company revenue groups. In every revenue category - from under €50,000 to over €1 million - the share of male employees' remains higher, around two thirds of the male employees compared to female employees.

Respondents who chose not to disclose their revenue also reported a higher proportion of male employees, as shown in the chart.

** Due to low sample sizes in several sectors these results should be interpreted with caution, as they are not statistically significant and may not represent wider market patterns.*



Graph 41. Approximate Company Revenue by Gender Distribution (2024)

Revenue patterns in 2024 strongly reflect company maturity and profile. Older companies (founded before 2010) show the strongest financial performance, with nearly three-quarters reporting revenues above €250,000 and a notable share exceeding €1 million. Firms founded between 2010 and 2019 fall mainly in the mid-range, with slightly more than half earning €50,000–€250,000. Newer companies (established from 2020 onward) report much lower revenues, with over half earning up to €250,000 and many below €50,000.

Regionally, most firms outside Prishtina remain below the €250,000 mark, while the Prishtina region - home to the majority of ICT companies - hosts the highest-revenue businesses.

Certification also matters: over half of certified companies generate more than €250,000, compared with significantly lower revenues among non-certified firms. Across all revenue levels, companies consistently operate primarily in Technology Services, reinforcing the sector's central role in Kosovo's ICT industry.

Across all revenue categories, companies mainly operate in Technology Services. This dominance is consistent among firms earning below 50,000 EUR, between 50,000–250,000 EUR, and up to 1,000,000 EUR, as well as among the highest-earning group.

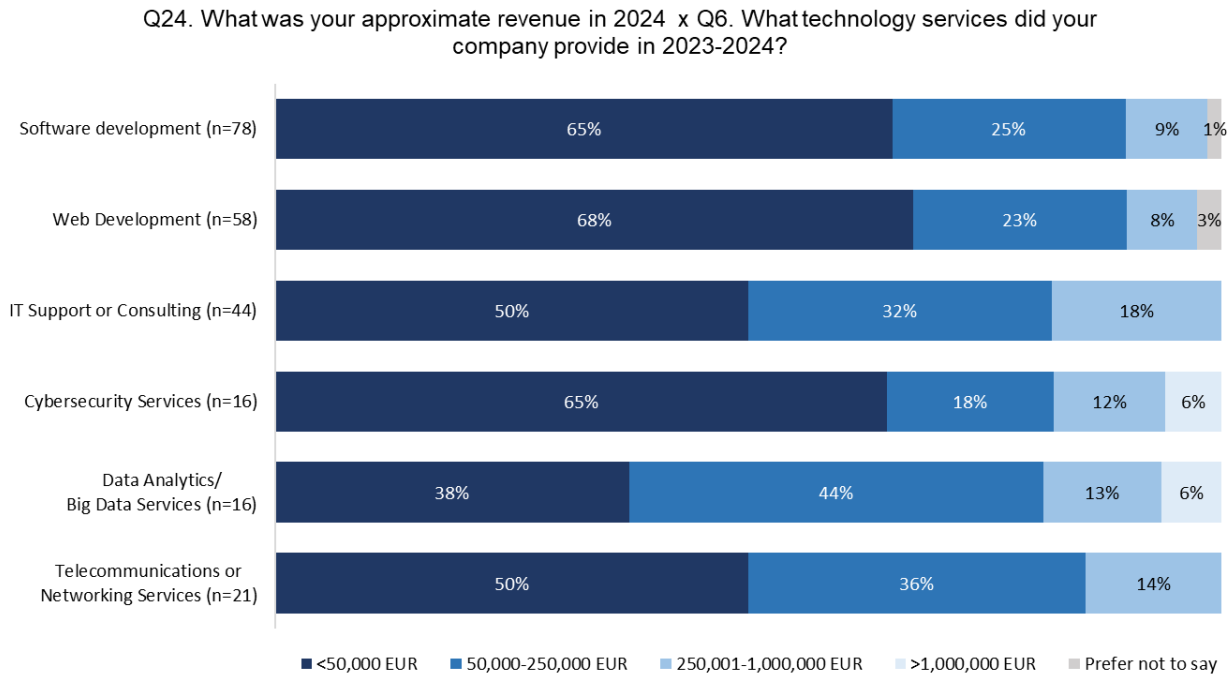
Those who preferred not to disclose their revenue also mostly belong to technology-oriented firms. The statistical test ($p=0.51 > 0.05$) confirms that the relationship between company focus and revenue size is not significant, indicating a similar service distribution across all income levels.

Table 10. Distribution of Company Focus Areas by Revenue Category

Q24. What was your approximate revenue in 2024 x Q5. What is your company's main focus area? *(p > 0.05)					
Company Services	<50,000 EUR (n=31)	50,000-250,000 EUR (n=25)	250,001-1,000,000 EUR (n=19)	>1,000,000 EUR (n=14)	Prefer not to say (n=26)
Technology Services	87%	84%	84%	93%	89%
Creative Services	7%	8%	16%	-	12%
Technology & Creative Services	3%	-	-	-	-
Educational Services	-	8%	-	-	-
Business Services	3%	-	-	7%	-

The crosstab between Q24 (Approximate revenue in 2024) and Q6 (Technology services provided in 2023–2024) highlights how revenue levels vary across different types of technology services.
The majority of companies across all service types reported revenues below €250,000, particularly those engaged in Software Development (65%), Web Development (68%), and Cybersecurity (65%) — reflecting that these activities are mainly carried out by small or micro firms.
Higher revenue levels are somewhat more common in IT Support or Consulting, where a considerable share of companies reported annual revenues between €250,001 and €1,000,000. Telecommunications or Networking Services also show a slightly stronger presence in higher revenue brackets.

** Due to low sample sizes in several sectors these results should be interpreted with caution, as they are not statistically significant and may not represent wider market patterns.*



Graph 42. Company Revenue by Type of Technology Services Provided (2023–2024)

Market engagement in 2023–2024 varies notably by company revenue. Nearly 90% of firms earning above €250,000 reported exporting, compared with around two-thirds of lower-revenue companies. Lower-revenue firms focus on nearby markets (Domestic & Neighboring countries, DACH, Benelux), while higher-revenue companies have a broader international presence, including the UK & Ireland, USA & Canada, the Nordic region, and the Gulf, where they dominate. Industry focus differs as well: lower-revenue companies mainly serve Technology, Retail/E-commerce, and Education, whereas higher-revenue firms target Finance, Government/Public Sector, Telecommunications, Manufacturing, and Automotive. Health clients are served equally across both groups.

Referrals and word-of-mouth are the main client acquisition channels, especially for lower-revenue firms, while higher-revenue companies rely more on networking, conferences, and partnerships, reflecting their focus on strategic and larger-scale opportunities.

The data reveal a clear pattern between revenue levels and export activity. Companies with lower revenues (under 50,000 EUR) show a relatively balanced distribution between exporting and non-exporting, while those earning between 50,000 and 250,000 EUR or more are overwhelmingly engaged in exports. The trend continues among medium and high-revenue firms, where nearly

all companies report exporting their products or services. This indicates that as revenue increases, companies become progressively more export-oriented.

The analysis shows a statistically significant relationship ($p = 0.01 < 0.05$), confirming that export activity is closely linked to company revenue. Higher-earning firms are much more likely to engage in exports, suggesting that internationalization expands in line with financial capacity and business scale.

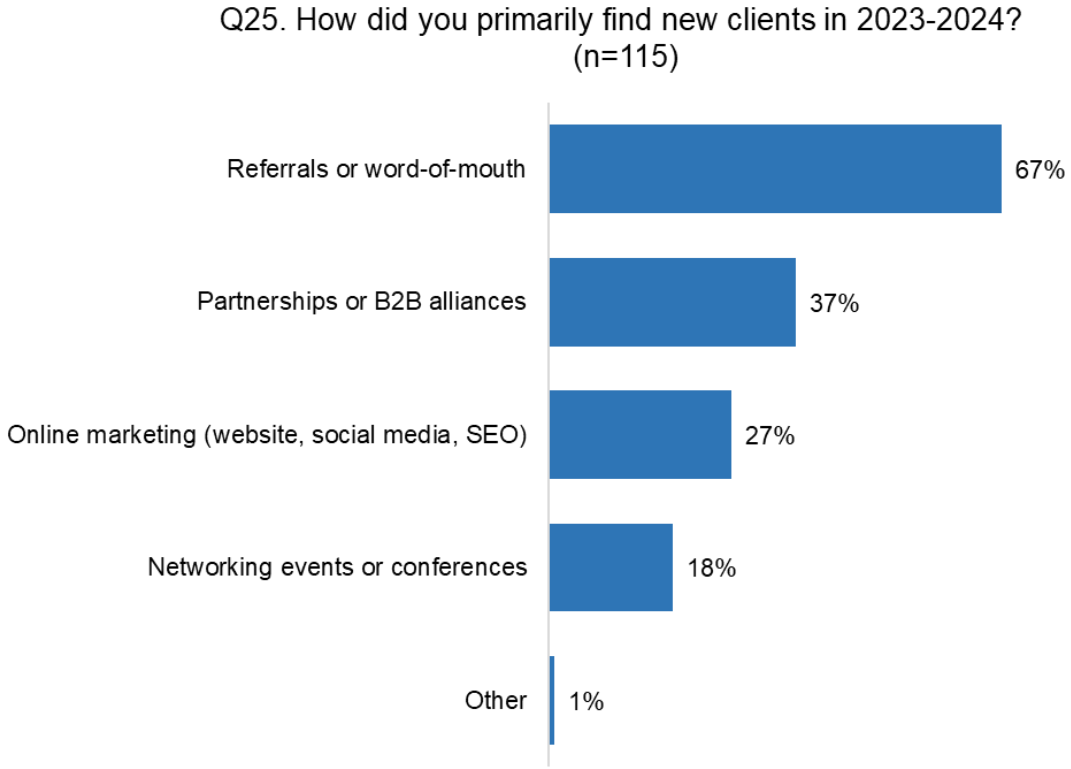
Table 11. Link Between Company Revenue and Export Activity

Q24. What was your approximate revenue in 2024 x Q21. Did your company export any products or services in 2023 or 2024? *(p < 0.05)					
Export	<50,000 EUR (n=31)	50,000-250,000 EUR (n=25)	250,001-1,000,000 EUR (n=19)	>1,000,000 EUR (n=14)	Prefer not to say (n=26)
Yes	55%	84%	95%	79%	42%
No	45%	16%	5%	21%	42%
Prefer not to say	-	-	-	-	15%

The most common way companies found new clients was through referrals or word-of-mouth (67%), showing the importance of personal networks and reputation in client acquisition. Beyond this, 37% relied on partnerships or B2B alliances, highlighting collaboration as a key growth strategy.

Digital channels also played a significant role, with 27% using online marketing (websites, social media, SEO) to attract clients. Meanwhile, 18% of companies participated in networking events or conferences to expand their client base. Only 1% reported “Other” methods, showing that most firms concentrated on a few core approaches.

Overall, client acquisition leaned heavily on trust-based referrals and partnerships, while online strategies and professional events served as complementary channels.



Graph 43. Primary ways companies found new clients (2023–2024)

Section 6: Challenges and Future Outlook

In 2023–2024, both revenue groups faced key challenges in hiring skilled staff, winning new clients, and keeping up with technological changes. Higher-revenue companies (>€250,000) struggled more with finding specialized talent, while lower-revenue firms (≤€250,000) were more challenged in acquiring new clients and access to funding and finance. Cybersecurity issues were also revenue-dependent: higher-revenue companies experienced more phishing, ransomware, malware, and data breaches, whereas many lower-revenue firms reported no incidents.

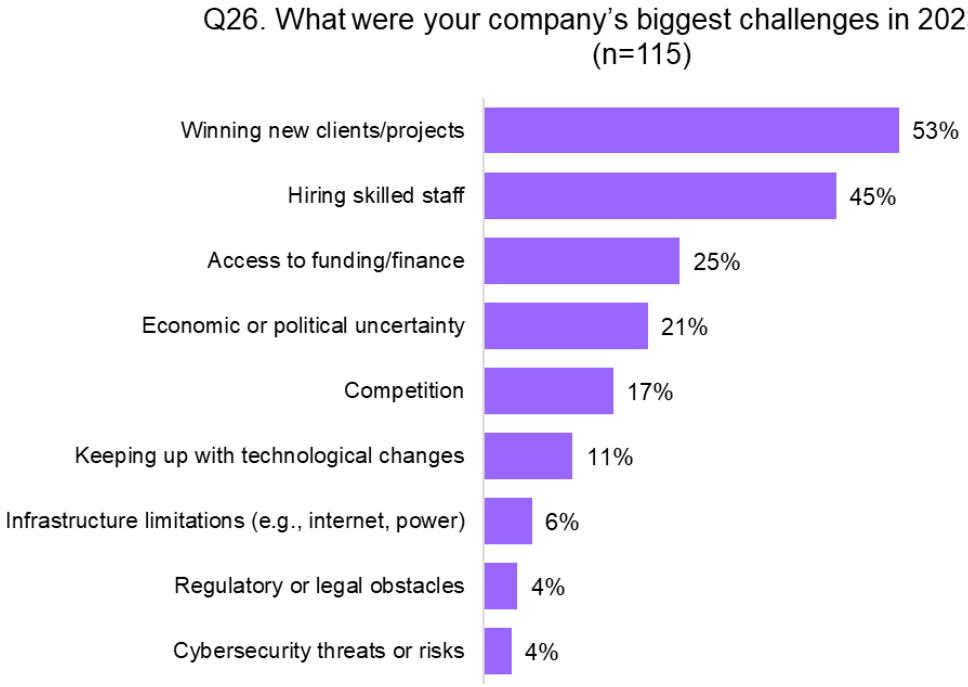
Looking ahead in the next five years, both groups anticipate strong demand for AI/ML and Data Science/Big Data skills, with higher-revenue firms emphasizing Data Science, next-gen networking, and VR/AR, and lower-revenue companies focusing on AI/ML, Cloud, IoT, and Web3/Blockchain. Expansion plans for 2025–2026 show higher-revenue companies leading with 88% aiming to grow, mainly in AI, Data, Automation, and global markets, while 75% of lower-

revenue firms target Web, Software, Apps, and IoT in regional markets. This highlights differing growth strategies tied to company size and revenue.

The top three challenges reported by companies were winning new clients or projects (53%), hiring skilled staff (45%), and access to funding/finance (25%). These findings confirm that growth, talent acquisition, and financial resources remain the most pressing concerns for businesses. Other barriers such as economic or political uncertainty (21%), competition (17%), and keeping up with technological changes (11%) were mentioned less frequently, while only a small minority identified infrastructure limitations (6%), regulatory/legal obstacles (4%), and cybersecurity risks (4%).

Compared to the 2021–2022 IT Barometer, where ICT companies in Kosovo mainly struggled with institutional support, qualified staff, and collaboration with educational institutions, the 2023–2024 results reveal a shift in priorities and intensity of challenges. Access to funding and finance, along with economic and political uncertainty, now stand out as the most pressing issues affecting company stability and growth. These are followed by the persistent difficulty of hiring skilled staff and the increasing importance of cybersecurity risks. Meanwhile, coping with competition, winning new clients, and keeping pace with rapid technological change remain relevant but represent somewhat secondary challenges compared to the financial and macro-environmental pressures facing the sector.

For Technology Services companies, the most reported challenges are Winning new clients/projects and hiring skilled staff, showing strong competition and ongoing pressure to secure both talent and business opportunities. These companies also face notable concerns related to Economic or political uncertainty and Access to funding/finance. Such issues highlight the dynamic and capital-intensive character of the ICT sector, where sustained investment and stability are crucial for growth and innovation. Similarly, Creative Services companies, although smaller in number, report the same top issues - Hiring skilled staff, Winning new clients/projects, and Access to funding/finance - as their primary difficulties. However, given the smaller sample size of creative firms, it remains unclear whether these differences are statistically significant, even though the overall trend highlights similar obstacles across both service types.



Graph 44. Biggest Challenges Faced by Companies in 2023–2024

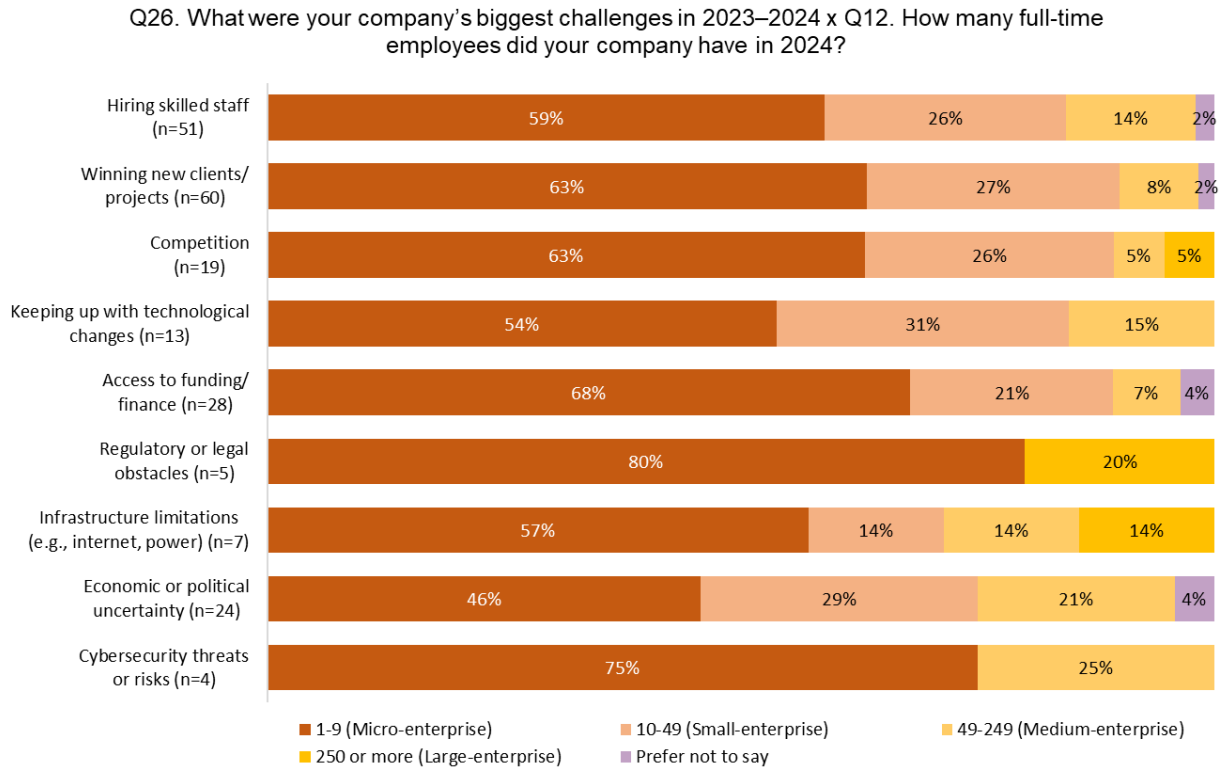
In 2023–2024, company size continued to strongly shape the challenges faced. Micro-enterprises (up to 10 employees) faced the greatest challenges, particularly in hiring skilled staff (59%), winning new clients (63%), access to funding (68%), regulatory issues (80%), and cybersecurity threats (75%).

Small companies (10–50 employees) experienced moderate challenges, mainly in keeping up with technological changes (31%), navigating economic or political uncertainty (29%), and acquiring new clients or projects (27%).

Medium and large enterprises (>50 employees) were generally less impacted, with the most notable issues being infrastructure limitations (29%), cybersecurity threats (25%), and economic or political uncertainty (21%).

Compared with IT Barometer 2021–2022, micro-enterprises continue to experience the highest pressures, with slightly increased challenges in funding and cybersecurity, highlighting the persistent need for targeted support in talent, client growth, financing, and compliance.

** Due to low sample sizes in several sectors these results should be interpreted with caution, as they are not statistically significant and may not represent wider market patterns.*



Graph 45. Main Business Challenges by Company Size (2023–2024)

The majority of companies (76%) reported that they did not face any cybersecurity issues in 2023–2024. Among those that did, the most common problem was phishing or social engineering attempts (18%), followed by malware or virus infections (8%) and ransomware attacks (7%). More severe incidents such as unauthorized system access or hacking (4%), data breaches (4%), and DDoS attacks (3%) were less frequently reported. Insider threats were rare, mentioned by only 1% of respondents.

Overall, the data suggests that while cybersecurity challenges exist, most companies in the sample did not experience significant issues, and when they did, phishing and malware were the main threats.

The data show that micro-enterprises (1–9 employees) were the least affected by cybersecurity incidents, with the majority indicating that they did not face any cybersecurity issues during 2023–2024. In contrast, a small number of small (10–49 employees) and medium-sized (49–249 employees) companies reported experiencing specific problems such as phishing or social engineering attempts, suggesting that cybersecurity exposure tends to rise with company size and operational complexity. Large enterprises (250+ employees) were the least represented but

still reported isolated incidents. Overall, while cybersecurity risks are present across all company sizes, micro-enterprises appear the least vulnerable, though due to limited sample sizes, it cannot be determined whether this relationship is statistically significant.

The results show that Technology Services companies were the most affected by cybersecurity challenges, with the majority reporting incidents such as phishing or social engineering attempts and other related risks. This is expected given their strong digital presence and continuous exposure to online systems and data. In contrast, Creative Services, Education/Training, and Professional/Business Services reported very few or no cybersecurity incidents, reflecting their relatively lower technological dependence and smaller digital footprint. However, due to the small sample sizes among non-technology sectors, it is not possible to determine whether these observed differences are statistically significant, though the trend suggests that cybersecurity risks are most prevalent in technology-driven companies.

The data show that companies with higher revenues are more likely to face cybersecurity issues, while lower-revenue companies reported fewer problems. Most firms earning under 50,000 EUR said they did not experience any cybersecurity incidents, whereas those with medium and high revenues reported more frequent cases. This suggests that cybersecurity risks increase with company size and activity level, though it is not known whether this relationship is statistically significant.

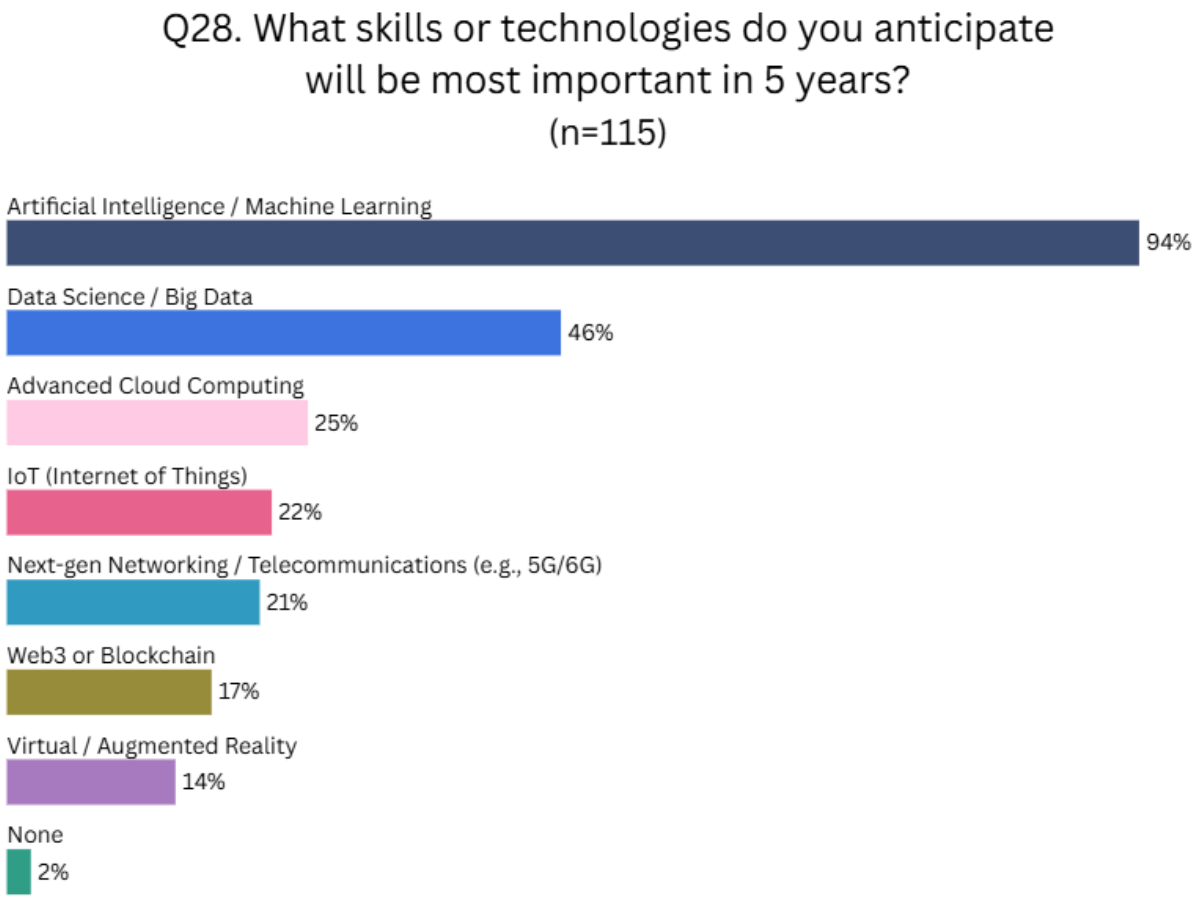
Graph 46. Cybersecurity Issues Faced by Companies in 2023–2024

An overwhelming 94% of respondents identified Artificial Intelligence (AI) and Machine Learning (ML) as the most important technologies for the next five years, making it by far the dominant expectation for future skills demand. Data Science and Big Data (46%) followed as the second most important area, reflecting the critical role of data-driven decision-making. Other emerging priorities included Advanced Cloud Computing (25%), IoT (22%), and Next-gen Networking/Telecommunications such as 5G/6G (21%). Technologies like Web3/Blockchain (17%) and Virtual/Augmented Reality (14%) were mentioned less frequently, while only 2% of respondents believed none of these technologies would be important.
Overall, the findings suggest that AI/ML and data-centric skills are expected to dominate the technology landscape, with cloud, IoT, and connectivity also playing a key supporting role.

In the 2021–2022 report, the most required skills were Senior Software Developers, Software Architects, and Communication Skills, indicating a demand for both advanced technical expertise

and strong interpersonal abilities. The focus was mainly on filling critical roles in software development and project management.

In contrast, the 2023–2024 data show that Artificial Intelligence and Machine Learning have become the dominant future skills, followed by Data Science, Cloud Computing, and Cybersecurity. This shift reflects how the ICT sector is evolving from a demand for core software development roles to a growing emphasis on emerging technologies and data-driven capabilities. In simple terms, while companies previously struggled to hire experienced software developers, today they are increasingly focused on preparing for AI-driven innovation and advanced technology integration — signaling a clear progression from foundational technical needs toward future-oriented digital expertise.



Graph 47. Anticipated Most Important Skills and Technologies in the Next 5 Years

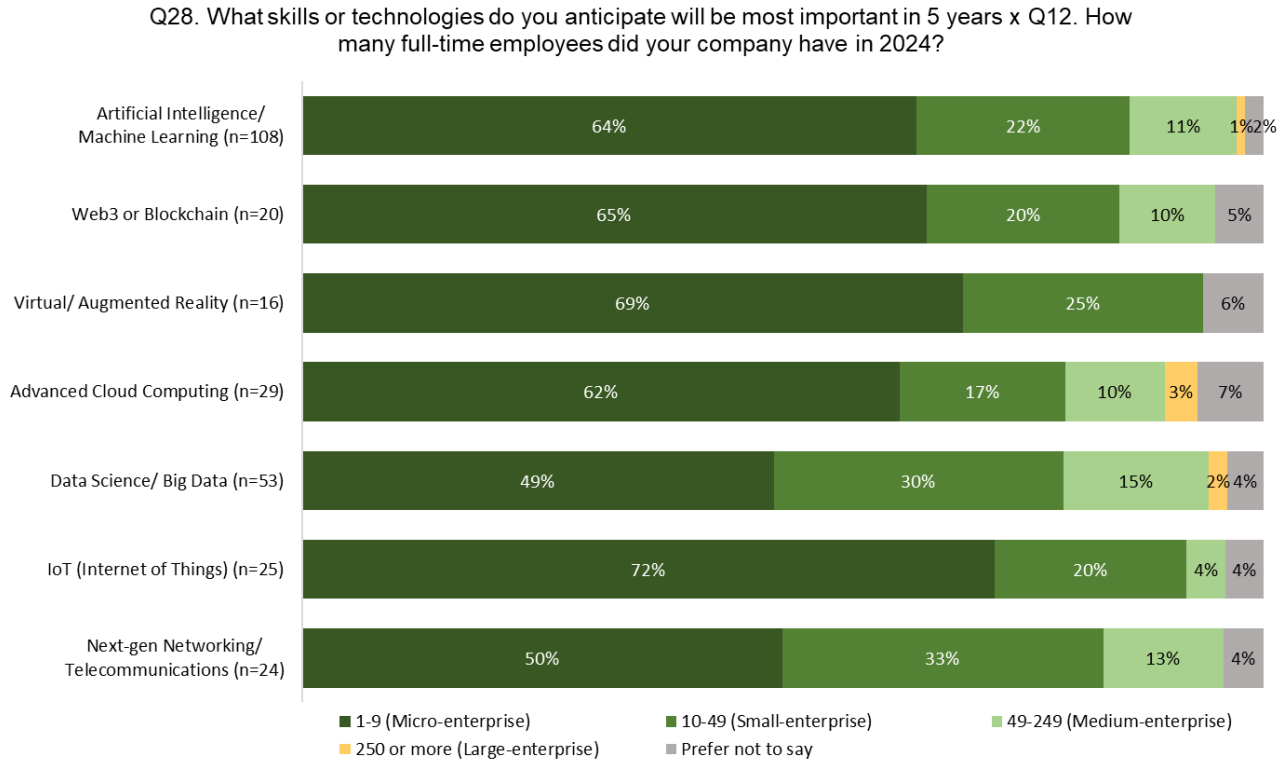
Anticipated key skills and technologies over the next five years vary notably by company size. Micro-enterprises (up to 10 employees) show the strongest focus on emerging technologies, particularly Internet of Things-IoT (72%), Virtual/Augmented Reality (69%), Web3/Blockchain

(65%), Artificial Intelligence/Machine Learning-AI/ML (64%), and Advanced Cloud Computing (62%).

Small companies (10–50 employees) show a moderate focus on these technologies, particularly Next-gen Networking/Telecommunications (33%), Data Science/Big Data (30%), and Virtual/Augmented Reality (25%). Medium and large firms (>50 employees) concentrate on fewer areas, placing the greatest emphasis on Data Science/Big Data (17%), followed by Advanced Cloud Computing (14%) and Next-gen Networking/Telecommunications (13%).

Overall, smaller firms are leading in the adoption and anticipation of advanced ICT skills and technologies, reflecting their agility and focus on innovation, whereas larger firms concentrate on specific high-value areas.

** Due to low sample sizes in several sectors these results should be interpreted with caution, as they are not statistically significant and may not represent wider market patterns.*



Graph 48. Future Skills and Technologies by Company Size (2024)

The crosstab between Q28 (Skills or technologies anticipated to be most important in 5 years) and Q24 (Approximate revenue in 2024) reveals how expectations for future technologies vary across firms with different revenue levels.

Across all categories, the largest shares belong to companies with revenues below €250,000, showing that smaller firms are highly engaged in anticipating future tech trends despite limited financial capacity. For instance, 41% of Advanced Cloud Computing and 40% of Web3/Blockchain technologies fall into companies with lowest revenue range.

Technologies such as Data Science/Big Data (26%) and Virtual/Augmented Reality (25%) show a more balanced distribution, with a stronger representation among companies earning between €250,001 and €1,000,000, suggesting that mid-revenue firms are actively investing in data-driven and solid commercial returns.

A smaller but notable share of firms with revenues above €1 million appear Next-gen Networking/Telecommunications (21%) and Data Science/Big Data (19%), indicating that higher-income companies tend to focus invest in strengthening their network architectures, optimizing data-driven decision-making, and supporting more complex operational demands - areas that typically require greater financial resources and mature business processes.

Looking ahead in the next five years, both groups anticipate strong demand for AI/ML and Data Science/Big Data skills, with higher-revenue firms emphasizing Data Science, next-gen networking, and VR/AR, and lower-revenue companies focusing on AI/ML, Cloud, IoT, and Web3/Blockchain

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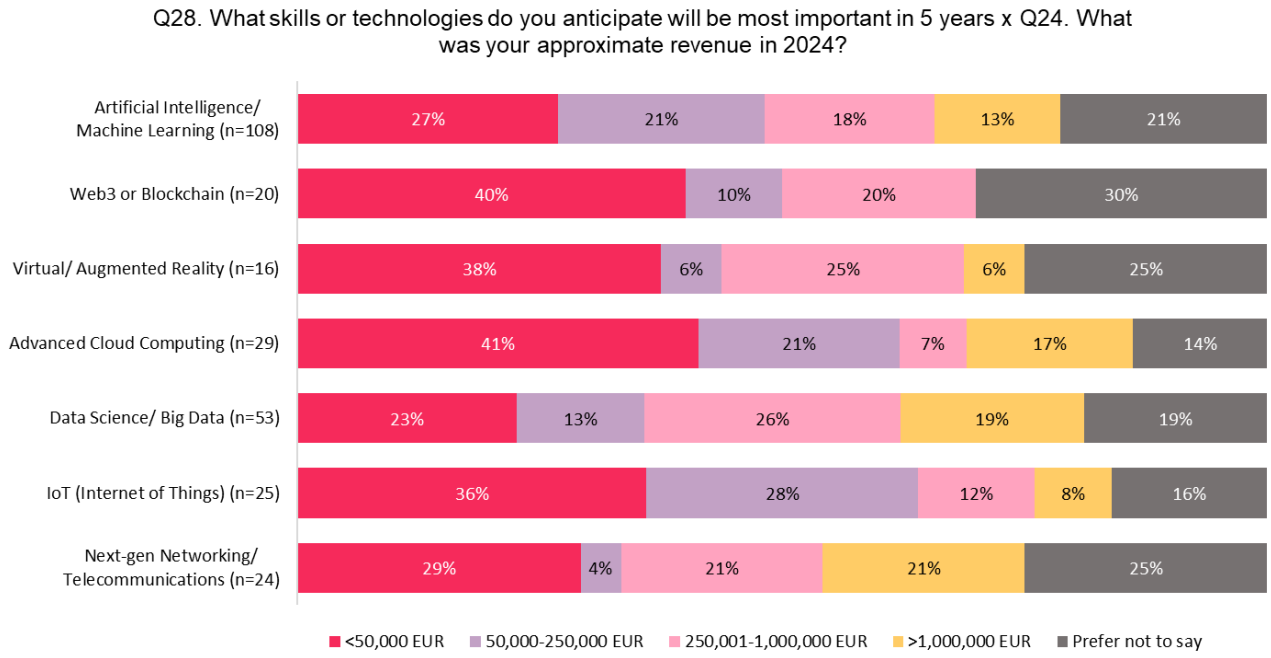
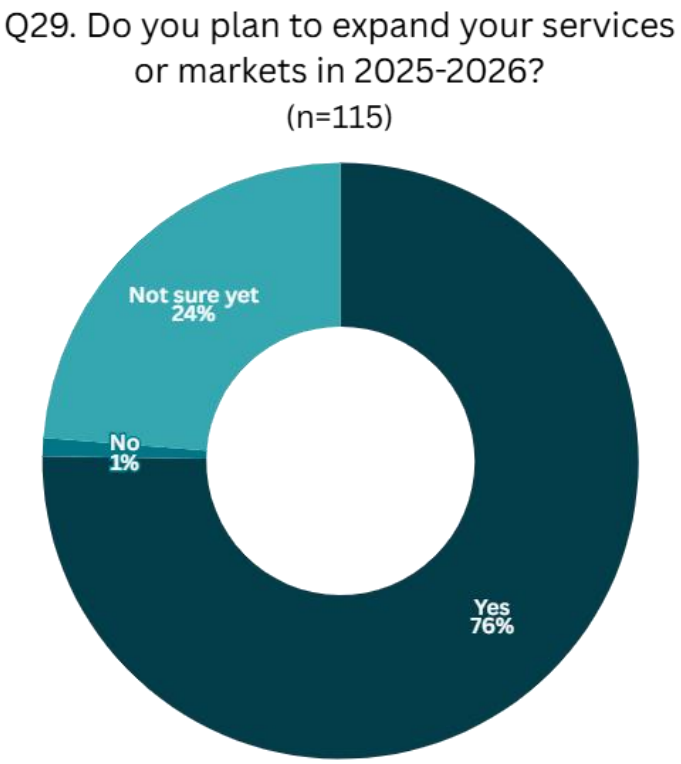


Graph 49. Future Skills and Technologies by Company Revenue (2024)

A strong majority of respondents (76%) reported that they plan to expand their services or enter new markets in 2025–2026, showing a clear forward-looking growth ambition among companies. Meanwhile, nearly a quarter (24%) of businesses remain undecided, reflecting some uncertainty about future strategies. Only 1% of respondents stated outright that they do not intend to expand, indicating that almost all companies are either planning or at least considering growth in the near term.

Micro-enterprises form the majority of those planning to expand, showing that smaller ICT firms remain the most dynamic and growth-oriented group. Small and medium-sized enterprises also show interest in expansion, though at a lower rate, while larger companies appear less active in planning future growth—possibly due to market saturation or strategic consolidation.

Overall, most firms intending to expand are small in scale, whereas the few that do not plan to grow tend to be from higher size categories. However, due to limited sample sizes among medium and large firms, the statistical significance of these differences cannot be determined with certainty.



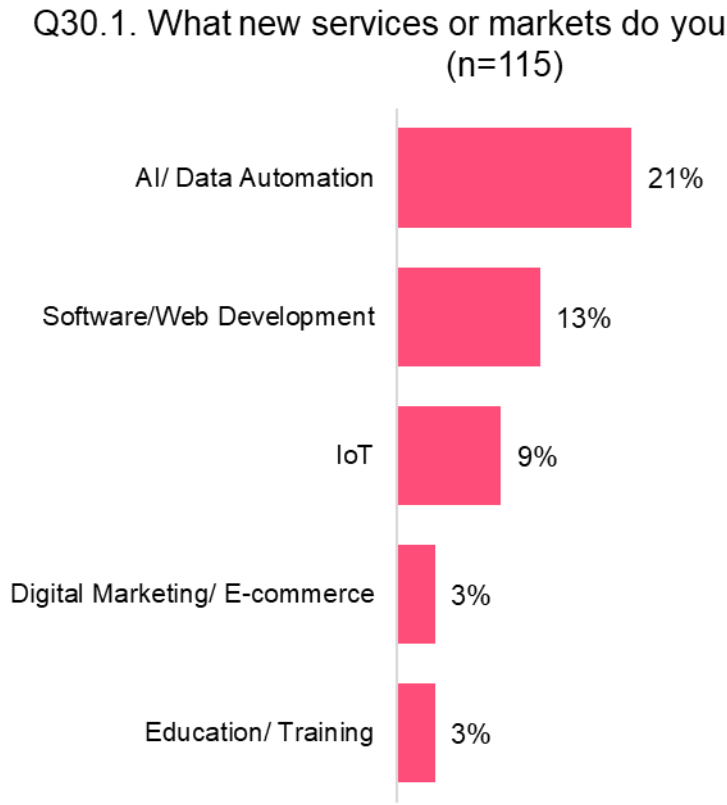
Graph 50. Plans for Expanding Services or Markets in 2025–2026

There is a clear and positive correlation between export activity and future expansion intentions. Companies that currently export are much more likely to express plans for expanding their services or markets in the coming years, while those that do not export tend to remain hesitant or uninterested in future expansion. The relationship between these two factors is statistically significant ($p = 0.0067$), meaning that firms with export experience are considerably more growth-oriented and outward-looking. This suggests that engagement in international markets builds both the financial and strategic capacity for further expansion.

Table 12. Export experience as a key driver of future expansion plans

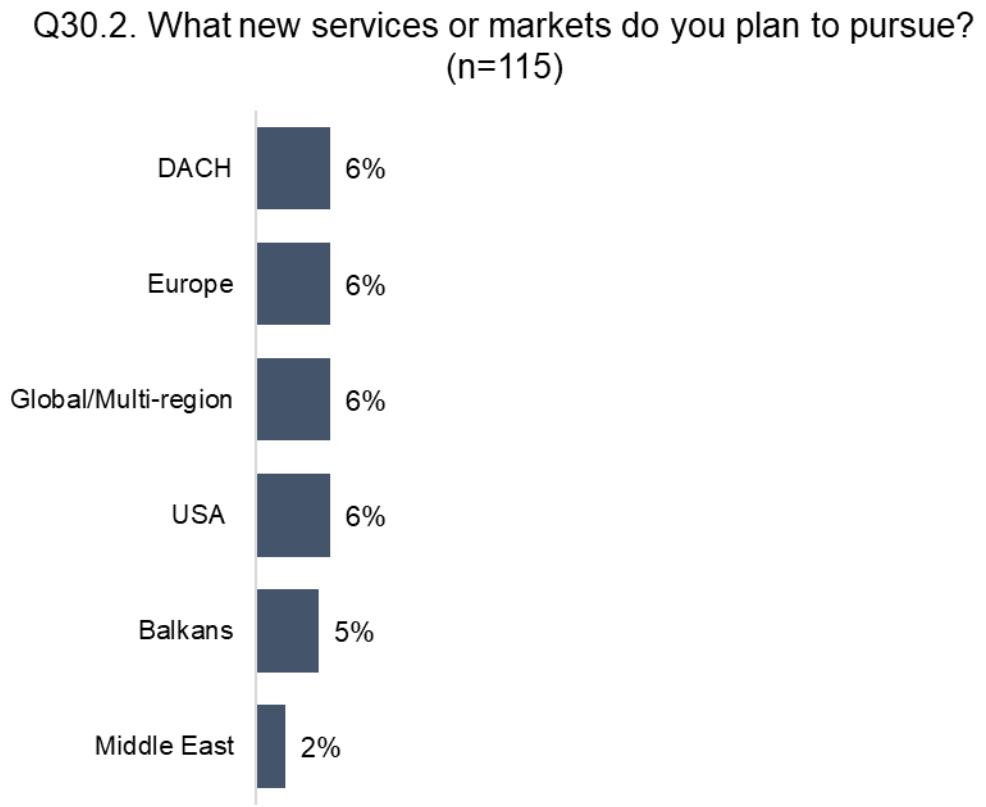
Q29. Do you plan to expand your services or markets in 2025-2026? x Q21. Did your company export any products or services in 2023 or 2024? *(p < 0.05)			
Export	Yes, planning to expand (n=87)	No, not planning to expand (n=1)	Undecided about expansion (n=27)
Yes	75%	-	48%
No	24%	100%	41%
Prefer not to say	1%	-	11%

Companies planning to expand over the next years are mainly focusing on AI/Data Automation, which emerges as the top priority, followed by Software and Web Development and IoT. These areas reflect a growing emphasis on automation, digital transformation, and connectivity within the ICT ecosystem. Other areas such as Digital Marketing/E-commerce and Education/Training attract smaller interest, showing that firms are concentrating more on technology-driven growth rather than service diversification.



Graph 51. Plans to pursue new services

When it comes to geographical expansion, companies are equally oriented toward multiple regions, including Europe, DACH, USA, and global/multi-region markets, each attracting similar levels of interest. The Balkans follow closely, while Middle East remains a less targeted market. This distribution suggests that Kosovar ICT companies are looking primarily toward Western markets for scaling opportunities, maintaining a balanced but selective international outlook.



Graph 52. Plans to pursue new markets

Section 7: Support and Collaboration

In 2023–2024, ICT company engagement in Kosovo varied by revenue. Firms with revenues above €250,000 were more active in collaborations and support programs than lower-revenue companies, except that government and institutional support was slightly more common among smaller firms. Higher-revenue companies partnered with educational institutions more extensively, primarily through internships (61%), mentorship programs (60%), scholarships (50%), and curriculum input (44%), whereas lower-revenue firms focused on joint research (50%), mentorship (33%), and internships (27%).

Participation in Dual VET programs was limited overall but higher among larger companies (12% vs. 2%), with higher-revenue firms contributing to curricula and hosting students, while smaller firms mainly hosted internships. Barriers for both groups included low awareness, limited

mentoring capacity, and lack of program relevance. Both groups expressed interest in future engagement and view Dual VET programs as effective for workforce development, though a high considerable share remain unsure.

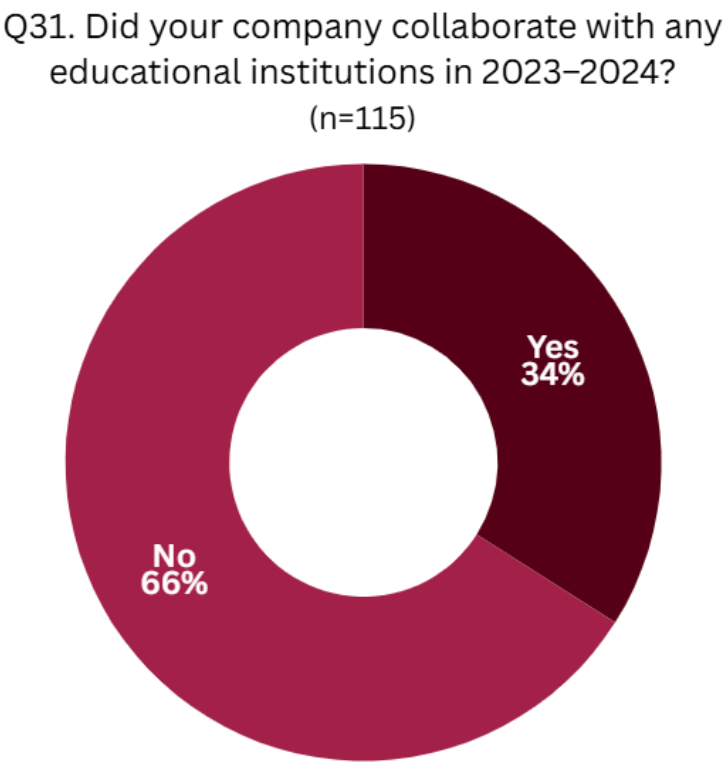
Government and institutional support was modest, slightly higher for lower-revenue firms (54% vs. 39%). Smaller firms primarily accessed grants, low-interest loans, and tax incentives, while larger firms leveraged grants, public-private partnerships, and conferences, with the Superpuna program used equally by both revenue groups. For 2025–2026, lower-revenue companies prioritize grants, investment funding, and networking, while higher-revenue firms focus on networking, tax incentives, and investment funding; training programs were cited by a small, similar share across both groups.

Compared to 2021–2022, overall engagement has slightly improved, though institutional support and educational collaboration remain key challenges, particularly for smaller firms.

Collaboration with Educational Institutions

Only 34% of companies reported collaborating with educational institutions in 2023–2024, while the majority (66%) did not engage in such partnerships. This shows that although a notable share of businesses are building links with education providers, most companies are still operating without these collaborations.

The results highlight a potential gap between the private sector and educational institutions, suggesting opportunities to strengthen cooperation in areas such as internships, research projects, and skills development to better align workforce readiness with industry needs.



Graph 53. Collaboration with Educational Institutions (2023–2024)

Among those who reported collaborating with educational institutions in Q31 (34% of companies), respondents shared the specific ways they engaged. The most common form of collaboration was internships (85%), showing that companies primarily use partnerships to create practical learning opportunities for students.

This was followed by mentorship programs (39%), curriculum input or advisory board participation (23%), and joint research projects (21%). A smaller share of companies reported providing scholarships or sponsorships (15%).

The findings suggest that while collaboration exists, it is still largely concentrated on internships, with fewer firms engaging in mentorship, curriculum development, or research partnerships that could strengthen the alignment between education and industry needs.

Graph 54. Forms of Collaboration with Educational Institutions (2023–2024)

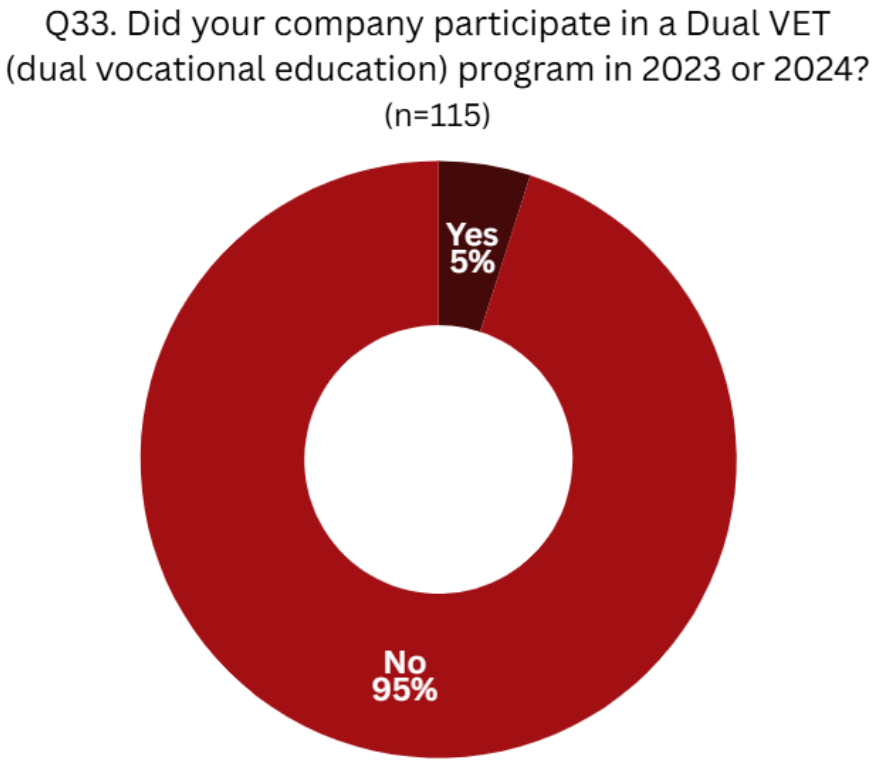
Dual VET Program Participation (Dual Vocational Education and Training in Kosovo)

The results show very limited engagement with Dual VET programs among surveyed companies. Only 5% reported participation, while an overwhelming 95% did not take part.

This highlights a major gap in linking businesses with vocational education pathways, which could otherwise help companies build a skilled workforce tailored to industry needs. The findings suggest that stronger incentives, awareness, or frameworks may be needed to increase business involvement in vocational training initiatives.

Among the few companies that reported participating in Dual VET programs (n=6), the majority were medium-sized enterprises (4 out of 6), while two were micro-sized companies.

Among the companies that reported participating in Dual VET programs, half (3 out of 6) stated that they are engaged in export activities, while the other half are non-exporting firms. These participants also represent a range of revenue levels, from 50,000 EUR up to more than 1,000,000 EUR, indicating that Dual VET engagement spans across different financial capacities. Notably, all six companies belong to the Technology Services sector, reflecting a strong link between technical industries and vocational training participation. However, due to the very small sample size, these patterns cannot be confirmed as statistically significant and should be interpreted with caution.



Graph 55. Participation in Dual VET (Vocational Education & Training) Programs (2023–2024)

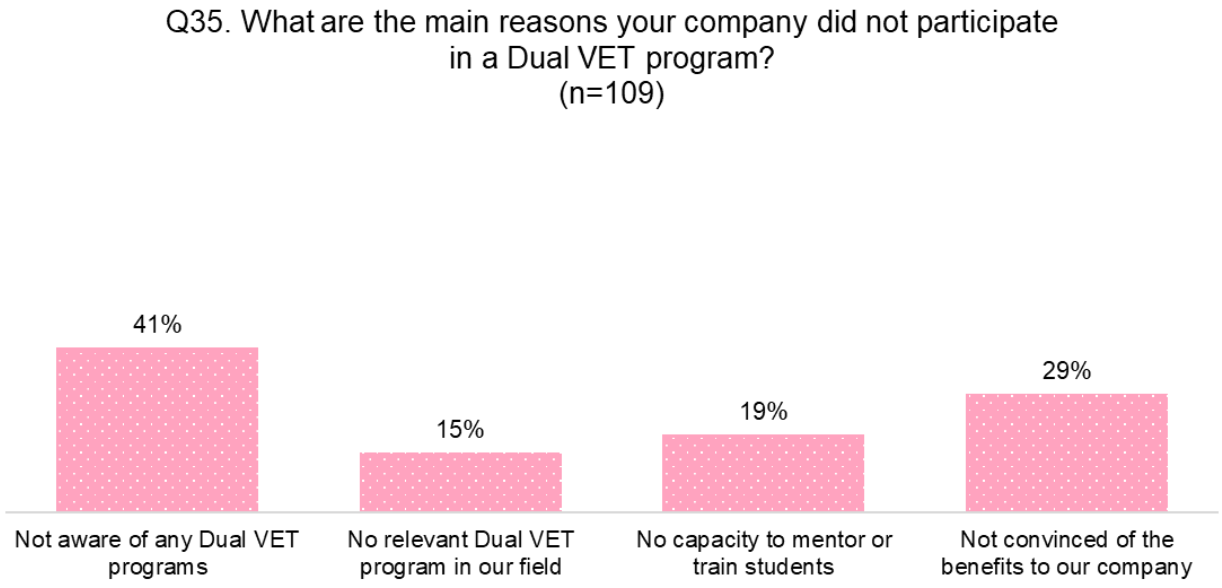
In Question 34, the companies were asked in what ways they engaged with the Dual VET program. Only six companies responded, making the base of answers very limited. Among this small group, half (50%) reported hosting Dual VET students for practical training or internships,

while the other half (50%) contributed to the program by supporting curriculum or training activities as industry partners.

This question was asked only to the companies that had not participated in a Dual VET program (95% in Q33). Among these respondents (n=109), the most common reason for non-participation was not being aware of any Dual VET programs (41%), highlighting a significant information gap.

Additionally, 29% were not convinced of the benefits to their company, and 19% cited a lack of capacity to mentor or train students. A further 15% reported that no relevant Dual VET program existed in their field.

These results suggest that low participation is driven less by outright rejection of the VET model and more by limited awareness, unclear benefits, and resource constraints. This indicates strong potential for greater involvement if these barriers were addressed through better outreach, tailored programs, and support mechanisms.

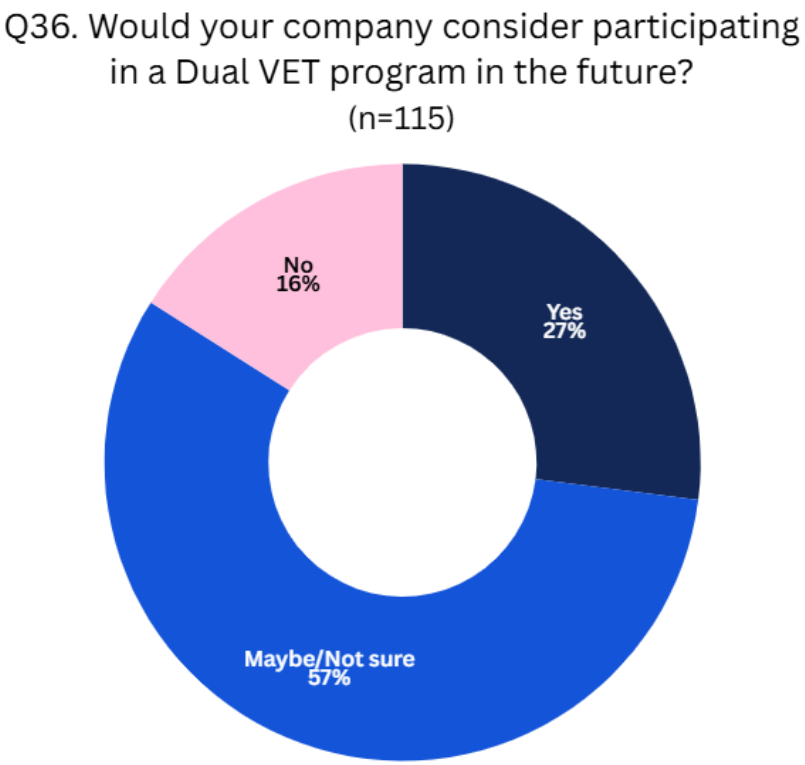


Graph 56. Reasons for Not Participating in Dual VET Programs (2023–2024)

When asked whether they would consider participating in a Dual VET program in the future, 57% of companies said "Maybe/Not sure", showing that a majority remain undecided. Meanwhile, 27% expressed willingness to participate, while 16% stated they would not.

This indicates that although current engagement with Dual VET is low (as shown in Q33–Q35), there is significant potential for future participation. The large share of undecided respondents suggests that clearer communication of benefits, better program relevance, and stronger support structures could be decisive in shifting companies toward participation.

The data suggest that smaller companies—particularly micro and small enterprises—show the strongest openness toward Dual VET participation, while medium and large enterprises remain more hesitant or uncertain. Interest declines as company size increases, implying that flexibility and resource constraints may influence willingness to engage in vocational training programs.
Companies with revenues below €50,000 are the most willing to participate in Dual VET programs, showing the highest share of "Yes" responses.
Interest gradually decreases among higher-revenue groups, where uncertainty ("Maybe") and reluctance ("No") become more common. Overall, smaller-revenue firms appear more open to engagement, while larger ones show-declining enthusiasm.
Exporting companies actually show a lower proportion responding "Yes" compared to non-exporters, but a much higher share under "Maybe/Not sure".
This indicates that exporters are more uncertain yet somewhat open to exploring Dual VET participation, while non-exporters are more divided between "Yes" and "No."
However, due to the small sample size, these differences cannot be confirmed statistically.



Graph 57. Future Consideration of Dual VET Participation (2025 and beyond)

When asked about the effectiveness of Dual VET programs in preparing skilled employees for the ICT sector, the majority of companies expressed uncertainty: 54% responded “Not sure / No opinion.” This suggests a widespread lack of familiarity or limited exposure to such programs in practice.

Among those with an opinion, 28% considered Dual VET programs to be somewhat effective, while a smaller share, 12%, viewed them as very effective. Only 6% found them not very effective, indicating that when companies are familiar with the model, perceptions tend to be more positive than negative.

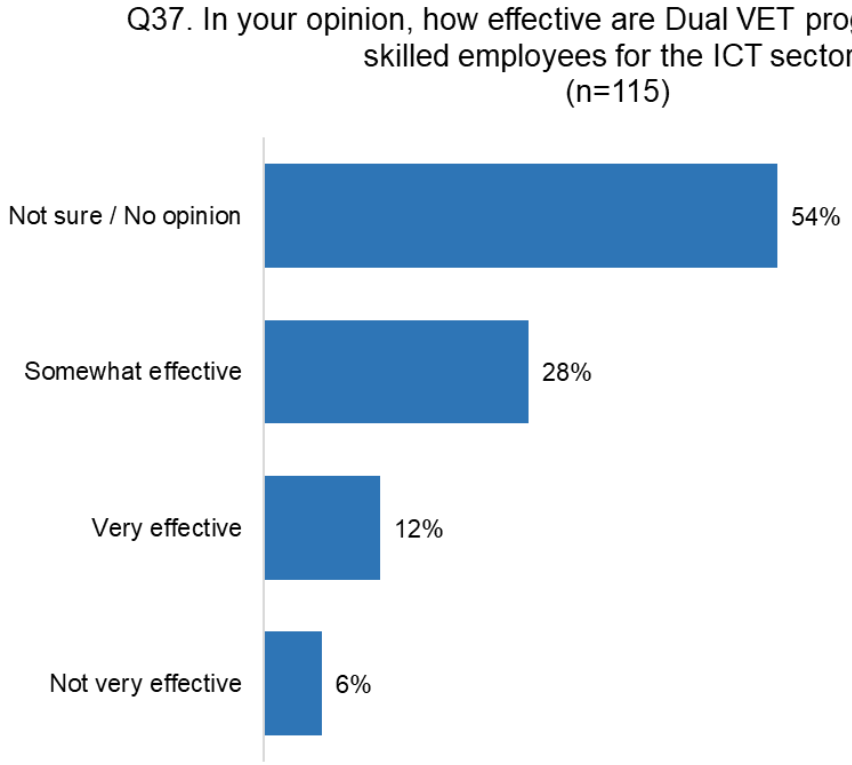
This pattern reflects both the low levels of engagement observed in earlier questions (Q33–Q35) and the untapped potential of Dual VET: improving awareness, visibility, and success stories could shift many undecided stakeholders toward stronger confidence in these programs.

Across company sizes, the combined share of respondents who perceive Dual VET programs as very or somewhat effective forms the clear majority, particularly among micro and small enterprises. This indicates a generally favorable view of these programs among smaller firms that are more directly affected by workforce readiness and training quality. However, a considerable proportion of respondents — especially within micro and small enterprises — also expressed uncertainty, selecting “not sure” or “no opinion.” This suggests that while many recognize the potential of Dual VET programs, there is still limited familiarity or direct experience with their outcomes in practice.

Exporting companies tend to view Dual VET programs more favorably overall, with most rating them as either very or somewhat effective in preparing skilled employees. This suggests that businesses exposed to international markets may better recognize the value of practical, skill-based training. In contrast, a notable share of non-exporting companies expressed uncertainty or limited awareness, indicating that familiarity with such programs may depend on a firm’s external engagement and exposure to broader workforce standards.

Perceptions of Dual VET program effectiveness appear broadly positive across all revenue groups, with companies of varying turnover levels largely considering them effective. However, a considerable share of lower-revenue firms and those preferring not to disclose income remain uncertain or without a clear opinion, suggesting that awareness or direct experience with such programs may be less established among smaller or less transparent businesses.

Due to the small subgroup sizes, these differences should be interpreted cautiously and are not statistically significant.



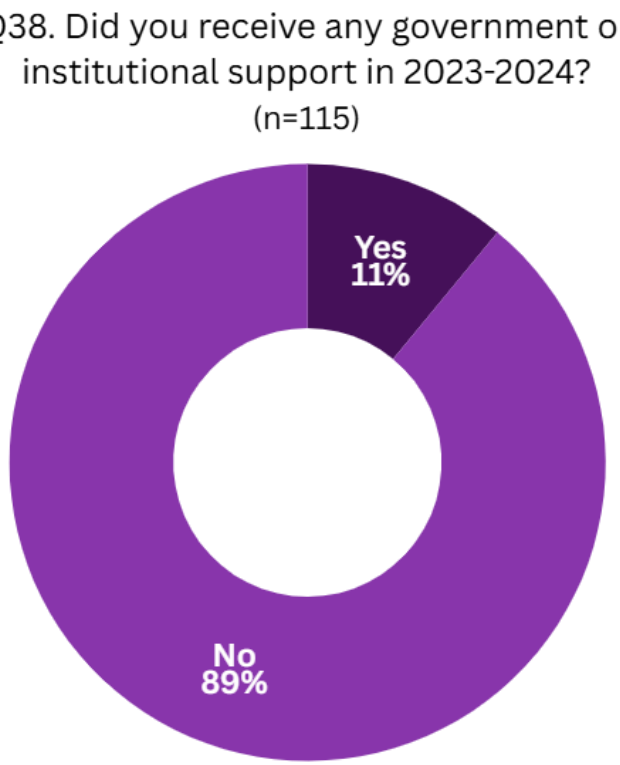
Graph 58. Perceived Effectiveness of Dual VET Programs in Preparing Skilled ICT Employees

Government and Institutional Support

Support from government or institutions was rare during 2023–2024. Only 11% of companies reported receiving such assistance, while the overwhelming majority, 89%, did not benefit from any support.

This finding highlights a gap between business needs and institutional backing. Considering the challenges reported in earlier questions (e.g., hiring skilled staff and access to finance in Q26), the low share of support suggests that many companies may be facing these issues without adequate external assistance.

Rather than showing an evenly distributed landscape, the results point to limited intervention and untapped potential for government and institutional programs to strengthen the ICT and wider business ecosystem.

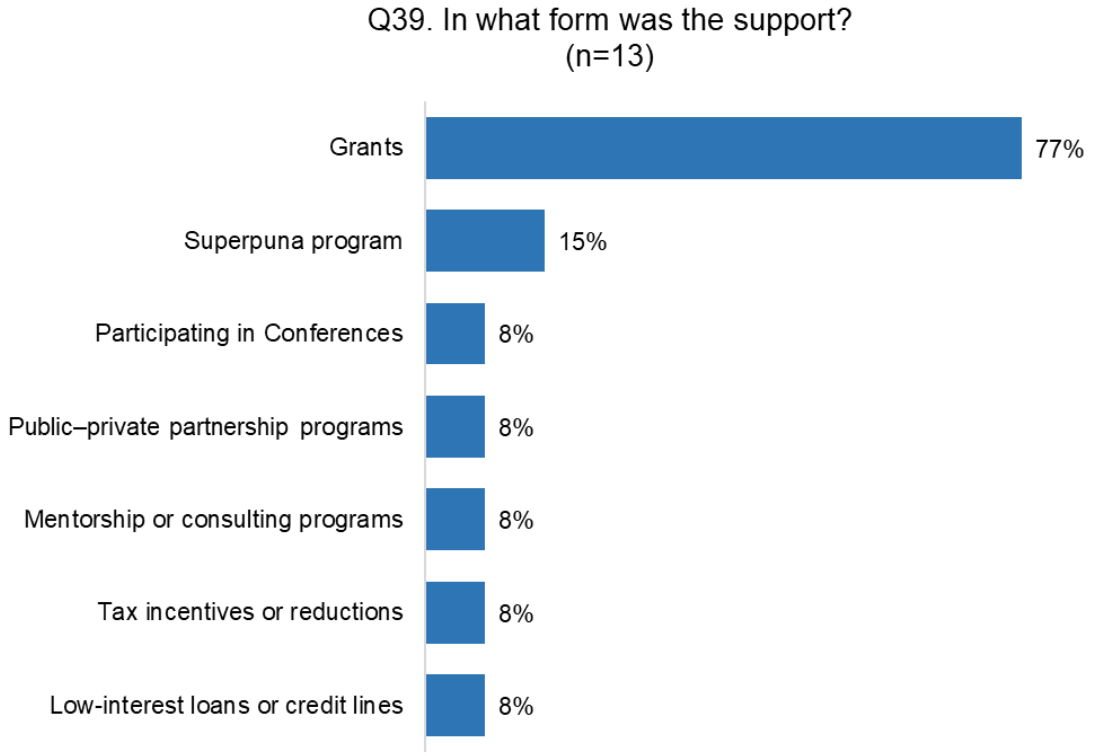


Graph 59. Government or Institutional Support Received (2023–2024)

Only those companies that reported receiving government or institutional support (11% from Q38) were asked to specify the form it took. Within this small group of respondents (n=13), the vast majority pointed to grants (77%) as the primary type of assistance. The Superpuna program was also mentioned by 15% of respondents, showing its role as a secondary but notable source of support.

Other forms of assistance were mentioned much less frequently, with 8% each citing participation in conferences, public–private partnership programs, mentorship or consulting programs, tax incentives or reductions, and low-interest loans or credit lines.

This indicates that while some diversity of support mechanisms exists, assistance is heavily concentrated in grants, with programs like Superpuna providing additional but less widespread benefits.



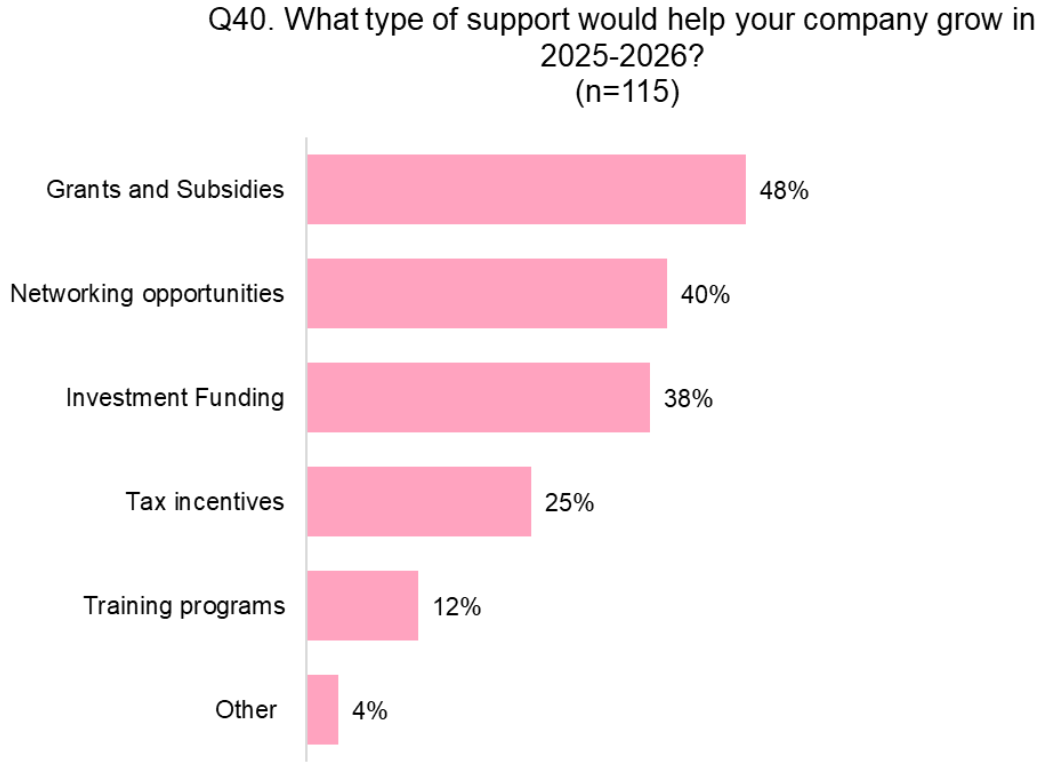
Graph 60. Forms of Government or Institutional Support Received (2023–2024)

Looking ahead to 2025–2026, companies highlighted several forms of support that would be most valuable for driving growth. The most frequently cited was grants and subsidies (48%), confirming the continued importance of direct financial assistance.

In addition, firms placed high importance on networking opportunities (40%) and investment funding (38%), underlining that beyond grants, access to partnerships, investors, and new markets is also seen as essential.

Meanwhile, tax incentives (25%) and training programs (12%) were mentioned less frequently, while only 4% selected other forms of support.

Overall, the responses suggest that companies are not only looking for financial aid, but also for strategic enablers like connections and investment channels to fuel their next stage of growth.



Graph 61. Types of Support Companies Expect for Growth in 2025–2026

Conclusions

1. Profile and Characteristics of Kosovo ICT Companies

Kosovo's ICT sector is largely composed of young, micro-sized, technology-focused companies, with the majority established since 2020 and concentrated in Prishtina. The sector remains strongly male-dominated, particularly in technical roles, while Creative Services show slightly higher female representation. Most firms operate without formal certifications, though certified companies are more prepared for international engagement. Despite growth and increased professionalization since 2021–2022, persistent talent shortages and limited gender diversity highlight key areas for workforce development and targeted support initiatives.

2. Adopted Technologies and Provided Services

Kosovo's ICT companies are predominantly technology-focused, offering software development, web development, and IT support, with specialized areas like cybersecurity and big data less common. JavaScript, C#, and PHP remain the core programming languages, while frameworks such as React, .NET Core, and Angular dominate development practices. Cloud adoption is concentrated on major providers (AWS, Azure, GCP), and AI tools are now widely integrated across technology and creative services for coding, design, marketing, and analytics. Creative firms focus on digital marketing and design, using both inbound and outbound strategies supported by professional tools and AI. Overall, the sector shows rapid technology adoption, innovation, and efficiency, highlighting the importance of upskilling and vocational training to meet evolving industry needs.

3. Workforce Dynamics, Skills, and Talent Readiness

Kosovo's ICT workforce continues to grow and become more technically oriented, yet the sector is still largely composed of micro-enterprises with limited internal capacity. Skills shortages first identified in 2021–2022 remain unresolved—particularly in programming, Data/AI, and cybersecurity—despite an increasing number of graduates and gradual salary growth, with pay levels still falling short of international standards and affecting retention. Company structures remain narrow, with many firms lacking non-technical roles and displaying notable gender imbalances, though some mid-sized enterprises show early signs of broader team composition. Firms that offer remote-work options are better positioned to attract talent, reflecting changing workforce expectations. Training investments continue to be modest, and graduates often lack

practical experience, highlighting the need for stronger collaboration between VET providers and industry. Overall, the sector is advancing, but must accelerate practical skill development and reinforce talent pipelines to keep pace with rising market demands.

4. International Orientation, Revenue Patterns and Market Reach

Kosovo's ICT sector is highly export-oriented and dominated by micro-enterprises, with most firms earning below €250,000, while medium and large companies generate higher revenues above €1 million. About 68% of companies operate in international markets, particularly the DACH region (Germany, Austria, and Switzerland) and the United States, and nearly half rely exclusively on exports, highlighting limited local-market focus (slightly more than half). Higher-revenue firms serve diverse global clients, offer advanced services such as cybersecurity, telecommunications, and big data, and leverage AI and strategic client acquisition, while lower-revenue firms focus on nearby markets and rely on referrals, indicating trust-based growth rather than systematic marketing or institutional support. Key client industries include ICT, retail/e-commerce, finance, health, and technology, reflecting broad international integration. Compared with 2021–2022, the sector shows signs of professionalization, including slightly higher salaries, broader technology adoption, and greater global engagement.

5. Challenges and Future Outlook

Kosovo's ICT sector in 2023–2024 faces key challenges in talent acquisition, client growth, and access to finance, with micro- and lower-revenue firms most affected. Higher-revenue companies encounter more cybersecurity risks, reflecting their larger scale and global operations. AI/ML, Data Science/Big Data, Cloud, IoT, and next-generation networking are expected to dominate skills demand over the next five years, with smaller firms showing greater adoption of emerging technologies. Most companies plan to expand services and enter new markets, particularly those already engaged in exports. Compared with 2021–2022, challenges have shifted toward financial constraints, economic uncertainty, global competition, and technology-related risks, while overall sector modernization and internationalization continue.

6. Support and Collaboration

Kosovo's ICT sector shows limited engagement with educational institutions and government support programs, with larger firms more active in internships, mentorships, and curriculum input. Participation in Dual VET programs remains very low, though smaller companies express strong interest if awareness and program relevance improve. Government support is modest, focused primarily on grants, while companies emphasize the need for funding, networking, and investment opportunities to drive growth. Export-oriented firms recognize the value of practical training in building a skilled workforce, linking international exposure with workforce development. Expanding public-private partnerships and targeted support will be critical to addressing talent gaps and fostering sustainable, inclusive sector growth.

Recommendations

Based on the findings of the Kosovo IT Barometer 2023–2024, several targeted actions are recommended to strengthen the ICT sector's growth trajectory and address its persistent challenges.

1. Strengthen Workforce Development and Talent Pipelines

Kosovo's ICT sector should expand partnerships between companies and vocational education and training (VET) institutions. Promoting Dual VET participation across all company sizes, through targeted outreach, awareness campaigns, and tailored program relevance, can help address persistent shortages in programming, Data/AI, cybersecurity, and other emerging technologies. Companies are encouraged to offer remote-work options and structured internships, while fostering gender diversity in technical roles and ownership, to attract and retain skilled talent.

2. Support Scaling and Market Diversification

Kosovo's ICT sector, largely composed of micro- and small enterprises that make up roughly two-thirds of the market and often earn under €250,000 annually, would benefit from targeted initiatives to foster growth and diversification. Programs should offer tailored business development services, export support, and incubation or acceleration opportunities to help companies scale beyond their early stages and enhance long-term sustainability. Prioritizing firms outside Prishtina can promote regional development, reduce geographic disparities, and strengthen a more balanced national ICT ecosystem.

3. Promote Technology Adoption and Upskilling

Supporting technology adoption and upskilling is critical for sector competitiveness. Training programs in AI/ML, Data Science, Cloud, IoT, and next-generation networking should be widely accessible, alongside certification initiatives and continuous professional development. Encouraging the adoption of modern frameworks, cloud services, and development tools will

enable creative and technical services to innovate efficiently and respond to evolving market needs.

4. Expand Financial and Institutional Support

Financial and institutional support must be expanded to sustain growth, particularly for micro- and small ICT companies. Accessible funding mechanisms, grants, and investment opportunities should be paired with public-private partnerships that offer mentorship, networking, and market expansion guidance. Government programs like Superpuna can be strengthened with new incentives for skills development, research, and internationalization, alongside support and engagement from international donors and financial institutions, can accelerate Kosovo ICT companies' global growth.

5. Facilitate Internationalization and Market Expansion

Facilitating internationalization and market expansion remains a priority. Companies should be assisted through trade missions, international fairs, B2B matchmaking, and partnerships with foreign chambers of commerce to scale operations, especially in key markets such as the DACH region and the United States. Complementary guidance in client acquisition, marketing, and cybersecurity will help firms maintain global competitiveness, while diversifying client sectors can enhance resilience against economic uncertainties.

6. Promote Inclusiveness and Sustainable Growth

The ICT sector should be positioned as a driver of Kosovo's broader economic development. Promoting inclusiveness and sustainable growth will reinforce the sector's long-term prospects. Gender-focused initiatives should increase women's participation in ICT, particularly in technical and leadership roles. Aligning workforce development and VET programs with broader sustainability, innovation, and social development goals will support youth employment, lifelong learning, and inclusive growth, ensuring that Kosovo's ICT sector thrives as a competitive, globally integrated, and sustainable digital economy.

Kosovo's ICT ecosystem should be supported through an integrated approach that strengthens talent pipelines, fosters growth, and promotes technology adoption, while expanding financial,

institutional, and international support. Targeted programs for scaling, upskilling, and market diversification will enhance competitiveness and resilience, moving the sector from a fragmented collection of small firms toward a more integrated and globally competitive industry. Emphasizing inclusiveness, gender diversity, and sustainable growth will ensure ICT contributes to both economic and social development, securing Kosovo's place in the global digital economy.