

PRESENT STATE AND FUTURE POTENTIAL OF THE INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT) SECTOR IN KOSOVO

Prishtina, 2022

Prepared for:

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Supported by:

Supported by the Project "KSV 019 Technical Assistance in the context of European Integration" implemented by the Office for Economic Criteria and Internal Market in the Office of the Prime Minister and financed by the Government of Luxembourg.

Acknowledgement:

The author expresses profound gratitude to the Trade Department staff for their support in compiling this report.

Place:

Prishtina, Kosovo

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List of Abbreviations

BoP – Balance of Payment

BPO – Business Process Outsourcing

CMMI – Capability Maturity Model Integration

DACH – Germany, Austria, and Switzerland

DIH – Digital Innovation Hubs

EITO – European Information Technology Observatory

ENIF – Enterprise Innovation Fund

EU – European Union

FOSS – Free and open-source software

ICK – Innovation Centre Kosovo

ICT – Information and Communication Technology

IFME – Institute for Free Market Economy (IFME)

IPR – Intellectual Property Rights

ISO – International Organization for Standardization

IT – Information Technology

KITB – Kosovo IT Industry Barometer

KSA – Kosovo Statistics Agency

MED – Ministry of Economic Development

MIET – Ministry of Industry Entrepreneurship and Trade

R&D – Research and Development

SEA – Search Engine Advertising

SEO – Search Engine Optimization

SITC - Standard International Trade Classification

STIKK – Kosovo Association of Information and Communication Technology

TAK –Tax Administration of Kosovo

WB - Western Balkan

WDI – World Bank World Development Indicators

Preface

The digital economy plays a pivotal role for the economic development of any country and in this context, Kosovo is not an exception. Especially Information and Communication Technology (ICT) which despite being relatively new sector, it has rapidly developed and currently it is among the top priority sectors that contribute to economic development of the country. Among others, ICT is seen as an attractive sector for promoting the export, creating jobs for the youth, returning the youth from diaspora and most importantly keeping young talents in Kosovo.

This purpose of this assignment is to analyze the trade performance of sector, by identifying the main services exported and those imported, and the underlying factors that might assist in explaining the trade performance. Moreover, the present study offers an overview of the ICT sector in Kosovo, by providing insight concerning current status, needs, potential, and barriers that companies of this sector face. This study of the ICT sector will help to further support the potential of companies, address their needs, and raise awareness on the importance of the ICT sector on the economic development of the country.

In line with the purpose of the study, the proposed methodology for this task is based on mixed research methods comprising a combination of in-depth assessment analysis and survey with ICT companies. The work within this component is primarily based on the following points: desk research and review of relevant documents, qualitative semi-structured interviews with stakeholders, and quantitative survey with ICT companies.

Drawing on both qualitative and quantitative evidence, the present study provides important practical implications and policy recommendations for government, business associations and ICT companies.

This report was produced within the framework of the efforts of the Ministry of Industry, Entrepreneurship and Trade (MIET) and it is part of the Human Capacity Development Facility (HCDF). The study is conducted by the Institute for Entrepreneurship and Small Business (IESB) represented by the author and the lead expert Besnik Krasniqi. Whereas, the report is reviewed from representatives of MIET.

1. Introduction

Kosovo economy grew consistently above the Western Balkans average in the post-global financial crisis period, albeit from a low base (CIVITTA International, 2021). The private sector and digital economy play a vital role for the economic development of any country, and this hold for Kosovo as well (European Commission, 2019b). In this context, the Information and Communication Technology (ICT) sector in Kosovo is relatively new, however it is rapidly developing year after year (STIKK, 2021). Given its potential, the Government of Kosovo has recognized and listed the ICT sector among the six top priority sectors that contribute to economic development (ECIKS, 2020). ICT is seen as an attractive sector for economic growth, promoting the export, a critical sector for creating jobs for the youth, return of the youth from diaspora and to keep young talents in Kosovo (IFME, 2020). Additional feature of ICT is that it represents an important indicator of innovation and knowledge-based activities, which in turn have an impact on economic growth (Simnica & Jashari, 2017).

Kosovo is not part of the 131 economies ranked on innovation performance by the WIPO, thus data is not available regarding this parameter. Moreover, European Innovation Scoreboard does not include Kosovo. Kosovo does not have an innovation survey, and data availability is relatively poor.

ICT sector in Kosovo is characterized by a large number of small and medium-sized companies with limited capacities for large-scale projects and endeavors. The small-size of the domestic market, low labor costs, and relatively skilled labor in some sub-segments have been the effective drivers of continuous growth of export of services among the ICT companies in Kosovo (STIKK, 2014). This in turn has conditioned the business process outsourcing (BPO) to be the best model for exporting software development services, telemarketing, mobile application development, and multimedia production.

The remainder of the study is organized as followed. The next section provides a definition of the ICT, portrays the profile of the ICT firms in Kosovo, summarizes figures of the sector, and depicts the landscape of the sector. Next, strengths and barriers of the ICT sector deriving from the desk research are drawn. After methodology aspects, results from survey and qualitative interview are represented discussed. Finally, implications and recommendations for different stakeholders are drawn.

2. The ICT sector in Kosovo

2.1 Definition of ICT

Digital economy, also known as the internet economy, by its definition refers to the economy based on ICT technologies (European Commission, 2019b). The ICT sector by its nature and its broad definition is diverse and it ranges from suppliers of hardware and basic information technology (IT) services to communications infrastructure, software development, e-commerce, retail and business process outsourcing (IFME, 2020). Two of the most widely used definitions of ICT are provided by European Information Technology Observatory (EITO) classification and World Bank World Development Indicators (WDI). EITO's definition of IT is based in three main pillars: IT equipment (servers, storage, workstations, PCs, media tablets, multifunction printers, other IT equipment), software (system infrastructure software, application development and deployment, application), and IT services (project, outsourcing excluding BPO), support and deploy, BPO services including business consulting) (EITO, 2016). Whereas, according to WDI dataset drawn from the International Monetary Fund Balance of Payments Statistics, ICT encompasses telecommunication services, communication services, and information services (IMF, 2009). In this study, we follow the IT strategy by Ministry of Economic Development (MED) (2018) and adopt the definition of EITO.

2.2 The profile of ICT firms in Kosovo

Table 1 summarizes the characteristics of the ICT firms in Kosovo and the trade performance of the sector.

Table 1. Summary of the main figures of the ICT sector in Kosovo

Dimension	Figures	
Number of firms	120	European Commission (2019)
Size	Micro (84.5%) Small (12.7%) Medium (2.4%) Large (0.4)	MTI (2014)
Employment in ICT	13,893 (4% of total employees)	ASK (2022)
ICT service export / import	98.8 / 48.0 million Euro	Central Bank of Kosovo (2022)
IT/ICT equipment export / import	9.8 / 114.8million Euro	ASK (2022)
Exporting companies	91%	STIKK (2021)
International portfolio	75%	

Target markets / Export potential	Germany (46.88%) / (83.87%) USA and Canada (46.88%) / (64.52%) Switzerland (37.50%) / (58.06%)	
Exporting modes	Direct exports (73.53%) Subsidiary (20.59%) Distribution partner (20.59%) Joint venture (14.71%) Representative office (11.76%)	

According to IFME (2020), there is a contradiction related to employment statistics and the number of ICT companies in Kosovo, mainly because of the definition and the scope of the ICT sector. For instance, according to the Kosovo Association of Information and Communication Technology (STIKK), the number of ICT companies and total employees in these companies are smaller compared to the data reported by the Kosovo Statistics Agency and the business registry of Ministry of Industry Entrepreneurship and Trade (MIET). The latter employ a broader ICT definition and scope and consequently report a higher number of ICT firms and employees in the ICT sector. Notwithstanding the contradiction among sources, MTI (2018) estimates that 85.3% of the workforce in Kosovo were employed in the services sector in 2018. In 2020, the number of employees in the ICT sector was 13,893 or 4% of the total employment rate (ASK, 2022). Based on the analysis of the official national statistics, IFME (2020) shows that employment in ICT almost doubled in the last four years. Remarkably, female employment shows a huge increase in 2019, after lagging male employment for a number of years. The average (gross) monthly salary in 2020 this sector was 697 Euro (ASK, 2022).

Concerning the number of ICT firms in Kosovo, official statistics from Kosovo Business Registry indicate that there are 220 registered companies exist in this sector, among which 120 are considered to be active (MTI, 2014; IFME, 2020). In the IT Strategy, MED (2018) also reports that there are about 120 IT companies. This is in line with Economic Reform Programme (ERP) 2019-2021, which report that off the 571 businesses registered as having ICT as their primary activity, only about 120 of them are businesses really providing ICT products and services (European Commission, 2019).

The majority of companies in the ICT industry are micro and small businesses. According to the Tax Administration of Kosovo database, 84.5% are micro businesses, 12.7% small, 2.4% medium, and 0.4% are large enterprises (MTI, 2014). The main funding sources of ICT firm in

Kosovo consist of loan facilities (commercial banks and the Kosovo Credit Guarantee Fund), venture capitalists and business angels' investments, WB ENIF funds, COSME, and HORIZON 2020 (PwC, 2020).

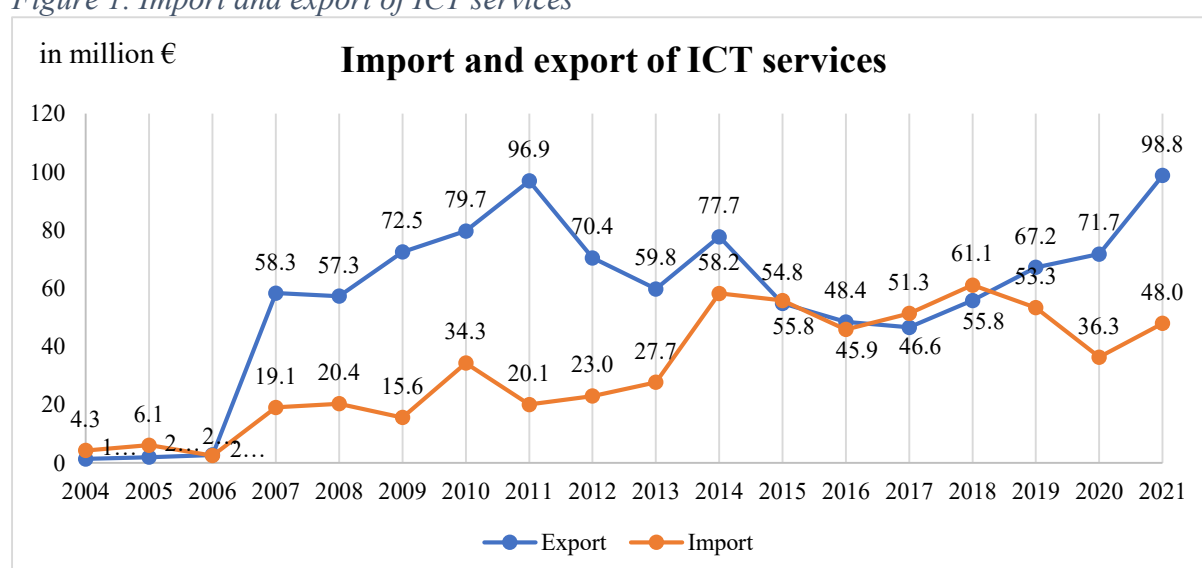
The STIKK and Index Kosova's (2013) analysis revealed the most critical technical and management skills needed by IT companies in Kosovo. The most needed technical skills by ICT firms were: CCNP, Java, C++, MySQL, OraclePHP, ASP, Perl, Python, HTML, Linux. Whereas, in terms of management skills, the most needed skills by ICT companies were: marketing, sales, project management, contract management, business analysis.

2.3 Figures of the ICT sector in Kosovo at a glance

According to the latest Kosovo IT Industry Barometer (KITIB) (2021), around 91% of the IT companies in Kosovo export their services/products to international markets. This percentage increased by more than a quarter in three years when 74% of ICT companies in Kosovo exported their services and products (STIKK, 2018). Further, the latest results indicate that when compared to the percentage of local and the international market, on average 75% of the IT companies work in international markets, compared to the local market which is an average of 25% of their income.

According to time series data of Central Bank of Kosovo (2022), the export of ICT services in 2021 Kosovo reached a record of 98.8 million Euro. Whereas the import of ICT services in 2021 was 48.0 million Euro. This yields a 50.8 million Euro positive trade balance of ICT services. The results come from the Balance of Payment (BoP) transactions and include the export and import of telecommunications, computer, and information services.

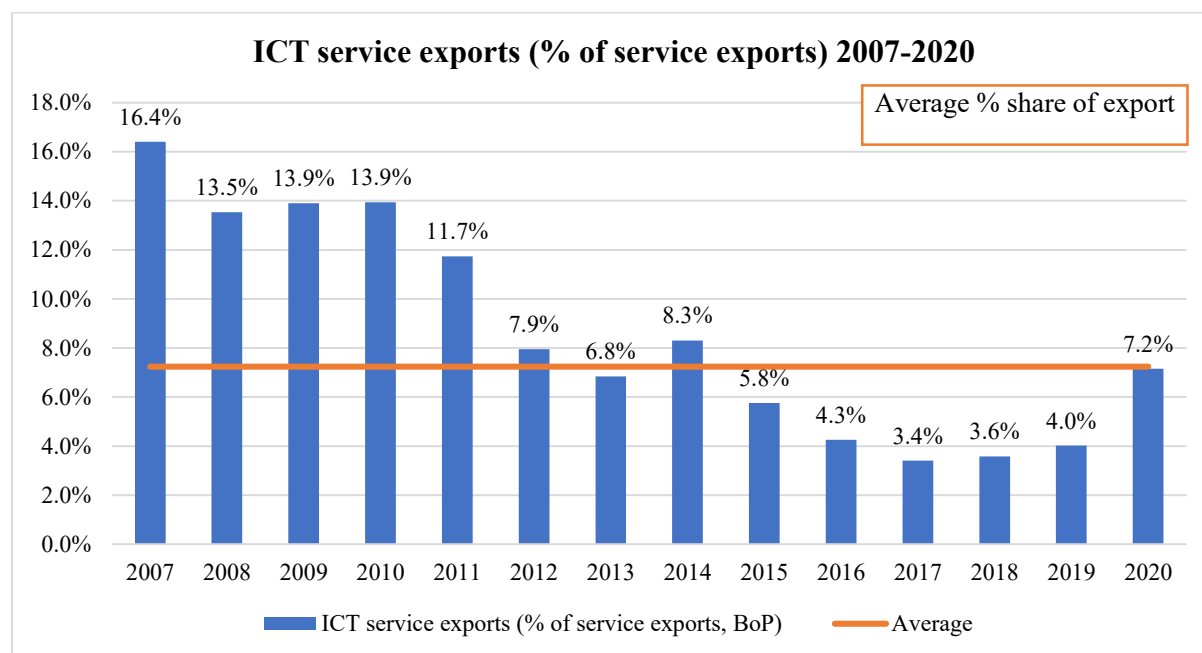
Figure 1. Import and export of ICT services



Source: Central Bank of Kosovo data processed by the author

Whereas, according to World Bank (2022), during the period 2007-2020 the share of ICT service export to total service export (BoP) in Kosovo ranged between 3.4% and 16.4%. The average percentage during this period was of 7.2%.

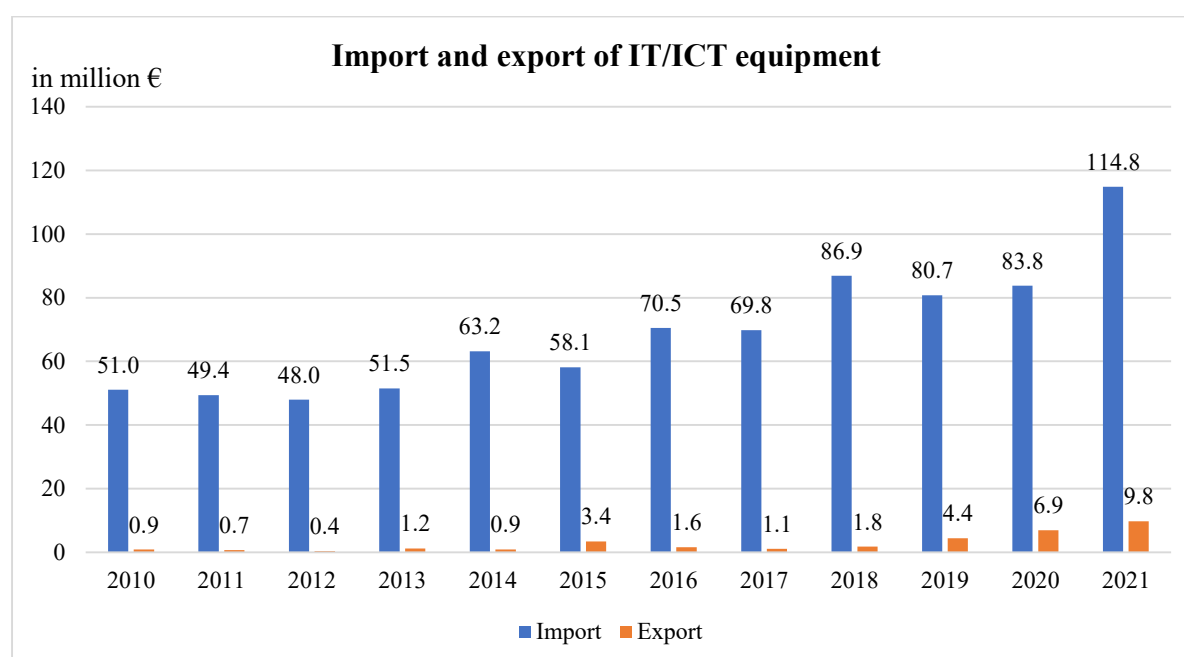
Figure 2. The share of ICT service export to total service export



Source: World Bank data processed by the author

The figure below presents the amount of imported and exported IT/ICT equipment in Kosovo from 2010-2021 (in Euro). Based on the Standard International Trade Classification (SITC), this amount included office machines and automatic data -processing machines (SITC 75) and telecommunications and sound -recording and reproducing apparatus and equipment (SITC 76). Although both import and export has an increasing trend, import is significantly larger surfacing the general negative trade balance that already exists in Kosovo.

Figure 3. Import and export of IT/ICT equipment



Source: Kosovo Agency of Statistics data processed by the author

The sub-sectors linked to the ICT industry in Kosovo, which are deemed to have potential for export and niche market opportunities abroad, are mainly focused on software development, engineering services, network and system operations, e-procurement, BPO, mobile applications development, digital marketing (specifically SEO and SEA), post production enhancement (media), telemarketing and support centers (call centers), ICT consulting, and cyber security (STIKK, 2014; PwC, 2020). Kosovo IT companies reveal specific capabilities in the areas of custom software development, web development/web design, mobile applications and software testing (MED, 2018). Specifically, Kosovo IT companies have built up capabilities in the areas of software testing (ISTQB) and IT security (ISO 27000). Whereas when asked about their core competitive advantages, the companies list the advantages in the following order: the quality of their work; technical know-how, sector know-how; horizontal know-how; cultural knowledge; prices they provide; knowledge of languages (STIKK, 2021).

Companies have found different ways to do business with international companies, by far the most popular way is direct exports to the client abroad, followed by doing business through a subsidiary/branch office in the target market, distribution partner/local partner, joint venture, and representative office (STIKK, 2021). In 2019, the revenues from exporting in the EU market are almost three times higher compared to exports in non-EU countries (51% in EU countries and 14% in non-EU countries) (PwC, 2020). KITIB revealed that in 2021 the most

important export markets for the Kosovo IT industry were Germany (46.88%), followed by North America (USA and Canada) with 46.88% and Switzerland (37.50%). According to the companies, all markets that they actually export have much higher potential for export as well. Specifically, companies rated that the countries with the highest export potential are Germany (83.87%), USA and Canada (64.52%) and Switzerland (58.06%).

Despite the nature of the sector and its pioneering into innovation and development, e-commerce remains a very limited sales channel for Kosovan ICT companies (STIKK, 2014). This is largely due to the limited local infrastructure for e-business, which has resulted in reduced interest of local companies to utilize this sales channel. According to European Commission (2019), the main issue regarding e-commerce in Kosovo is the lack of online payment system and big e-commerce and e-payments platforms such as Amazon and PayPal do not have Kosovo in their payment list. Another issue associated with the lack of domestic e-commerce development might be the lack of and availability of reliable data and statistics to rely on.

In terms of using the internet and other electronic services for business purposes, it could be demonstrated that businesses in Kosovo are generally at an early stage (European Commission, 2019b). However, it is worth mentioning that the population of Kosovo is gradually becoming more educated in the field. According to the latest analysis by the Kosovo Statistics Agency, access to the internet across Kosovo has greatly grown in the last years, making it one of the countries with the highest percentage of internet access in households. Namely, in 2021, 96.1% of the households in Kosovo had access to internet from home (ASK, 2022). Whereas, With World Bank support, the internet penetration reaches 135 percent in Kosovo, outpacing leading EU countries (World Bank, 2022). ASK (2020) shows that among internet users, the leading age group is 35-44 years old (19.5%). The majority of internet users are men with 57.4%, compared to women counterparts with 40.2 % of users. The full list of ICT-related indicators in Kosovo is found in Annex 1 of this document.

2.4 The landscape of the ICT in Kosovo

The ICT landscape in Kosovo is diverse and covers a comprehensive range of public, private, domestic and international organizations. First, the landscape consists of the regulatory and policy-setting organizations that are encouraging or shaping the upgrading of ICT in Kosovo such as Ministry of Education, Science, Technology and Innovation, Ministry of Economy, Ministry of Public Administration, namely Agency for Information Society, and Kosovo Investment and Enterprise Support Agency. Second, organizations that directly promote,

support and develop ICT acting as incubators/accelerators such as STIKK, ICK, Open Data Kosovo, CEED Kosovo, UNICEF Innovations Lab, Gjirafa Lab, Innovation Centre Jakova, and Prishtina Hackerspace. Third, higher education institutions that provide education, research and other support, such as public universities, private colleges, and other education activities such as jCoders Academy, Venture UP, and Kosovo Virtual Incubator Fourth, organizations that indirectly support and promote ICT, such as Chambers of Commerce and BONEVET (IFME, 2020; PwC, 2020).

Concerning the institutional environment, IFME (2020) claims that the support of the ICT sector is not government-wide as there were duplication and fragmentation of responsibilities. However, despite this criticism, the list of public sector departments and programs involved in promoting ICT has increased but is not yet government-wide. For instance, even though the establishment of competence centers has been mentioned and in IT strategy, there is no concrete implementation plan for their evolutionary path towards digital innovation hubs (DIH) (CIVITTA International, 2021). This in turn leaves space to misinterpretation and difficulty for Kosovo competence centers to establish themselves as DIHs.

3. Strengths and capabilities of Kosovan ICT sector

Drawing on the MED (2018) IT strategy, the following strengths, capabilities, problems, and barriers are identified. Initially, the ICT infrastructure in Kosovo is comparatively good and competitive on a regional level. Internet connectivity and penetration are above the regional average.

Next, Kosovo is ideally suited as a nearshoring destination due to its geographic and cultural proximity, as well as language capabilities. There is a substantial market potential for Kosovo IT exports (software and IT services) due to increasing demand for outsourcing / nearshoring, particularly in Germany, Austria, and Switzerland (DACH), Scandinavia, Netherlands, the UK and the USA.

The availability of German language capabilities in many Kosovo IT companies represents an important competitive advantage with regards to the DACH market. Furthermore, the Kosovo IT industry can draw on a very strong and well organized diaspora abroad, particularly in Germany, Switzerland, the UK and the USA.

Wages and cost structures in the Kosovo IT industry are competitive on a regional, as well as international scale. The overall the demographic and education profile of young people in Kosovo, in combination with rising interest in IT studies, represent an important competitive factor for Kosovo's IT industry (MED, 2018).

4. Problems and barriers in Kosovan ICT sector

Despite the huge potential and good performance of this sector in terms of exports, the challenges still remain existent. According STIKK, the main obstacle stated by 64.71% of the companies was visa requirements, followed by finding the right business partner (61.76%), lack of qualified staff to conduct export activities (38.24%), market information (lack of suitable information on export markets) by 32.35%, lack of support by government institutions (export financing schemes, etc.) by 32.35%, lack of business contacts in target markets (29.41%), and lack of branding of the local IT industry abroad (29.41%) (STIKK, 2021).

MED (2018) also confirms that there is a lack of branding and positioning of Kosovo as an attractive IT industry location. Stakeholders of the Kosovo IT industry lack the necessary know-how and resources for IT sector promotion. Moreover, the findings of MED (2018) reveal that Kosovo has an image problem abroad, which is negatively affecting the export performance of the IT industry. Unlike many of its neighboring countries, Kosovo neither has an IT ministry nor an IT promotion agency. Additionally, there is a lack of information on IT market and technology trends, especially with regards to potential export markets.

Kosovo's innovation and R&D system is still at a very early development stage, which can be attributed to inadequate resources and R&D capabilities. This is further exacerbated by the limited access to capital which represents a serious obstacle for Kosovo's IT industry growth, as it is very difficult for companies to obtain loans due to high interest rates and collateral. In comparison to regional and international competitors, the maturity level of processes and quality management systems is too low. This is also reflected in the comparatively low percentage of Kosovo IT companies having a quality certification (e.g., ISO, CMMI, ITMark) (MED, 2018).

Overall, there is a low level of specialization and differentiation among IT companies in terms of technologies, target industries (vertical specialization) and specific functional areas (horizontal specialization). Kosovo IT companies exhibit a lack of specialized technical skills with regards to software engineering, software testing, FOSS, IT security, agile methods, cloud computing, big data & analytics, mobile computing and technologies related to industry 4.0 (embedded software, automation, etc.).

Another issue is related to patenting. Because ICT sector is highly driven by a knowledge-based workforce and software systems are involved in almost every part of business process

outputs, make this sector very sensitive concerning intellectual property rights and patenting (Ministry of Trade and Industry, 2014). Intellectual property protection regulations exist in Kosovo, however more needs to be done in implementation. A study by UNDP (2012) shows that the problem with patenting lies not only in enforcement, but also in the inability of the original developer to patent the software, which mainly revolve around high costs that incur and bureaucracies.

Finally, there is a lack of qualified IT staff, which has a negative impact on the competitiveness of Kosovo IT enterprises. On the corporate level, there are deficiencies in the area of management skills, particularly in the middle management of the IT companies. Deficits exist especially in the areas of HR management, marketing & sales, export management and project management. The next section offers a more detailed elaboration of the association between labor market and education system.

4.1 Labor market and education system

One of the biggest obstacles to sustainable growth of the sector in general and increase of export of services in particular has been the supply with skilled labor force (STIKK, 2014). PwC's (2020) survey reveals that the current state of ICT education in Kosovo is characterized by deficiencies both in quality and quantity. There is a high dropout rate from university due to employment before graduation. Universities are also severely underfunded and require substantial investments in infrastructure and staffing.

There are 6 universities in Kosovo teaching computer science & IT-related subjects, producing ca. 350 IT graduates per year (PwC, 2020). In addition, there is a private vocational education and training established by a prominent local IT company (Cactus), Cactus Education, which offers diplomas in network and system administration, and web and mobile application development. Other educational initiatives include Jcoders Academy, The Digital School, Open Data Kosovo that provide trainings and mentoring in ICT-related topics. Creative Hub is non-formal education and co-work centre for everyone that wants to change career, develop new skills and work as freelancers or learn new things.

Yet, ICT companies are not satisfied with the quality of employees graduating from higher education institutions in Kosovo were the majority of the most critical skills highly demanded in industry are missing (STIKK, 2015). The education system is characterized with severe deficiencies in terms of IT education ranging from secondary education to tertiary education (MED, 2018). Most of the several attempts to integrate ICT in pre-university education were

unsuccessful. Finally, 87% of businesses are owned by men and proper initiatives should take place to get women involved as well in order to create a free-of-gender-bias IT sector in Kosovo and the Balkan region by increasing the number of women in technology and programming (Shah, 2019).

5. Methodology

5.1 Data collection procedure

In line with purpose of the study, the methodology is based on a combination of in-depth assessment analysis and survey with ICT companies. Specifically, qualitative semi-structured interviews with stakeholders and quantitative survey with ICT companies are conducted.

The survey was conducted using an online platform for survey design Qualtrics, only occasionally the pen and paper was used especially during the qualitative interviews. The software allows for data management and data export to other software programmes such as Excel or SPSS, which was used for inclusion face to face interviews and data analysis.

The sample for enterprise survey was carried out in more than 100 companies in the ICT sector. However, the number of companies that completed questionnaire was 72. The sample was randomly selected from the registry of the database kept at Agency of Business Registration (MIET). Several meetings and focus groups were used with STIIKK representatives to set up the scene for research and also get more qualitative insights for ICT sector and challenges they face for exporting.

5.2 Analytical approach

The research strategy employed in this study is a combination of qualitative and quantitative methods. The qualitative aspect consists of desk research and focus group interviews with companies and stakeholders. Desk research involved a literature review, the review of secondary data including project documents, assessments, evaluations and previous studies. We carried out a literature review on the ICT sector trends in Kosovo and beyond. The review of national strategic and official data from Kosovo Agency of Statistics provided data to depict ICT sector in Kosovo. These critical studies were carefully reviewed to inform the present study's analytical and methodological approach and ensure that the most relevant methodology is used to investigate Kosovo's ICT sector potential.

The methodology (Data analysis for semi-structured interviews) was carried out in several steps. The first step was to collect all reports regarding the ICT sector in Kosovo. Then, we conducted and analyzed qualitative interviews with companies and also semi-structured interviews with stakeholders and, within this phase, compared and contrasted findings of the literature. Based on the new topics emerged from focus groups and semi-structured interviews we designed the questionnaire for quantitative analysis.

6. Survey findings

6.1 Sample characteristics

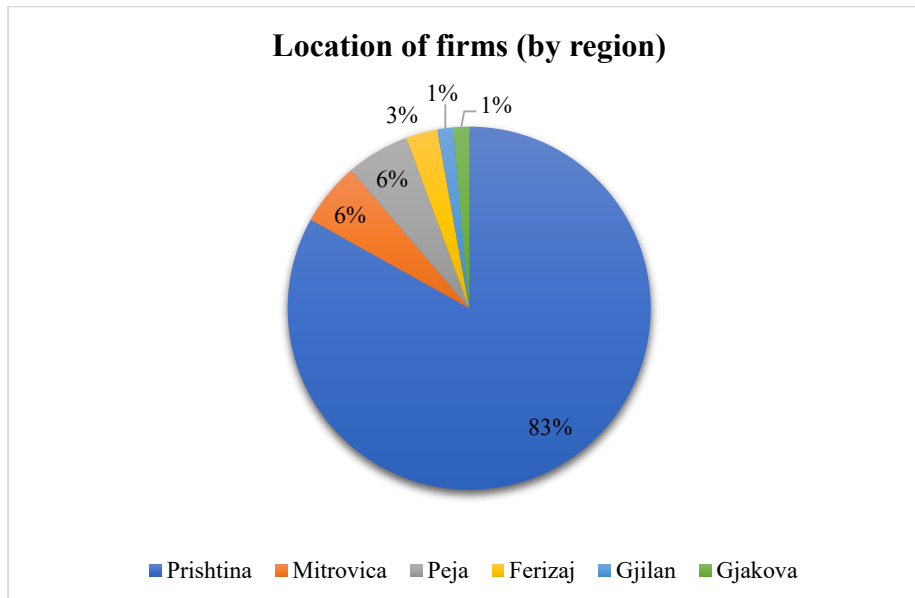
Table 2 reports descriptive statistics of the sample of all variables of interest. The majority of the respondents are male (81.7%), 25-34 years old (50.7%), and in possession of a university degree (66.2%). Majority of respondents are owners of companies or general managers (more than 80%) suggesting the high reliability of data as these two categories are better informed about companies.

Table 2. Descriptive statistics of the sample (N=71)

	Frequency	Percentage
Gender		
Female	13	18.3
Male	58	81.7
Age		
18-24 years old	4	5.6
25-34 years old	36	50.7
35-44 years old	25	35.2
45-54 years old	6	8.5
Education		
Primary school	1	1.4
Secondary school general	2	2.8
Secondary vocational (VET)	5	7.0
University	47	66.2
PhD / post-graduate	16	22.5
Position in the organization		
Entrepreneur/owner	31	43.7
Manager (CEO)	32	45.1
Human resource manager	4	5.6
Other	4	5.6
Age of firm		
Less than 5 years	24	33.8
5-9 years	24	33.8
10+ years	23	32.4
Size (number of employees)		
Micro enterprise	34	47.9
Small enterprise	32	45.1
Medium enterprise	5	7.0
Region		
Prishtina	59	83.1
Mitrovica	4	5.6
Peja	4	5.6
Ferizaj	2	2.8
Gjilan	1	1.4
Gjakova	1	1.4

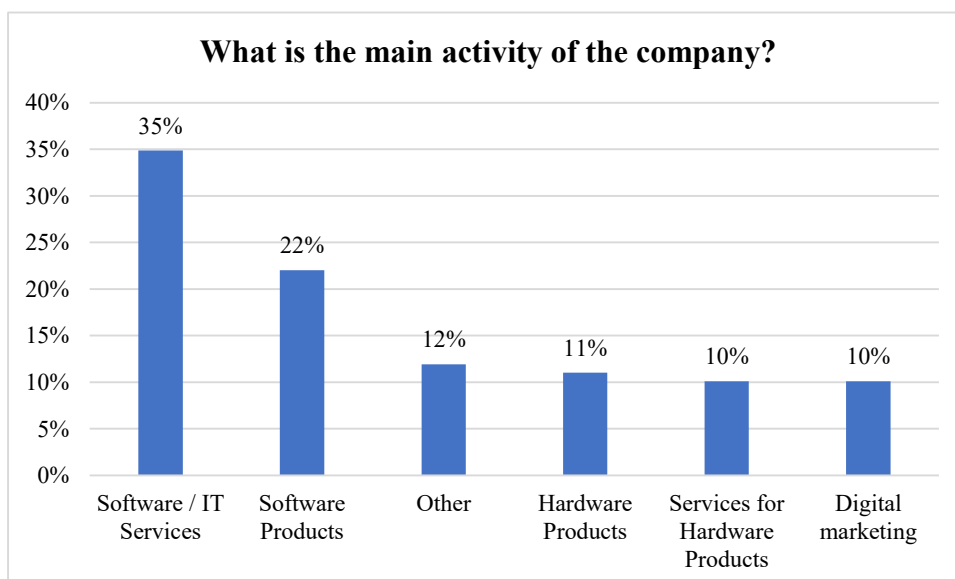
Most of the companies are micro and small-sized enterprises (93.0%) from the region of Prishtina (83.1%) which have been operating between 1 and 9 years (67.6%).

Figure 4. Location of participating firms (by region)



In order to have an overview of the companies' offerings, we asked the respondents about the products/services they provide. Software/IT services are the most common activity provided by 35% of the IT companies, followed by software products (22%), other (12%), hardware products (11%), services for hardware products (10%), and digital marketing services (10%).

Figure 5. The main activity of the companies



6.2 Current state

The results indicate that the total number of employees in 2019 was 767 and there was a substantial annual growth rate in 2022 by 90% or 1,457 employees in total. Whereas the expected number of employees in five years is expected to grow by approximately by 167%, or 3,888 workers employed in the ICT sector. These data indicate the potential of the sector to grow over the years and suggest the opportunity for employment growth and exporting in the future. Table 3 provides the full details.

Table 3. Total number of employees in the sample across years

	2019	2022	Expected number of employees in 5 years from now	Growth in employment 2019-2022 (in %)	Expected growth in employment 3 years from now (in %)
Total number of employees	767	1,457	3,888	90%	167%

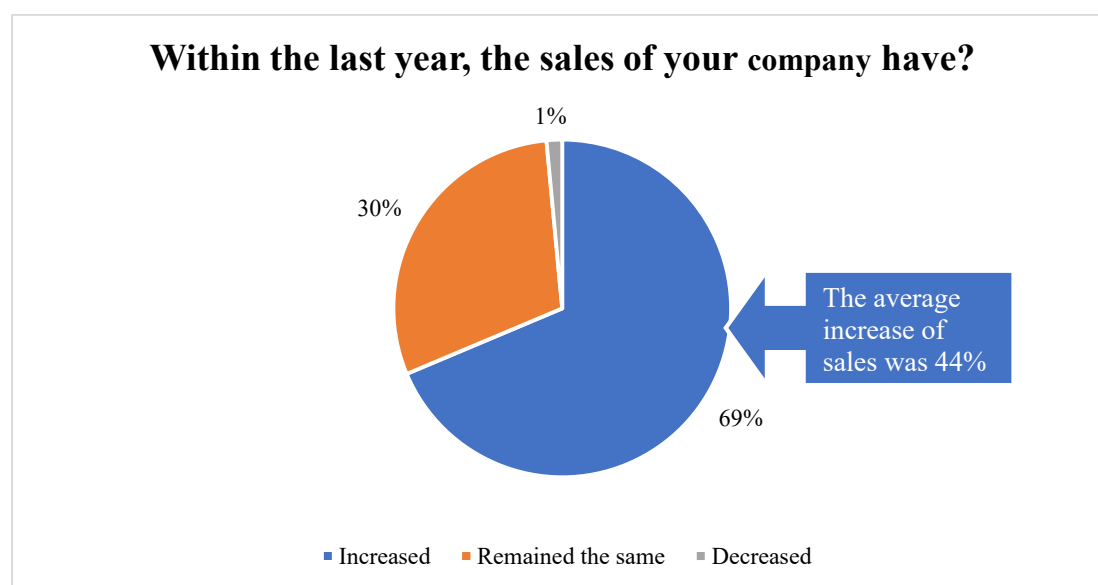
ICT workers have higher technical/ICT skills (5.9) and comparably lower marketing (4.8) and managerial skills (4.8) (*1 = nothing, 7 = high competence*). This is in line with expectations given that most of ICT employees have a background in natural sciences and lack preparation from business management perspective. Introduction of business management courses in university degrees might be considered an option, or training programs offered by governmental and business association initiatives.

Figure 6. Employees' level of skills



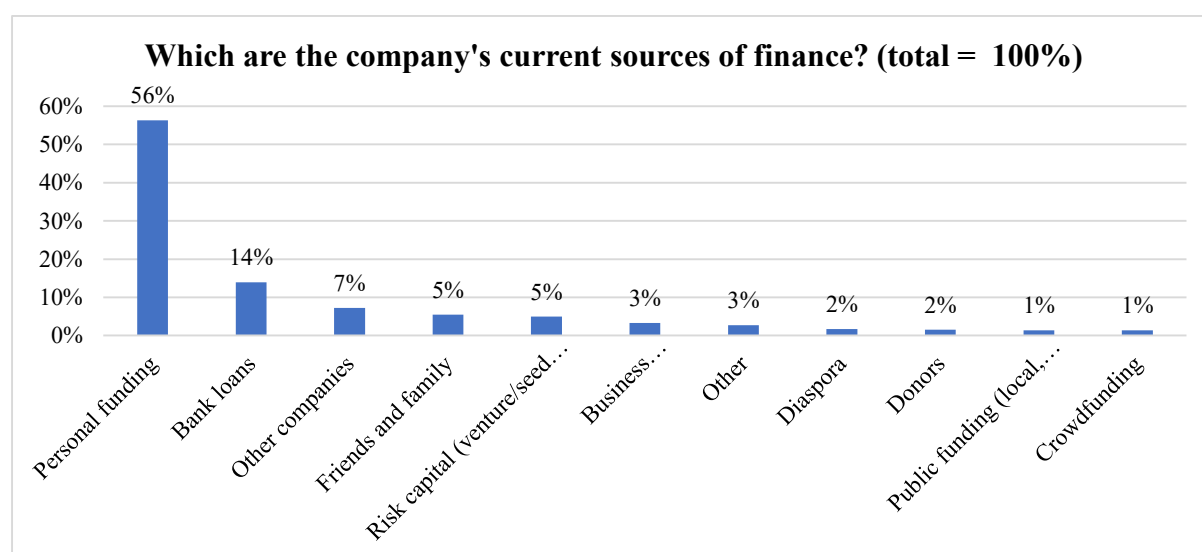
More than half of the respondents (69%) indicated that their sales within the last year increased. Whereas 30% and 1% declared no variation in sales level or a decrease, respectively. The average increase of sales was reported to 44%. This substantial increase might be attributed to the increased demand of ICT services in both local and international market induced by the Covid-19 pandemic.

Figure 7. Variation of sales within the last year and percentage of increase



Personal funding is the main source of finance, which consists around 56% of the total funding sources. As the majority of the sample consists of micro and small enterprises, these categories mainly rely on founders' personal funding. Other sources of finance represent a lower portion and are mainly employed once the companies want to grow.

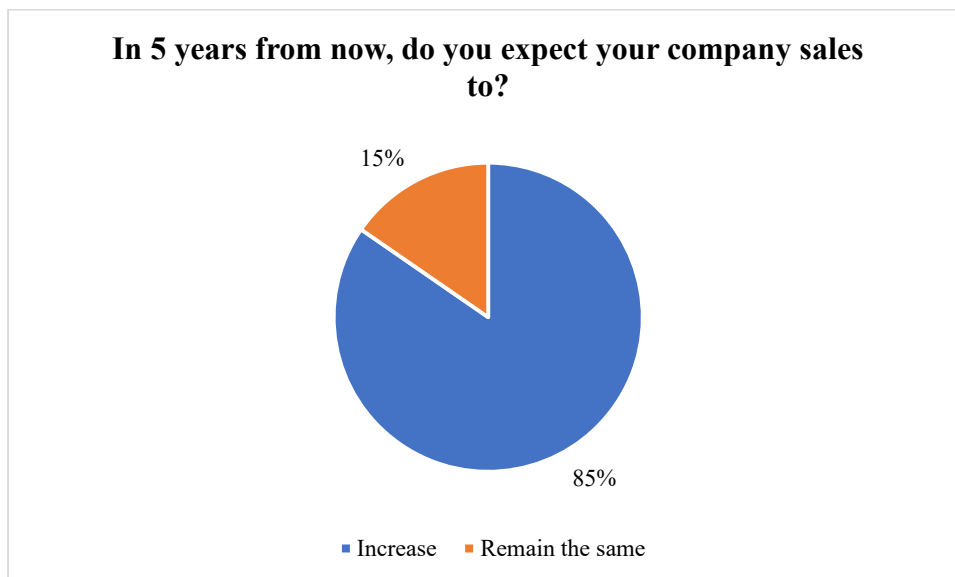
Figure 8. Sources of finance



6.3 Potential and future trends of ICT sector

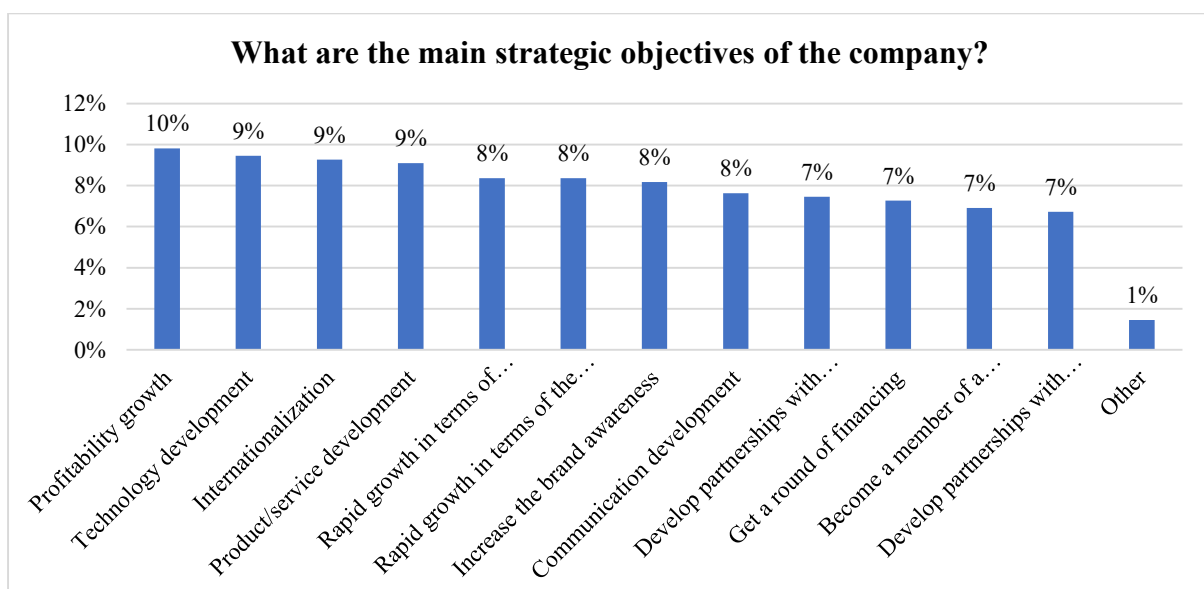
Additionally, the vast majority of the companies (85%), are optimistic about the future. They expect that in five years from now, their company sales will increase. The positive expectation about the future is inherently based on the continuous increase of sales in recent years increasing number of employees.

Figure 9. Expectations concerning the sales in the future



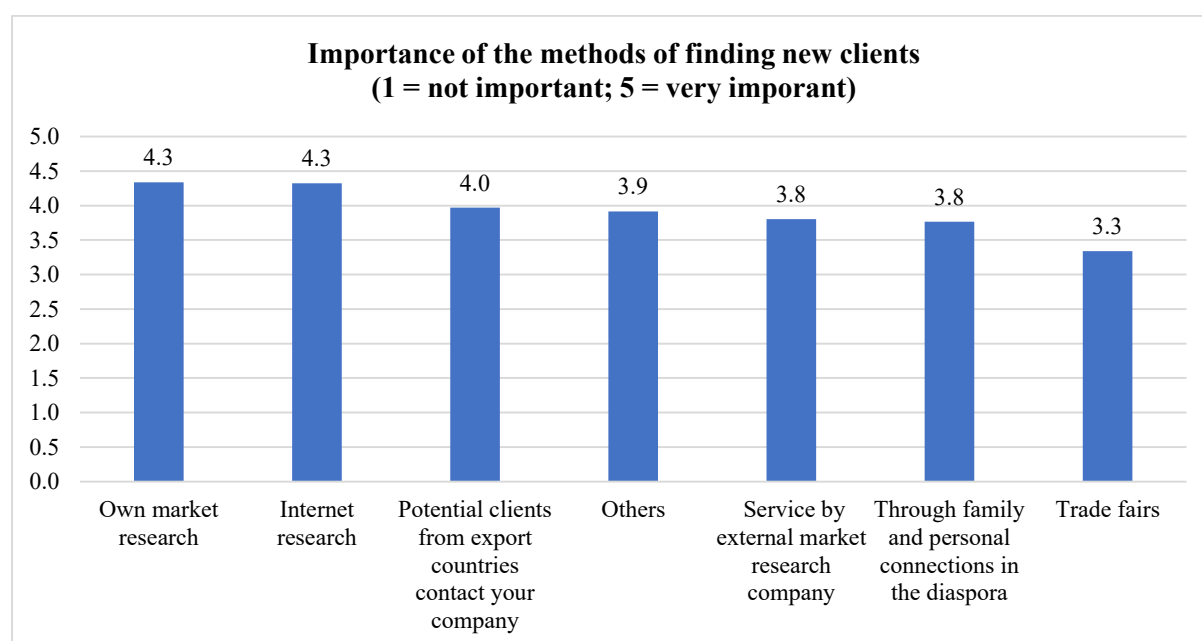
Concerning strategic objectives of Kosovo ICT firms, the most common objective is profitability growth (10%), followed by technology development (9%), internationalization (9%), and product/service development (9%).

Figure 10. Strategic objectives of the company



Client acquisitions occur through different forms, however, own market research (4.3) and internet search (4.3) dominate. These findings emphasize that most of the portfolio heavily depends on individual efforts, mainly deriving from founders which rely on their knowledge and experience in attracting new customers. Given that ICT workers lack marketing and managerial skills (as previously mentioned), they should consider attending extra educational training in these topics as they are mainly the sole possible individuals to bring new customers in.

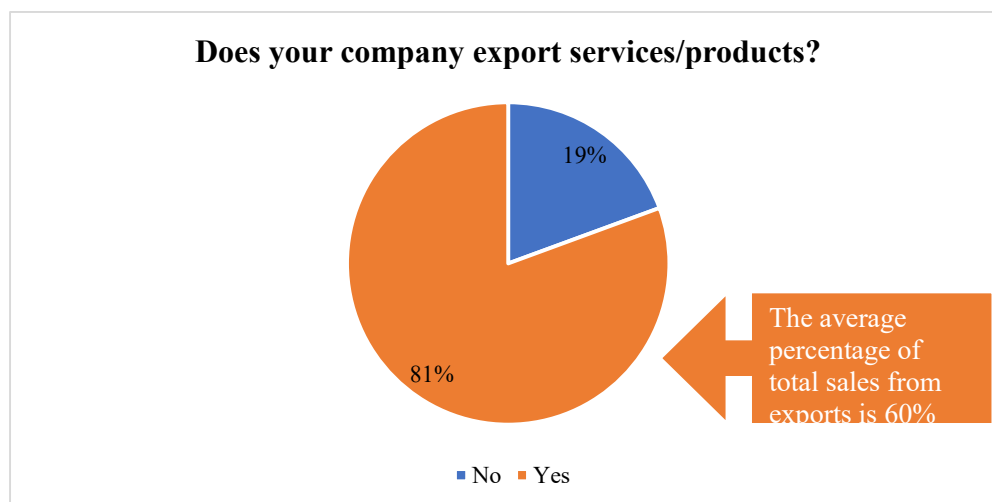
Figure 11. Importance of the methods of finding new clients



6.4 Kosovo ICT firms and export

The survey results indicate that a large portion of ICT companies in Kosovo, namely 81%, export service/products. The findings indicate that for those companies that export, on average almost half (60%) of the total sales is generated by export.

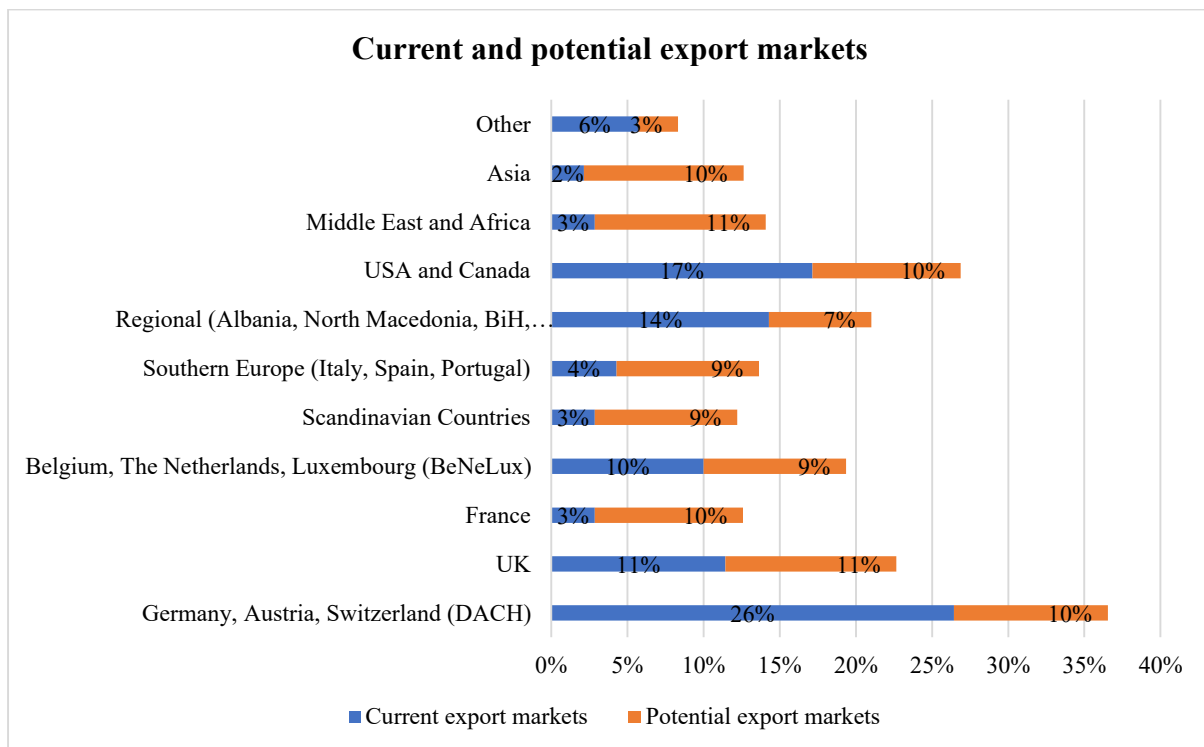
Figure 12. Percentage of exporting companies



In addition, we asked the respondents to indicate the current export market and evaluate the export potential for different countries in the world. The graph below shows the percentage of the current export market versus the potential of the same markets for export.

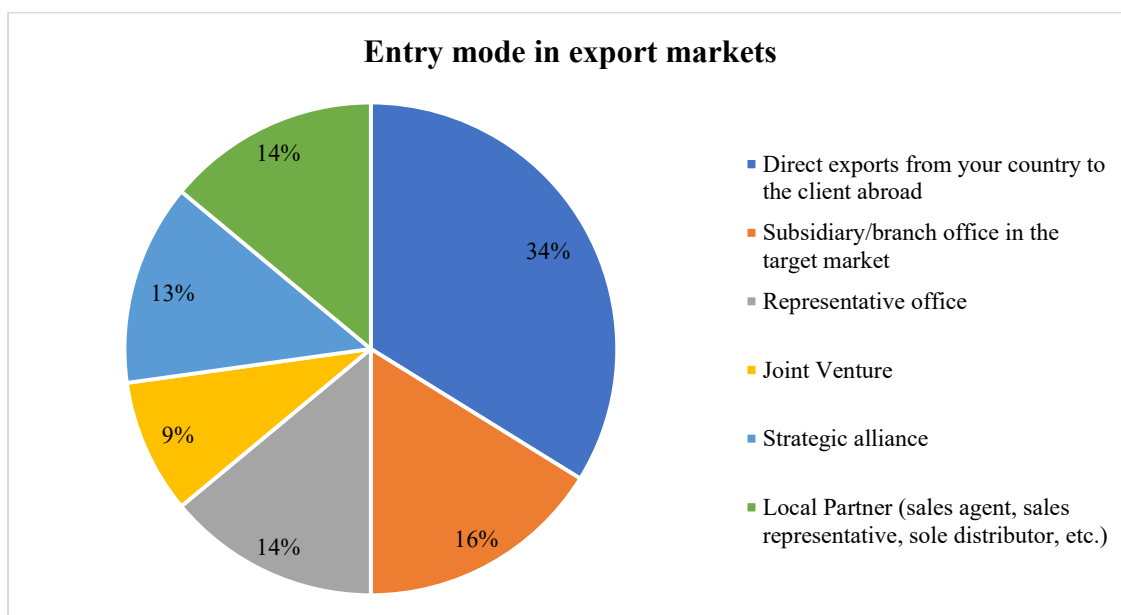
The countries where Kosovan ICT firms export the most currently are Germany, Austria and Switzerland (DACH countries; 26%), followed by USA and Canada (17%), regional countries or Albania, North Macedonia, BiH, Montenegro and Serbia (14%), UK (11%), and Belgium, The Netherlands, Luxembourg (BeNeLux countries; 10%). Whereas, concerning the market potential, companies rated that the countries with the highest export potential are UK (11%), Middle East and Africa (11%), DACH (10%), USA and Canada (10%), France (10%), Asia (10%), BeneLux (9%), Southern Europe or Italy, Spain, Portugal (9%), and Scandinavian countries (9%).

Figure 13. Current and potential export markets



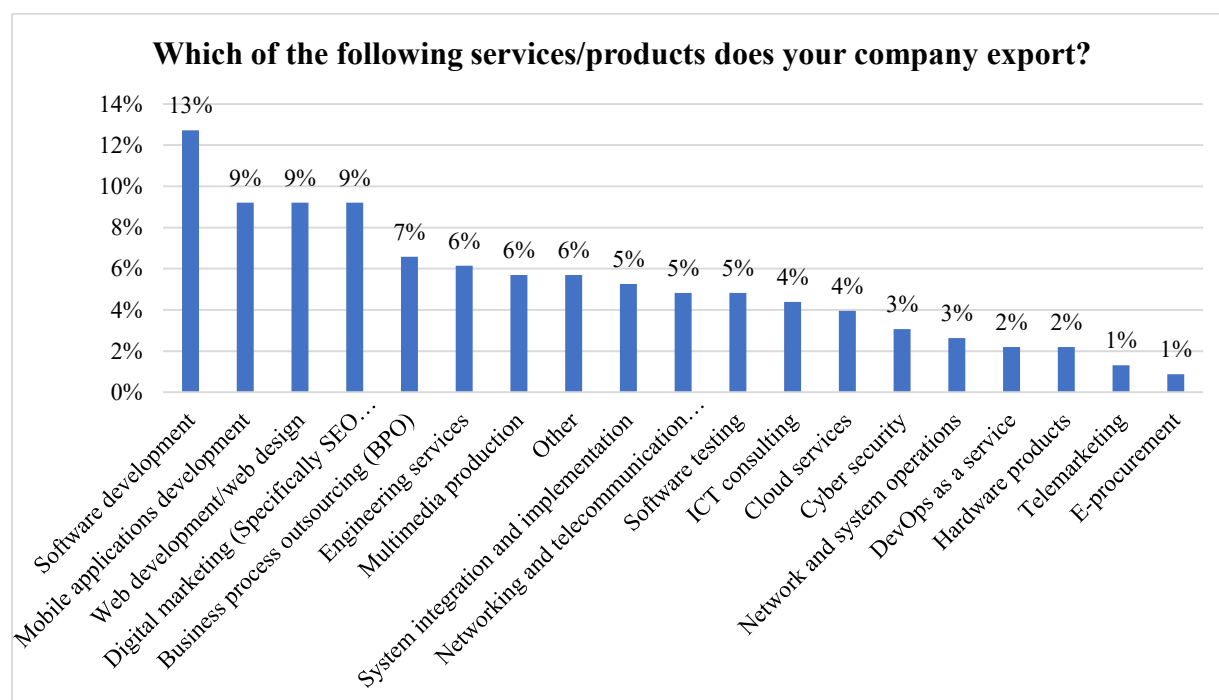
The dominant entry mode in export market is direct export (34%), followed by subsidiary/branch office in target market (16%), representative office (14%), local partner (14%), strategic alliance (13%), and joint venture (9%). The direct export approach dominates mainly because the relationship with international partners are usually based on personal network and acquaintances, therefore, a direct export fits better.

Figure 14. Entry mode in export market



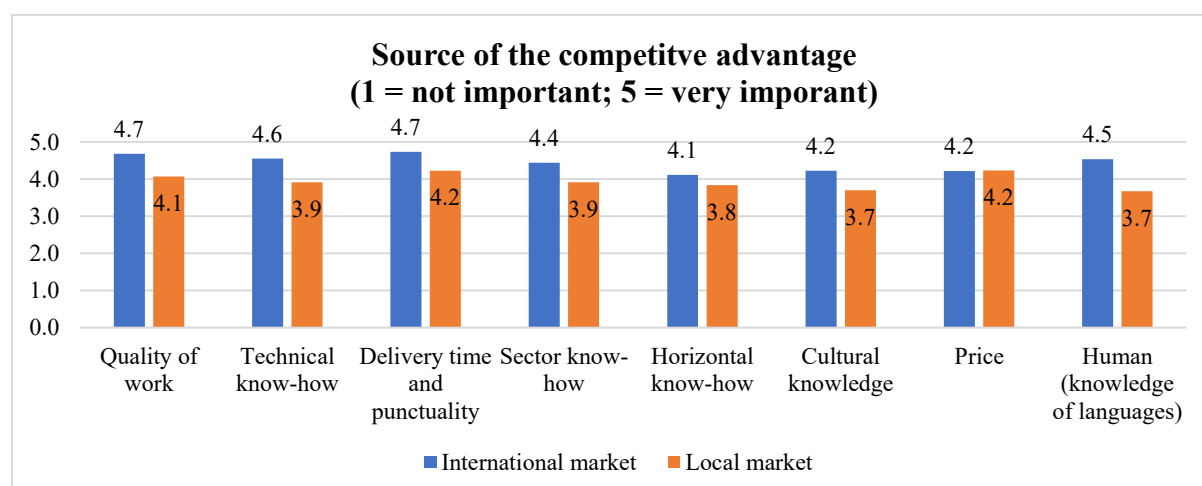
To have a more comprehensive understanding about the export, the companies were asked which are the services/ products that they export. The results reveal that software development is the most exported service (13%), followed by mobile application development (9%), web development/web design (9%), and digital marketing (specifically SEO and SEA) (9%).

Figure 15. Type of exported products/services



According to the results, the key aspects toward building a competitive advantage in the international market are quality of work (4.7) and delivery time and punctuality (4.7) (*1 = not important; 5 = very important*). Whereas, in the local market, the price (4.2) and delivery time and punctuality (4.2) are the most important aspects.

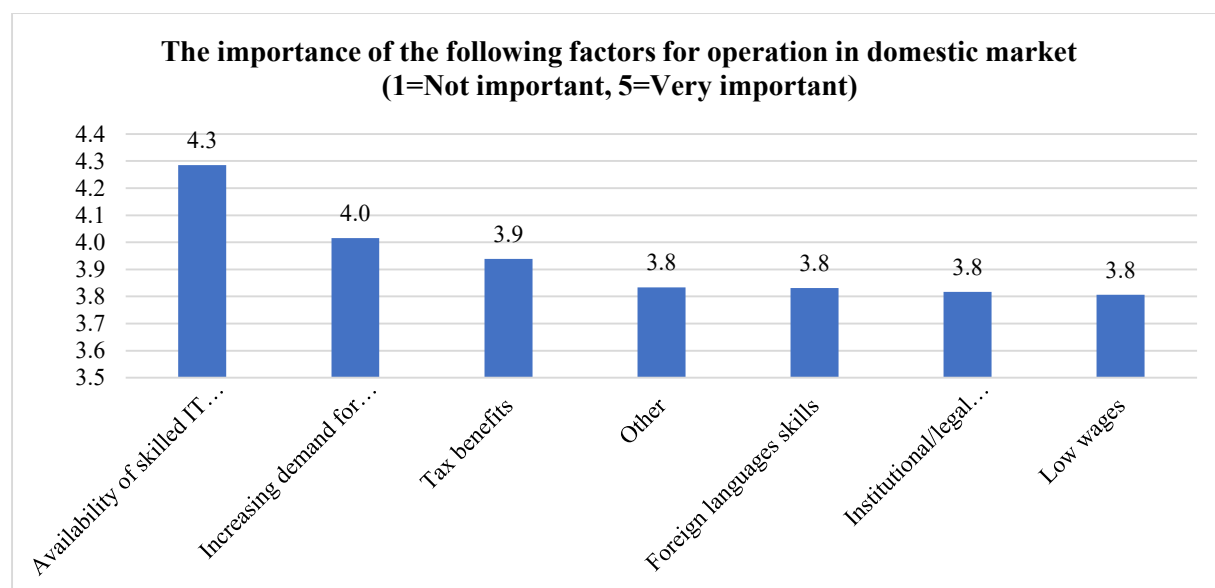
Figure 16. Source of the competitive advantage



Although the majority of Kosovan ICT companies export their products/services, however, they are still located and somehow connected in Kosovo. Therefore, we asked the respondents what are the reasons that they are still operating in Kosovo.

The results show that the main reason is the availability of skilled IT and non-IT related professionals (4.3). Next, increasing domestic demand for ICT (4.0) and tax benefits (3.9) represent two other strong reasons why they still operate in the domestic market. In other words, domestic demand is increasing therefore IT and non-IT related professionals are suitable to respond to such an emerging demand, which explains why the former represent the main reason why they still operate in Kosovo.

Figure 17. Importance of domestic market

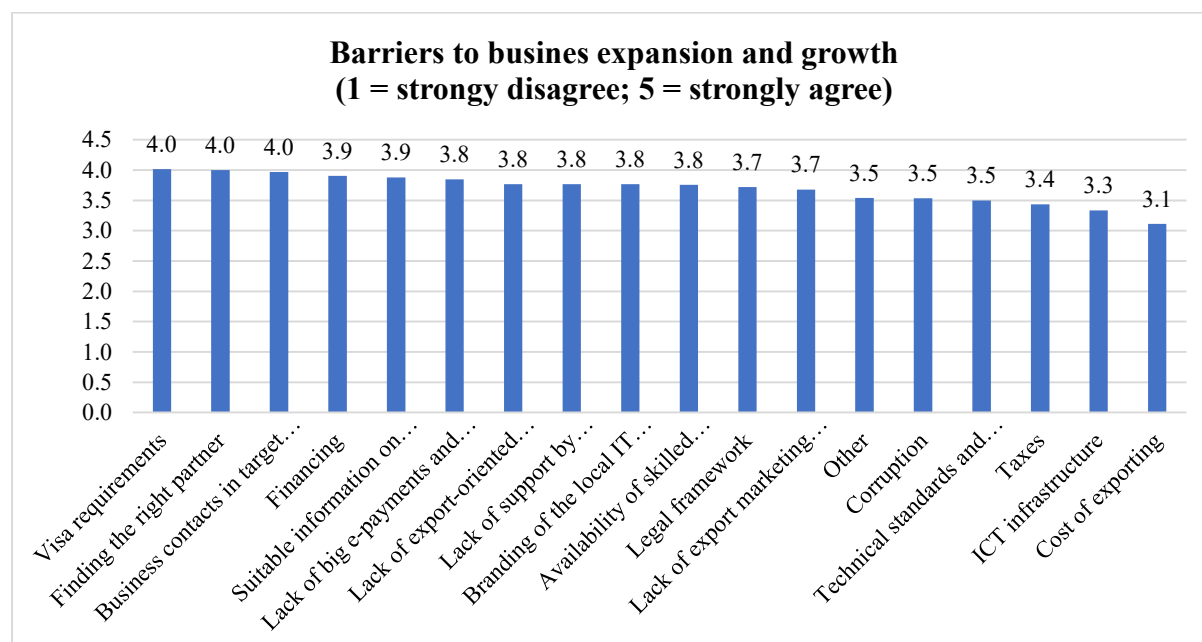


6.5 Needs and barriers: survey results

We asked the participating respondents to express main obstacles or barriers that hinder their business growth and expansion abroad. The graph below represents the main barriers the ICT sector faces in the following order: visa requirements (4.0), finding the right partner (4.0), business contacts in the target market (4.0), financing (3.9), and suitable information in target countries (3.9) (1 = strongly disagree, 5 = strongly agree). It can be inferred that because of visa requirements, network building and client attraction is limited. This in turn is translated as difficulties in having comprehensive information about the target markets and finding the right partner. ICT entrepreneurs should have more relaxed procedures for visa application in order to boost the export potential. Also, government and business associations should work together

to assist in building a business intelligence with insights and information about current and potential export market in order to facilitate their decision-making.

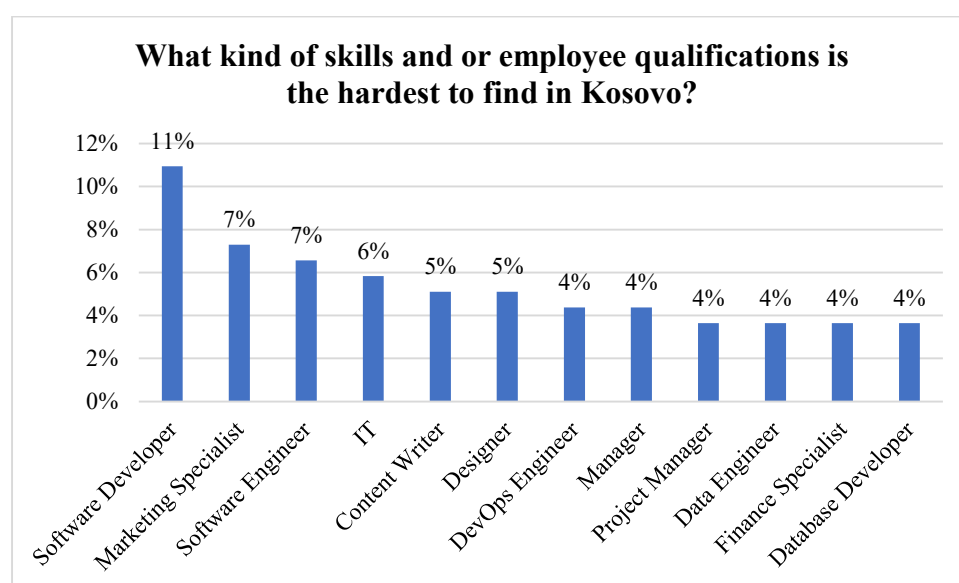
Figure 18. Barriers to business expansion and growth



We asked ICT firms what kind of employee qualifications or job profiles are the hardest to find in Kosovo. Based on the survey results, software developer (11%), marketing specialist (7%), software engineer (7%), IT (6%), content writer (5%), and designers (5%) are the job profiles that companies struggle to find the most.

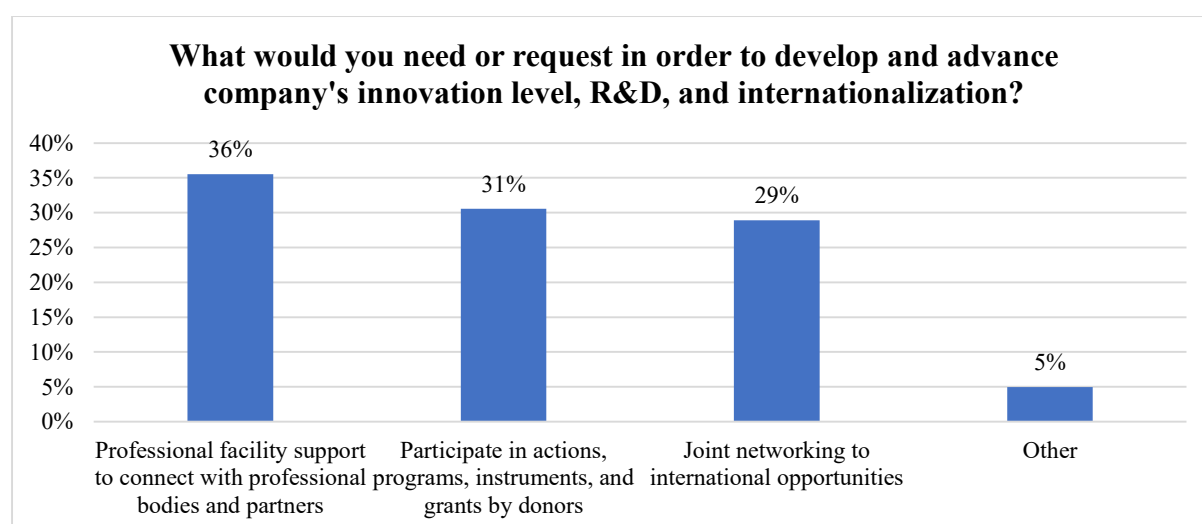
Previous research for long has acknowledged a lack of skilled ICT workforce. However, the current findings reveal that skilled business management workers are scarce as well, specifically marketing specialists. In principle, there are many marketing graduates in the labor market but it seems that their qualifications do not fit with job requirements that ICT sector poses. Therefore, higher education institutions should include in their curricula topics like digital marketing, content writing, Google Advertising, Google Analytics. Alternatively, the ICT business community might consider organizing providing non-formal educational and training programs in order to improve workers' skills in these areas.

Figure 19. Employee qualifications that are hard to find in Kosovo



ICT firms in Kosovo consider professional facility support to connect with professional bodies and partners (36%) as the main need or request in order to develop and advance company's innovation level, R&D, and internationalization. Meaning, there is an urgent need to intervene by organizing professional networking event which enhance the collaboration between parties.

Figure 20. Needs to develop and advance company's innovation level, R&D, and internationalization

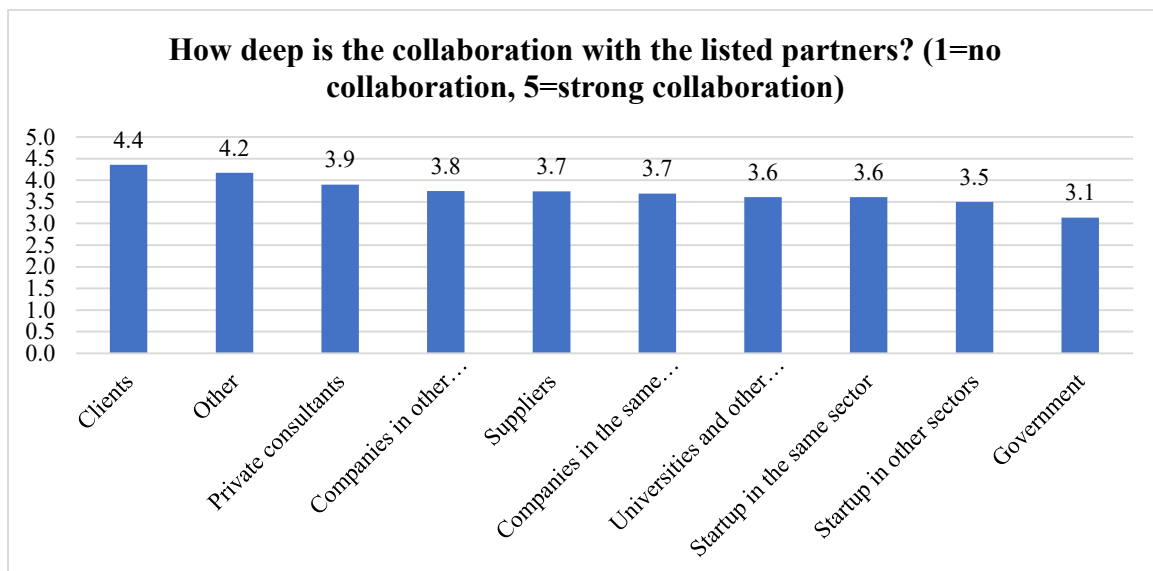


6.6 Collaboration, innovation and digitalization, and Covid-19 impact

The deepest collaboration of ICT companies exists with clients (4.4). This is understandable considering the activities that ICT companies perform. Meaning, software development and

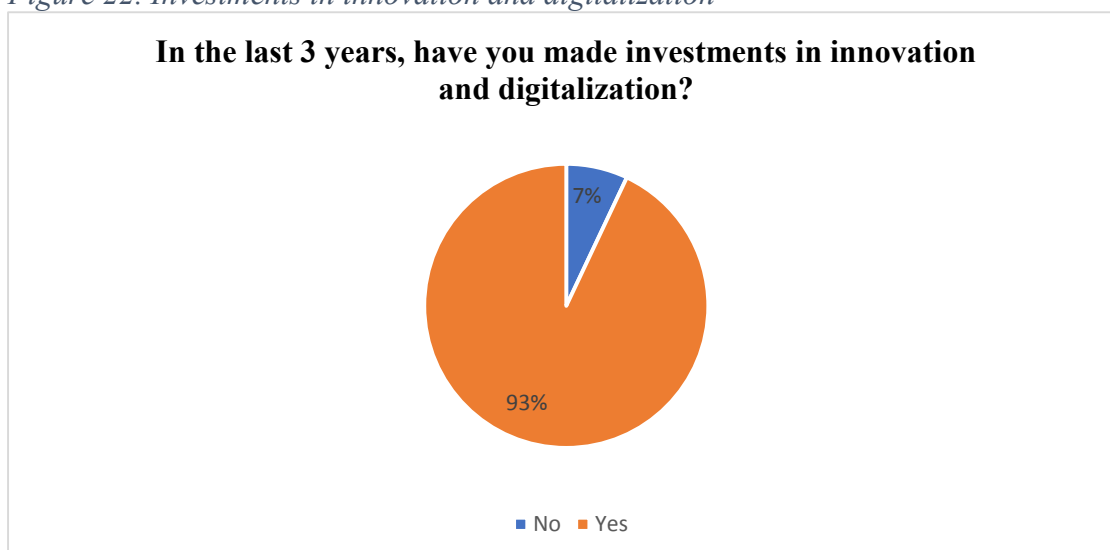
related digital technology services heavily rely in agile project management methodologies, i.e., Scrum, where the input from clients is pivotal. Next, a deep collaboration exists with private consultants (3.9) and firms in other sectors (3.8). This implies that the ICT sector is cooperating with other sectors it is crucial to push forward this cooperation in order to foster cross-sectorial growth. Collaboration with government (3.1) has the lowest score.

Figure 21. Networking collaboration



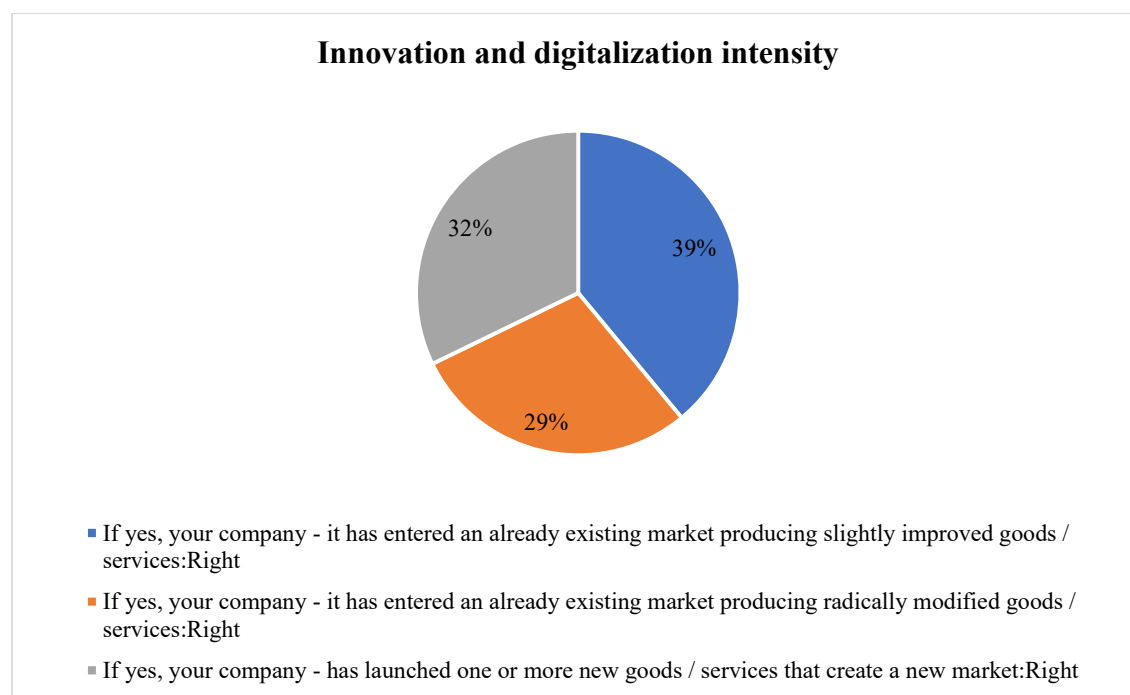
A large majority of firms (93%) have invested in innovation and digitalization in the last three years. This speaks to a strong commitment of Kosovo ICT firm to invest in digitalization in order to be able to compete by following latest market trends and accommodating customer requirements.

Figure 22. Investments in innovation and digitalization



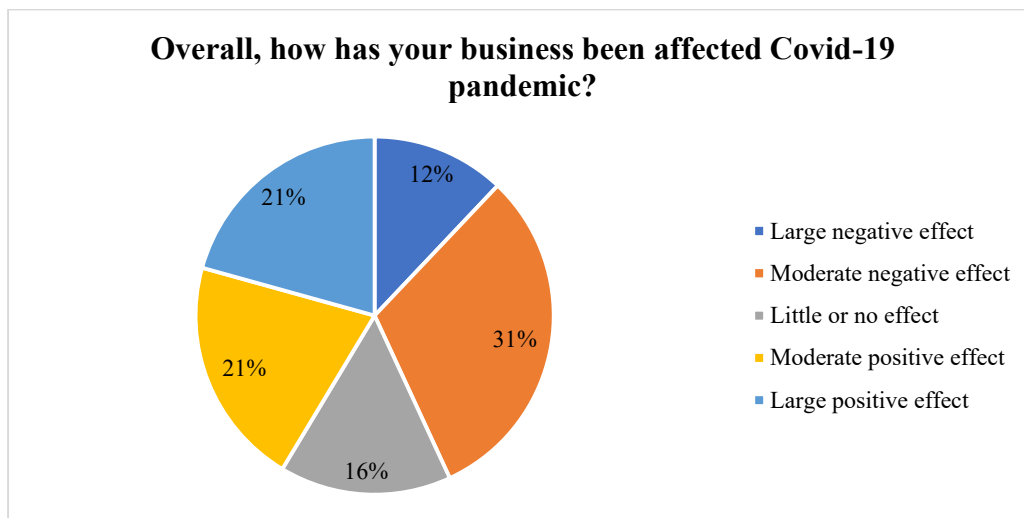
In order to understand the nature of the investment in innovation and digitation, we asked the participating firms to indicate the intensity of the investments. Based on the results, 39% expressed that with their investment they entered an already market producing slightly improved good/services, 29% have entered an already existing market producing radically modified goods/services, and 32% launched one or more new goods/services that create a new market.

Figure 23. Innovation and digitalization intensity



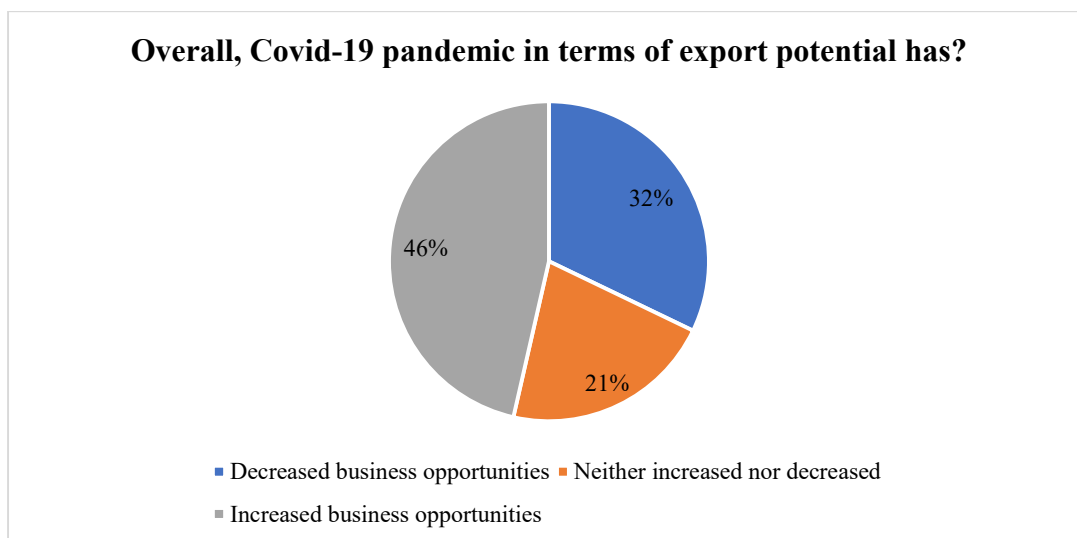
For the 42% of the sample, Covid-19 pandemic has had a moderate positive effect or a large positive effect. Whereas 16% expressed that it had little or no effect at all. In these three categories most probably fall those companies that are exporting, thus Covid-19 restrictions didn't negatively influence their business performance. Also, it is possible that they collaborate with large companies which have been adopting digital solutions prior to pandemic outbreak.

Figure 24. The impact of Covid-19 in business performance



This positive impact in exporting companies is confirmed by the graph below. Almost half of the companies express that Covid-19 pandemic increased business opportunities. Whereas 21% evaluate no impact and 32% consider that Covid-19 has decreased business opportunities.

Figure 25. The impact of Covid-19 in export potential



Finally, we asked the participating companies to write any issue or recommendation related to business environment that hinders the development of their company or sector in which they operate. Their opinions mainly revolve around the following topics:

- An unfaithful competition exists in Kosovo as foreign companies investing in Kosovo are not properly regulated:

- *“Unfaithful competition is an urgent matter where the state needs to regulate it at least to the point where any new foreign company has some limits or some obligations towards the tech community or the state. Foreign companies’ open shop without investing, while using the market as needed without giving back anything to the community. Their revenues remain in their states while here they raise up the price of the developers.”*
- Concerning the finance, the law on accelerators, venture capitalists, business angles, investment houses should be in place in order support for start-ups and young firm increase their export capacity:
 - *“The main issue is financial support that we need from angel investors”.*
 - *“Make accessing finances easier, there are no clear financing opportunities in Kosovo, and those that are, are usually small grants”.*
- There are issues related to the skills of the workforce and workforce availability:
 - *“Invest in education and skills in primary and secondary education. Offer programming courses for free in mass scale for youngsters”*
 - *“We lack the available workforce. The problem is not with the skills, the problem is becoming that the availability of youth to work is decreasing. Otherwise, we train people to work for us even though they don’t have necessary skills”.*
 - *“Support dual education system in ICT. Supporting ICT students with full scholarships from the state as a strategic orientation for development of the ICT sector and as a potential for export services”.*
- Governmental support is required on facilitating patenting procedures:
 - *“Government should support the ICT companies especially those involved in product development with Intellectual Property Rights (IPR) assistance and cover the cost of registering patents and other IPR”.*
- Also, more support is required from government is asked by companies owned by diaspora:
 - *"Government should be more proactive in supporting foreign companies owned by the diaspora. We could do much more than we are doing. Certification to ISO 20000-1:2011 through the scheme provides independent, industry-wide recognition of IT Service Management capabilities. A further support by government would be needed in order to obtain also ISO 22301:2012 (Business*

Continuity Management System), ISO 27001:2013 (Information Security Management System), and ISO 9001:2015 (Quality Management Systems).

7. Conclusions, implications, and policy recommendation

The study offers several policy implications and recommendations for government, donor organizations, business associations and ICT companies forming the basis for policy set-up to strengthening of the ICT sector in Kosovo. Drawing on both qualitative (meeting with the executive director of STIKK) and quantitative (survey with ICT companies) evidence, the study offers following conclusions and related recommendations to increase the support and boost the growth of ICT sector:

- Covid-19 impact: In recent years, the ICT sector has increased exponentially and its performance is promising. Especially in the last two years during the Covid-19 pandemic, the demand has tripled or quadrupled. However, the ICT sector faces several barriers related to institutional set-up, financing, information sources, and lack of skilled labor.
- Competitive advantage: The qualitative evidence suggest that our comparative advantage relies on creativity which revolves around ICT sector related services and sub-activities such as design. In this context, apparel industry or industrial design could be one of the main exporting services with high value added. National ICT strategy and governmental policies should be focused towards this segment to incentivize the export.
- Lack of skilled workers: The lack of skilled workforce acts as a barrier. In the designing of future support programs such as training and workforce development, the particular attention should be paid to develop specific profiles for needs of the ICT sector.
 - Many ICT companies have in-house academia and prepare the new personnel through on job training. Therefore, the Kosovo government including the active role of business associations need to find some form of human capital development which subsidizes training costs of the personnel to increase the competitiveness in the market. The problem with access to workforce is not only quality but also the availability of workers regardless their level of skills.
 - Level of skills: The young graduates need at least one year work experience and preparation to improve their skills in order to become productive workers. The higher education institutions (HEI) or universities are not providing enough preparation. Government and STIKK should work together to provide

alternatives to public universities including suggestions for introducing new courses or material updates.

- Encourage women and girls to study ICT and make ICT a career choice. Recently, the percentage of women owned businesses in ICT has reached more than 25 %, suggesting a promising resources to be utilized for growth of the sector.
- Brain drain: The sector is characterized with high levels of brain drain, however, this phenomenon happens for other reasons rather than salary. Meaning, ICT workers move to different countries because they have professional goals such as becoming partners, getting better education, or simply because of a better general standard of living. The government and business associations such as STIKK should take a leading role in lobbying and advocate the issues that surround ICT professionals and consider introducing brain gain incentives for this sector. This might include creation of an ecosystem which allows professional fulfillment as well as foster appealing working environment induced by investment in the infrastructure of the ICT sector
- Financing: the qualitative interview evidence shed light on several crucial points:
 - The qualitative findings suggest that there is a lack of government support for the ICT sector and there is a need to design the financing schemes for to scale up and grow this sector. An exception is Kosovo Credit Guarantee Fund which was highly appreciated by the ICT companies as it presented a window for credit without high collateral requirements.
 - Concerning support programs deriving from the governments, ICT companies hesitate to participate in these direct programs mainly due to the trust issues. In this context, the government should seriously reconsider restructuring its current approach towards this sector by providing professional and personalized support for ICT companies in order to become a reliable partner for them.
 - The Law on accelerators and Business Angles is not in place. This means that no law regulates venture capitalists, business angles, investment houses or other support for start-ups which are crucial for during incubation and early stages. Owing to the importance of these financing forms, the government should give immediate attention in formulating and passing this law and in addition, design incentive schemes to motivate more established businesses and entrepreneurs to get involved in the support of start-ups in ICT and wider.

- Patenting: As mentioned in the beginning, intellectual property and patenting legislation needs more attention and comprehensive enforcement. In addition, a cost sharing mechanism for patents should be provided as well to facilitate the original developers to patent their softwares.
- Collaboration: Increase interactions among ICT companies through B2B networking events. The exchange of ideas or expertise helps in building a more comprehensive market intelligence and increase export.
 - ICT companies that are associate members of STIIK can increase demand for law companies as subcontractors, which in itself presents a huge potential.
 - Immediate attention should be given in establishing e-commerce clusters.
- Member to member services: Business association and sector association should work jointly work to bring together different sectors in order to benefit from synergies and member to member services. For example:
 - Foster collaboration between ICT and metal sector because ICT sector can help other sector to go through a digital transformation.
 - A company is professional in scrum masters or any other managerial tool, and they can share the knowledge and experience for other companies for free.
 - Companies that have more expertise to offer pro bono training in General Data Protection Regulation (GDPR) for new companies will be soon a requirement imposed by EU. Meaning, companies will have to comply with the GDPR even if they are not in the EU but they have users who are located in the EU and they collect or process any personal data from these individuals (European Union, 2016).
- Foster digitalization: In order to foster and scale-up the digital transformation in country level, the government should impose particular requirements. For example, every grant in agriculture or other sectors, the government should impose that 10-20% of grant amount should go for digitalization and ICT advancement. This could make other sectors more productive and more technologically sophisticated.
- Operating formally and professionally: Government and business associations should offer training and consultancy services about registering the business and operating formally, campaigns for paying taxes, and consultancy on the management issues that young founders face.

- Tenders and grants: Currently, only few ICT companies are interested to compete for local government open tenders or bids. This might be attributed to the high bureaucratic application procedures imposed by governmental organizations and low trust in government. The latter should reconsider current application practices and design more user-friendly application processes to foster higher interest from ICT companies.
- Local market: Covid-19 pandemic was a turning point especially for the domestic market. Many companies realized the necessity and benefits of adopting digital solutions, however, the current offer is not able to match this increased demand. Meaning, there are not enough ICT companies in Kosovo to serve needs of local companies for ICT services because they are more focused in international markets where prices are higher. Because the larger and more established companies are working as subcontractors to global companies, the underserved demand for services in Kosovo could be used to boost start-ups in this sector. The findings from qualitative evidence suggest that there is a need to design the support schemes for facilitating demand satisfaction in this sector. Because the prices of these services are very high in the sector, the government and donors should work together to introduce a separate financing scheme to partially subsidy the cost of ICT services so that the demand is matched and ICT companies increase their turnover in the domestic market.
- Education: Kosovo government should reconsider the introduction of large scale reform to include the wide-range of curricula related to ICT bundling skills such as coding and programming, creativity modules at all levels of educations.

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9. Annexes

9.1 Annex 1: List of core ICT indicators in Kosovo

Description	Indicator
1. ACCESS	
1.1 Fixed telephony penetration (% of inhabitants) (2021)	4.0%
1.2 Fixed telephony penetration (% of households) (2021)	24.5%
1.3 Mobile telephony penetration (% of inhabitants) (2021)	97.9%
1.4 Internet service penetration (% of inhabitants) (2021)	21.1%
1.5 Internet service penetration (% of households) (2021)	129.2%
2. HOUSEHOLDS	
2.1 Households with access to the Internet at home (2021)	96.1%
2.2 Type of the internet access by households (2021)	
<i>Fixed/Mobile connection</i>	96.1%
<i>Fixed connection</i>	94.0%
<i>Mobile connection</i>	62.3%
3. INDIVIDUALS	
3.1 Internet use by age (2020)	
<i>16-24</i>	17.4%
<i>25-34</i>	16.1%
<i>35-44</i>	19.5%
<i>45-54</i>	18.9%
<i>55-64</i>	15.5%
<i>65+</i>	10.1%
3.2 Internet use by gender (2020)	
<i>Male</i>	57.4%
<i>Female</i>	40.2%
3.3 Use of the Internet in the last 3 months (2021)	
<i>Every day or almost or almost everyday</i>	87.6%
<i>At least once a week (but not everyday)</i>	7.6%
<i>Less than once a week</i>	0.1%
3.4 Use of devices for Internet in the last 3 months (2019)	
<i>Mobile phone or smart phone</i>	78.9%
<i>Laptop</i>	21.7%
<i>Desktop computer</i>	11.8%
<i>Tablet</i>	11.9%
<i>Other mobile devices</i>	2.7%
3.5 Buying or ordering any goods and services over the Internet the last time (2021)	
<i>Within the last 3 months</i>	23.1%

<i>Between 3 months and a year ago</i>	19.0%
<i>More than 1 year ago</i>	9.1%
<i>I never bought or ordered</i>	46.2%
3.6 Use of the Internet for private purposes for public services in the last 12 months (2020)	
<i>Obtaining information from websites or apps</i>	26.0%
<i>Downloading/printing official forms</i>	9.4%
<i>Submitting completed forms online</i>	5.3%
3.7 Privacy and personal data protection (2021)	
<i>Yes, very worried</i>	4.0%
<i>Yes, somewhat worried</i>	26.3%
<i>No, I'm not worried</i>	65.1%
3.8 Technological Skills (2021)	
<i>Writing / coding in a programming language (SAS, SQL etc.)</i>	3.0%
<i>Editing photos, videos or audio files</i>	16.6%
<i>Use of advanced features of spreadsheet software (formulas, functions)</i>	2.1%
<i>Using spreadsheet software (excel)</i>	2.9%
<i>Creating presentations</i>	17.1%
<i>Word processing programs (word)</i>	17.0%
<i>Changing the options of a software</i>	12.8%
<i>Download or install software / applications</i>	22.8%
<i>Copy / move files / folders</i>	22.4%
4. BUSINESSES	
4.1 Computer usage in enterprises (2019)	87.6%
4.2 Internet usage in enterprises (2019)	86.4%
4.3 Web page usage in enterprises (2019)	52.4%
4.4 Use of social media by enterprises (2019)	73.1%
4.5 Sales through the web in enterprises (2019)	11.9%
4.6 Purchases through the web by enterprises (2019)	7.1%
5. ICT SECTOR	
5.1 Share of investments by ICT companies to total investment by all enterprises (2020)	0.5%
5.2 Number of new and re-registered ICT enterprises (2021)	580
5.3 Percentage of workforce involved in ICT sector (2020)	
<i>Male</i>	4.0%
<i>Female</i>	4.0%
<i>Total</i>	4.0%

Source: ARKEP (2021; Indicator 1) and ASK (2022; Indicators 2-5)

9.2. Annex 2: ICT survey questionnaire

ICT SURVEY

Start of Block: GENERAL INFORMATION AND FOUNDER'S BACKGROUND

Gender

- ☐ Male
- ☐ Female

What is your age?
Age

What is your highest level of education?

- ☐ Primary school
- ☐ Secondary school general
- ☐ Secondary vocational (VET)
- ☐ University
- ☐ PhD / post-graduate

What is your position in the organization?

- ☐ Entrepreneur/owner
- ☐ Manager/CEO
- ☐ Human Resources Manager
- ☐ Other (specify): _____

In what year was your company established?
Year

Where is your company located?

How old were you when you founded the company?
Age

Is this the first company that you created?

☐ Yes

☐ No

What kind of professional experience did you have at the time of creation of the company?

	Yes	No
1. none	☐	☐
2. I worked in a family business operating in the same sector of the company	☐	☐
3. I worked in a family business operating in another sector	☐	☐
4. I worked in another company operating in the same sector of the company	☐	☐
5. I worked in another company operating in another sector	☐	☐
6. self-employed consulting activity	☐	☐
7. foundation of another company operating in the same sector of the company	☐	☐
8. foundation of another company operating in another sector	☐	☐

What extra educational activities have you attended in the field of ICT?

	Yes	No
Formal degree in ICT field	☐	☐
Trainings	☐	☐
Workshops & seminars	☐	☐
Online courses	☐	☐
Certifications (digital marketing)	☐	☐
Other (please write)	☐	☐

End of Block: GENERAL INFORMATION AND FOUNDER'S BACKGROUND

Start of Block: BUSINESS ACTIVITY AND STRUCTURE

What is the main activity of the company? (select those that apply)

- ☐ Software Products
- ☐ Software / IT Services
- ☐ Hardware Products
- ☐ Services for Hardware Products
- ☐ Other (please specify?) _____

The company was born within or passed through

- ☐ Private business incubator
- ☐ Public business incubator
- ☐ Not applicable

Which is the present stage of your company?

- ☐ Seed stage (idea generation)
 - ☐ Start-up stage (on the point of offering a product / service on the market)
 - ☐ Growth stage (one or more products / services on the market)
 - ☐ Later stage (one or more products / services on the market, in expansion or about to be acquired)
-

What is the ownership structure of your company?

- ☐ National ownership
 - ☐ Foreign ownership
 - ☐ Mixed ownership
 - ☐ Branch of a foreign company
-

How would you describe the company's main business?

- ☐ B2B (business to business)
 - ☐ B2C (business to consumer)
 - ☐ B2B2C (business to business to consumer)
-

Are you a member of any of the associations?

- ☐ Kosovo Association of Information and Communication Technology (STIKK)
 - ☐ Kosovo Chamber of Commerce
 - ☐ No ICT association membership
 - ☐ Other (please specify) _____
-

Is your company in possession of any quality standards?

- ☐ Yes
 - ☐ No
-

If yes please specify which quality standards?

Sub-contracting for your production or services?

	YES	No
Do you offer sub-contracting for your production or services?	☐	☐
Are you a sub-contractor for production or services of other companies?	☐	☐

Sales performance

	Increased	Remained the same	Decreased
Within the last year, the sales of your company have?	☐	☐	☐
In 5 years from now, do you expect your company sales to?	☐	☐	☐

If your company sales have increased or decreased, what is the percentage change?

End of Block: BUSINESS ACTIVITY AND STRUCTURE

Start of Block: BUSINESS EMPLOYMENT/ STRUCTURE

Indicate the number of employees (including the founders)

	2019	2022	Expected number of employees in 5 years from now (in total)
Total number of employees			

Give an assessment of the level of skills possessed by your employees

	1-nothing	2	3	4	5	6	7-high competence
managerial	☐	☐	☐	☐	☐	☐	☐
marketing	☐	☐	☐	☐	☐	☐	☐
technical/ICT	☐	☐	☐	☐	☐	☐	☐
relational	☐	☐	☐	☐	☐	☐	☐

Does your company face any difficulties in hiring/attracting employees?

- ☐ Yes
- ☐ No

What kind of skills and or employee qualifications is the hardest to find in Kosovo? Name the three most important job profiles hardest to find in Kosovo?

	E.g. Content writer; software developer
1.Job profile/qualification	
2.Job profile/qualification	
3.Job profile/qualification	

How do you assess your employee salaries?

- ☐ Below industry average
- ☐ Same as the industry average
- ☐ Above industry average

End of Block: BUSINESS EMPLOYMENT/ STRUCTURE

Start of Block: EXPORT AND MARKETS

Does your company export services/products?

- ☐ Yes
- ☐ No

Which of the following services/products does your company export? (select those that apply)

- ☐ Software development
- ☐ Mobile applications development
- ☐ Engineering services
- ☐ DevOps as a service
- ☐ System integration and implementation
- ☐ Networking and telecommunication provider
- ☐ Hardware products
- ☐ Business process outsourcing
- ☐ Software testing
- ☐ Web development/web design
- ☐ Digital marketing (specifically SEO and SEA)
- ☐ Multimedia production
- ☐ Telemarketing
- ☐ Cyber security
- ☐ ICT consulting
- ☐ E-procurement
- ☐ Network and system operations
- ☐ Cloud services
- ☐ Other (please specify?) _____

What is the percentage of total sales from exports? (If company does not export select zero)?

%

0 10 20 30 40 50 60 70 80 90 100

% of sales from export	
------------------------	--

Which are your current export and potential export markets? (select those that apply)

	Current export Market	Potential export Market
Germany, Austria, Switzerland (DACH)	☐	☐
UK	☐	☐
France	☐	☐
Belgium, The Netherlands, Luxembourg (BeNeLux)	☐	☐
Scandinavian Countries	☐	☐
Southern Europe (Italy, Spain, Portugal)	☐	☐
Regional (Albania, North Macedonia, BiH, Montenegro, Serbia...)	☐	☐
USA and Canada	☐	☐
Middle East and Africa	☐	☐
Asia	☐	☐
Other (please specify?)	☐	☐

From the following list, rate the importance (1=Not important 5=Very important) of each of the following aspects of competitive advantages for:

	International market					Local market				
	1	2	3	4	5	1	2	3	4	5

Quality of work	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Technical know-how	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Delivery time and punctuality	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Sector know-how	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Horizontal know-how	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Cultural knowledge	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Price	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Human (knowledge of languages)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Select the entry mode in export markets (select those that apply)

	Tick
Direct exports from your country to the client abroad	☐
Subsidiary/branch office in the target market	☐
Representative office	☐
Joint Venture	☐
Strategic alliance	☐
Distribution partner / Local Partner (sales agent, sales representative, sole distributor, etc.)	☐

Rate the importance of the methods of finding new clients? (1=Not important, 5=Very important)

	1	2	3	4	5
Own market research	☐	☐	☐	☐	☐
Service by external market research company	☐	☐	☐	☐	☐
Through family and personal connections in the diaspora	☐	☐	☐	☐	☐
Internet research	☐	☐	☐	☐	☐
Trade fairs	☐	☐	☐	☐	☐
Potential clients from export countries contact your company	☐	☐	☐	☐	☐
Others (please specify)	☐	☐	☐	☐	☐

To what extent the following pose barrier to expansion of your business? 1=strongly disagree and 5=strongly agree

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Availability of skilled workforce to conduct export	☐	☐	☐	☐	☐
Financing	☐	☐	☐	☐	☐
Legal framework	☐	☐	☐	☐	☐
Lack of support by government institutions (e.g., export financing schemes)	☐	☐	☐	☐	☐
Taxes	☐	☐	☐	☐	☐
Visa requirements	☐	☐	☐	☐	☐
Finding the right partner	☐	☐	☐	☐	☐
Lack of big e-payments and e-commerce platforms (PayPal, Amazon)	☐	☐	☐	☐	☐
Suitable information on export markets	☐	☐	☐	☐	☐
Business contacts in target markets	☐	☐	☐	☐	☐
Branding of the local IT industry abroad	☐	☐	☐	☐	☐
Cost of exporting	☐	☐	☐	☐	☐
Lack of export marketing skills and know-how	☐	☐	☐	☐	☐
Lack of export-oriented training and business development	☐	☐	☐	☐	☐

Technical standards and requirements (ISO, CMM, CMMI...)	☐	☐	☐	☐	☐
ICT infrastructure	☐	☐	☐	☐	☐
Corruption	☐	☐	☐	☐	☐
Other (please specify?)	☐	☐	☐	☐	☐

Rate the importance of the following factors for operation in domestic market (1=Not important, 5=Very important)

	1	2	3	4	5
Availability of skilled IT and non-IT related professionals	☐	☐	☐	☐	☐
Foreign languages skills	☐	☐	☐	☐	☐
Low wages	☐	☐	☐	☐	☐
Increasing demand for ICT services	☐	☐	☐	☐	☐
Tax benefits	☐	☐	☐	☐	☐
Institutional/legal facilitations	☐	☐	☐	☐	☐
Please specify?	☐	☐	☐	☐	☐

End of Block: EXPORT AND MARKETS

Start of Block: NETWORKING

How deep is the collaboration with the listed partners? (1=no collaboration, 5=strong collaboration)

	1	2	3	4	5
Suppliers	☐	☐	☐	☐	☐
Clients	☐	☐	☐	☐	☐
Startup in the same sector	☐	☐	☐	☐	☐
Startup in other sectors	☐	☐	☐	☐	☐
Companies in the same sector (no startup)	☐	☐	☐	☐	☐
Companies in other sectors (no startup)	☐	☐	☐	☐	☐
Private consultants	☐	☐	☐	☐	☐
Universities and other research institutions	☐	☐	☐	☐	☐
Government	☐	☐	☐	☐	☐
Other, please specify?:	☐	☐	☐	☐	☐

Give an opinion on the following statements (1= I do not agree, 7=I completely agree)

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
I can't figure out problems without friends	☐	☐	☐	☐	☐	☐	☐
Network is as important as business itself	☐	☐	☐	☐	☐	☐	☐
Business dealing entail reciprocity	☐	☐	☐	☐	☐	☐	☐
To pay back favor is more urgent than repaying debts	☐	☐	☐	☐	☐	☐	☐
I am alert to market developments that create potential partnership opportunities	☐	☐	☐	☐	☐	☐	☐
I always encourage my friends to introduce their friends to me	☐	☐	☐	☐	☐	☐	☐
I have no problem introducing myself to strangers	☐	☐	☐	☐	☐	☐	☐
I present souvenirs to new friends to express good wishes when there is a marriage, promotion, birthday and so forth	☐	☐	☐	☐	☐	☐	☐
I always look for opportunities to have lunches or dinners with new friends	☐	☐	☐	☐	☐	☐	☐
I send greetings to new friends during holidays	☐	☐	☐	☐	☐	☐	☐

I often invite new friends to participate in various social activities

☐	☐	☐	☐	☐	☐	☐	☐
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I can read others well and know how they are feeling in a given situation

☐	☐	☐	☐	☐	☐	☐	☐
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I know well about what others need and try to do what I can for them

☐	☐	☐	☐	☐	☐	☐	☐
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when I have disagreements with my partners, I usually strive to be flexible accommodate to reach a mutually satisfactory compromise

☐	☐	☐	☐	☐	☐	☐	☐
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I always analyzes what I would like to achieve with others

☐	☐	☐	☐	☐	☐	☐	☐
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In my friends, I know well whom I can trust and whom I can't

☐	☐	☐	☐	☐	☐	☐	☐
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I can well match my energy and resources to my different friends

☐	☐	☐	☐	☐	☐	☐	☐
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I have a clear mind about the interdependence among my friends

☐	☐	☐	☐	☐	☐	☐	☐
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End of Block: NETWORKING

Start of Block: FUTURE POTENTIAL AND NEEDS

What are the main strategic objectives of the company?

	Yes	No
rapid growth in terms of the number of employees	☐	☐
rapid growth in terms of revenues	☐	☐
rapid growth in terms of the number of clients	☐	☐
profitability growth	☐	☐
product/service development	☐	☐
communication development	☐	☐
technology development	☐	☐
increase the brand awareness	☐	☐
internationalization	☐	☐
become a member of a cluster/business ecosystem	☐	☐
develop partnerships with other start-ups in the same sector	☐	☐
develop partnerships with other start-ups in another sector	☐	☐
get a round of financing	☐	☐
other, please specify:	☐	☐

In the last 3 years, have you made investments in innovation and digitalization?

☐ Yes

☐ No

If yes, your company

	Yes	No
it has entered an already existing market producing slightly improved goods / services:Right	☐	☐
it has entered an already existing market producing radically modified goods / services:Right	☐	☐
has launched one or more new goods / services that create a new market:Right	☐	☐

What would you need or request in order to develop and advance company's innovation level, R&D, and internationalization? (select those that apply)

- ☐ Professional facility support to connect with professional bodies and partners
- ☐ Joint networking to international opportunities
- ☐ Participate in actions, programs, instruments, and grants by donors
- ☐ Other (please specify) _____



Which are the company's current sources of finance? Must total to 100%

personal funding : _____
 friends and family : _____
 bank loans : _____
 risk capital (venture/seed capital/ business angel/private equity) : _____
 crowdfunding : _____
 public funding (local, national) : _____
 business incubator/accelerator : _____
 Donors : _____
 Diaspora : _____
 other companies : _____
 Other, specify : _____
 Total : _____

Overall, how has your business been affected Covid-19 pandemic?

- ☐ Large negative effect
 - ☐ Moderate negative effect
 - ☐ Little or no effect
 - ☐ Moderate positive effect
 - ☐ Large positive effect
-

Overall, Covid-19 pandemic in terms of export potential has?

- ☐ Decreased business opportunities
 - ☐ Neither increased nor decreased
 - ☐ Increased business opportunities
-

Write any issue related to business environment that hinders the development of your company or sector in which you operate. Please provide any recommendation to support ICT companies?

End of Block: FUTURE POTENTIAL AND NEEDS
