Improving the Kosovo Innovation Ecosystem: Exploration before Exploitation

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Open innovation enables the circulation of knowledge among businesses in an innovation ecosystem and facilitates the innovation processes. However, there are many businesses operating in the innovation ecosystem in Kosovo that are not yet familiar with the mechanism of innovative linkages, consequently they cannot benefit from it. Therefore, the present study tried to provide a clear picture of how to implement open innovation and its requirements and ultimately the benefits of implementing innovation for them by studying the case study of two large and successful companies in implementing open innovation in Kosovo. Findings disclosed that investing in research and development is the source of innovation. Innovation is manifested in three categories of technological innovation, market innovation and product innovation. Findings revealed that companies are required new equipment and skilled workforces to successfully implement innovation. Innovation in organisations results in improving their position in global markets as well as financial benefits.

Keywords: open innovation, innovation ecosystem, innovation process, organisational performance, Kosovo

Introduction

Innovation has a crucial role in the performance of firms and plays a vital role in the competitiveness productivity of the firm level and national economy.⁴ Many authors have recognised the importance of innovation and its role both at the firm and economic level. Innovations are new creations of economic importance typically undertaken by firms, e.g. it may be a new brand of goods or services, which is a question of what is being

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⁴ Alice Lam: Innovative Organizations: Structure, Learning and Adaptation. School of Management, Royal Holloway University of London, (2011). 163–177.

produced while process innovations can be technological, and it regards how goods and services are produced. Thus, product and process innovations are tightly interlinked to each other, whereas organisational process innovations like 'intangible' services are also essential for economic growth and jobs.⁵ The pace of innovation and the emergence of new technologies has increased dramatically in recent years, so that innovative changes are happening frequently.⁶ There is ample evidence that businesses that respond quickly to these innovations and keep up with them will benefit the most.⁷ So today there are many businesses that have embedded innovation in their business model. This means that value creation in these businesses depends on innovation. In other words, the survival of these businesses depends on innovation, and they are always looking for innovation.⁸ Such strategies always put them one step ahead of other competitors and bring them an unattainable competitive advantage.⁹

Using ideas outside the organisation can be as effective in advancing their technologies as internal ideas. This concept allowed knowledge to circulate freely among all industry players, even among competitors, and leads to the development and emergence of new business models. This is how Chesbrough defines open innovation: "Open innovation is the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively." Moreover, according to Gassmann and Enkel open innovation includes different activities, such as inbound, outbound and associated activities, which can be more or less open, meaning that firms need to open their boundaries and enable inflow of valuable knowledge to foster opportunities for collaborative innovation processes with partners, customers, competitors, suppliers and research institutions. Therefore, open innovation requires managers in firms to make new decisions in developing and exploiting innovation activities.

Charles Edquist: The Systems of Innovation Approach and Innovation Policy: An Account of the State of the Art. DRUID Conference, Aalborg, Denmark, 12–15 June 2001. 1–24.

⁶ Christian Hitz – Karlheinz Schwer: The Role of IT Governance in Digital Operating Models. *Journal of Eastern European and Central Asian Research*, 5, no. 2 (2018). 61–79.

Karim Ben-Slimane et al.: The Legitimation Strategies of Early Stage Disruptive Innovation. *Technological Forecasting and Social Change*, 158 (2020). 120–161; Vijay Victor et al.: From a Recession to the Covid-19 Pandemic: Inflation–Unemployment Comparison between the UK and India. *Economies*, 9, no. 2 (2021); Jonathan Dando – Maximilian Lebmeier: A Novel Valuation Model for Medical Intervention Development Based on Progressive Dynamic Changes that Integrates Health Technology: Assessment Outcomes with Early-Stage Innovation and Indication-Specific Clinical Success Rates. *Journal of Innovation and Entrepreneurship*, 9, no. 1 (2020). 1–28.

⁸ JinHyo J. Yun et al.: The Culture for Open Innovation Dynamics. Sustainability, 12, no. 12 (2020).

Setyani D. Lestari et al.: Antecedents and Consequences of Innovation and Business Strategy on Performance and Competitive Advantage of SMEs. *The Journal of Asian Finance, Economics and Business*, 7, no. 6 (2020). 365–378.

Henry W. Chesbrough: Open Innovation. The New Imperative for Creating and Profiting from Technology. Boston, Mass., Harvard Business School Press, 2003.

Henry Chesbrough: Open Business Models. How to Thrive in the New Innovation Landscape. Boston, Mass., Harvard Business School Press, 2006.

Oliver Gassmann – Ellen Enkel: Towards a Theory of Open Innovation: Three Core Process Archetypes. Lisbon, R&D Management Conference (RADMA), 2004.

Eelko K.R.E. Huizingh: Open Innovation: State of the Art and Future Perspectives. *Technovation*, 31, no. 1 (2011). 2–9.

Kosovo is one of the countries that has made great efforts to grow in implementing innovation in the world. As Kosovo is increasingly developing favourable conditions and policies for innovation, e.g. significant policies and laws to support economic development are in place, but the insufficient institutional capacity of the state has hindered implementation. The agenda of the Science Technology and Innovation (STI) has recently gained political attention in the Kosovo economy. The Ministry of Education Science and Technology (MEST) and the Ministry of Trade and Industry (MTI) are the key institutions responsible for establishing a policy framework and environment for innovation, while the Ministry of Economic Development (MED) is steadily increasing its role in the innovation mechanism. The Ministry of Innovation and Entrepreneurship (MIE) was formed in 2017, and EUR 1.1 million has been allocated to laboratories and specific facilities to support the ecosystem of innovation; however, little progress has been made towards integration into the European Research Area (ERA). With the creation of the MIE, Kosovo has been able to start introducing a program that directly affects the progress of innovation and the economic growth of the country; as a result, the Innovation and Entrepreneurship Fund has been set up to help innovative companies, Non-Governmental Organisations (NGOs), and Small and Medium-sized Enterprises (SMEs) in Kosovo.¹⁴

Not surprisingly enough, the necessary ingredients and all relevant actors of the innovation ecosystem in Kosovo are present, but a systematic approach towards linking such components between them to make the innovation ecosystem function properly as an ecosystem that supports innovation directly has been somewhat lacking. The role of innovation in economic development is not yet fully recognised in Kosovo, and the government and business structures are gradually reflecting the importance of innovation as one of the key pillars of economic growth. The development of open innovation among economic actors is a challenge facing the innovation ecosystem in developing countries¹⁵ and businesses are unaware of how to implement the mechanism and its benefits. Therefore, the present study was conducted to provide a clear picture of the processes, requirements and benefits of implementing open innovation, or in other words, membership in the innovation eco-system in Kosovo. Hence the main objective of this study is to answer the following re-search questions: 1. How do businesses in Kosovo implement open innovation? 2. What are their requirements for implementing open innovation? 3. What are the benefits of implementing open innovation for them?

Methodology

A core objective of the research is to pick up key players in the innovation ecosystem in Kosovo and to use a multi-case study approach to identify their policies, drivers and networks on how to enhance the company's innovation performance. A variety of essential steps are to be taken to design an interview guide for this study with in-depth interviews. In

¹⁴ Andrew Wrobel: Towards an Innovative Kosovo. *Emerging Europe*, 16 May 2019.

Maurizio Massaro et al.: Antecedents to Export Performance and How Italian and Slovenian SME's Innovate During Times of Crisis. *Journal of Eastern European and Central Asian Research*, 4, no. 1 (2017).

order to analyse innovation issues in-depth, it is decided to design and conduct a multi-case study method. In carrying out multiple case studies with an emphasis on the comparison, the so-called case study protocol is vital as it helps to direct a systematic analysis when the case study report can be evaluated on a case-by-case basis. Given this, the article follows all requirements for multiple case studies in the field of the innovation ecosystem in Kosovo and the following model has been adapted and applied. Figure 1 illustrates the processes of conducting case studies and data collection.

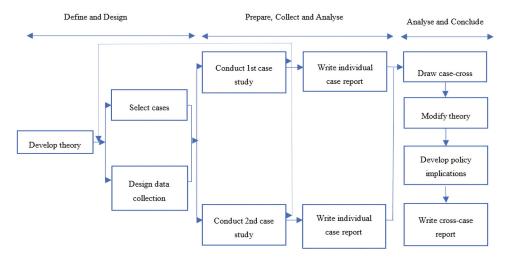


Figure 1: Multiple case study procedures

Source: Compiled by the authors based on Yin (2018): op. cit. 95.

Following the multiple case study model described above and in order to make the study more convincing in this research, a multi-case study method has been applied, and the following two different case studies have been examined:

- 1. The Carriers Class Consulting & Integration Services Joint Stock Company (3CIS J.S.C), or shortly 3CIS, business service firm integrated into the global networks of knowledge intensive business service sector.
- 2. Pharmaceutical manufacturing as a knowledge intensive sector: the case of Trepharm company.

The reasoning behind the two case studies is to map the factors that shape innovation in the institution of knowledge creation or knowledge developing and transferring institution, such as a business service firm of a manufacturing company, within the innovation ecosystem in Kosovo.

Robert K. Yin: Case Study Research and Applications. Design and Methods. London, SAGE Publications, 2018.

Data collection

Data is collected through semi-structured interviews with 10 representatives of each case study (five representatives from the business service firm 3CIS J.S.C. and five representatives from the manufacturing case study firm Trepharm company).

The collection of primary data for case studies is carried out in three phases. The first stage of the interviews was conducted with only one participant from each case study; hence to validate the content, a simplified version of the framework conditions was discussed with them in terms of how they think about it and whether those framework conditions are applicable to their organisations to set up case studies. In order to get accurate responses, the second phase of the interviews was conducted with managerial and non-managerial people who were most important to the subject. While the third phase was repeated with selected interviews in case additional data were required to complete the case study.

Targeted people were informed on time by email, and one-on-one interviews were held as recommended by¹⁷ and in many cases, conversations for each interview were recorded with the approval of the respondent. Innovation issues are a sensitive topic, and in many situations, businesses are unwilling to provide detailed information, especially through a quantitative questionnaire, so that data collection through interviews for this article is considered to be very useful. It is worth noting that most of the interviews were done in English. Finally, besides the primary data collection, reports related to innovation activity were also analysed in the context of innovation in the analysis of two case studies. Furthermore, for data collection to improve the trustworthiness or reliability of the innovation study we have assessed reliability through the application of several factors such as "credibility, dependability, confirmability, integrity transferability, fit standards, understating, generality and control".¹⁸ The following Table 1 offers more detailed information on the reliability analysis of the case study data collection methodology.

Table 1: Trustworthiness of the case studies method

The criteria for trustworthiness	Methods applied in the case studies of innovation research
Credibility	Due to the pandemic situation with the Covid-19, it took us 12 months to conduct interviews with the two case studies. In addition to the collection of primary data, a wide literature on innovation was also considered. The innovation activity reports were also analysed. The case studies were also distributed to the interviewed respondents as to obtain some new knowledge from them.
Transferability	The transferability was supported by manufacturing and service firms.
Dependability	Only senior management and non-management level positions were interviewed to acquire an in-depth knowledge and professional information.
Confirmability	The final research work, in particular the fieldwork of case studies, is circulated for further analysis to a range of professional experts who have already carried out such research.

Naresh K. Malhotra – Satyabushan Dash: Marketing Research. An Applied Orientation. London, Pearson Publishing, 2016.

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Daniel J. Flint et al.: Exploring the Phenomenon of Customers' Desired Value Change in a Business-to-Business Context. *Journal of Marketing*, 66, no. 4 (2002). 102–117.

The criteria for trustworthiness	Methods applied in the case studies of innovation research
Integrity	As noted above, innovation is a sensitive issue; hence, participants have been assured of confidentiality, thus ensuring them that the data and information are only used for research purposes.
Fit criteria	Having respect to the procedures and steps referred to above, which have been carefully applied, then, as a result, a final acceptable "fit criterion" was obtained.
Understanding	For the sake of transparency, the final output is sent to them to show if their inputs are c orrectly and accurately reflected in the research.
Generality	What is considered in terms of generality is the environment or atmosphere, the time of the interview and the way of discussion with the participants.
Control	The inputs provided during the interviews by the participants have a controlling function, as the findings will possibly affect them either positively or negatively.

Source: Compiled by the authors based on criteria suggested by Flint et al. (2002).

Results and discussion

Case study 1: 3CIS

3CIS, which is at the frontier of the current technological revolution cycle in Kosovo plays a key role in the Kosovo innovation ecosystem. With a decade experience, the company aims to increase customer satisfaction by enhancing the role of Research and Development (R&D) solutions that can further improve telecommunications products and systems. The turnover of the company has gradually risen from year to year; for example, from EUR 3.75 million in 2017, it increased to EUR 4.94 million in 2018, or 24.11% higher than in 2017, which continued to rise to EUR 5.87 million for 2019, or 19% higher than in 2018, making the company a leader in the services sector in Kosovo. Since 3CIS relies solely on the international market (mainly on the U.S., the United Kingdom, Middle East, Europe and the African markets), it is distinct from other companies in Kosovo. Information and Communication Technology (ICT) in Kosovo, in particular exports of telecommunications, computer and information services, amounted to EUR 55.8 million in 2018, or EUR 9.2 million more than in 2017. Given this export, EUR 55.8 million and the turnover of 3CIS for 2018 of EUR 4.94 million indicate that 3CIS share represents 8.84% of the country's overall export. In this sense, since 2008, 3CIS has been characterised by continuous growth, and the role of innovation has been in focus as it is considered valuable in business services. Since then, the organisation has established the R&D department as a specialist section dealing with innovation, and automation is the essential task of the R&D department. Moreover, automation in 3CIS focuses on improving common device configuration models, the basic Network Services Orchestrator (NSO), administration and alarm management, and compliance reporting tests. Continuous technological innovation, in particular rising automation services, has improved the front-runner role of 3CIS in the global market for business services. In this context, automation enables hardware resources to populate Unix, opens stack, and builds various types of Virtual Memories

¹⁹ Kosovo, C. B. O.: Statistics. Time Series Data 2018.

(VMs) and the use of standard management and orchestration of gateway functions, policy functions and service functions. As a result, the automation function in 3CIS is higher than before, as senior engineers are well qualified and skilled in their use. It should be noted that the automation function is always built-in partnership with the projects, based on the needs of both 3CIS as project implementation and the client as project beneficiary. Therefore, the application of the automation method differs from project to project. The company invests 18% of the income generated over the years as it is considered very important and profitable for the company's growth. The analysis reveals that the investment in laboratories for 3G, 4G and 5G integration, which cost the company EUR 268,406, resulted in a return on investment of EUR 984,090 (between 2018 and 2019). As a result, 3CIS has managed to recruit 25 new engineers in the company as new workers, and the laboratories will continue to operate and generate profits for the company. The analysis shows that a 1-euro investment in R&D generates EUR 3.6 of income for the company, though this benefit is not always immediate, but it is worth investing in the long term. Besides, 3CIS also continuously invested in training, facilities and education, including participation in ICT conferences, as part of R&D. Another important aspect of 3CIS is the issue of technology, whether or not the organisation has any technology problems, and whom it looks for help. In general, the organisation recognises that there are cases where it encounters technological difficulties, most of which occur in administration, but it is worth noting that 3CIS uses two channels of the solution when coping with those issues. First, it searches for a solution inside the organisation, using the leading technology community to solve the technical problems, and there have been cases where this group is very useful in solving such problems. Furthermore, the organisation is active in organising various trainings for its employees, such as On-the-Job Training (OJT) and Outside-of-the-Job Training (Off-JT), and it has successfully combined in mixing OJT and Off-JT. The first type of OJT is linked to R&D, which focuses on emerging technologies, while the second form of OJT is linked to the recruitment process. In comparison, Off-JT is structured on working procedures specific to customers and are typically not industry standard. There have been cases where senior engineers from 3CIS have been sent to clients such as Comcast, Charter Communications, Unilever and Windstream for Off-JT and benefit in various locations such as the United States, the United Kingdom and Europe. All these efforts helped 3CIS succeed in being very well placed and integrated into the Global Value Chain (GVC) of the Knowledge Intensive Business Service (KIBS) sector and improving the role in the GVC has forced 3CIS to invest heavily in knowledge. The analysis of the case study of 3CIS discloses that the gateway for innovation in this organisation is investment in R&D. This investment brought technological innovation to the company, which resulted in automation in this company. To implement this innovation, they needed highly skilled workforce. Therefore, they adopted two strategies to supply these forces: 1. hiring new skilled workforce; and 2. raise the skills of existing employees with on-thejob training or outside-of-the-job training approaches.²⁰ This helped the company to

Rommel P. Sergio – Maria Rylova: Employee Engagement and Empowerment as Gateway towards Retention: The Case of Volkswagen Group. *Journal of Eastern European and Central Asian Research*, 5, no. 2 (2018).

improve its position in the global markets and brought them financial benefits. A summary of how 3CIS implements innovation is given in Figure 2.

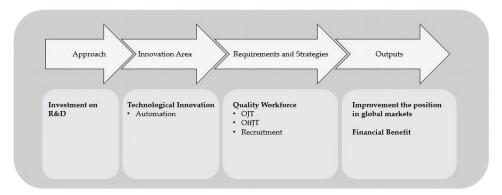


Figure 2: 3CIS Case Study Output

Source: Compiled by the authors based on qualitative analysis.

Case study 2: Trepharm

Trepharm is approaching the completion of the process to be certified by the Pharmaceutical Good Manufacturing Practices Professional Certification (CPGP), which will allow the factory to have the quality system recognised by the European Union (EU) authority and to apply for Good Manufacturing Practices (GMP) and marketing authorisation certificates in EU countries for goods that meet export requirements as well as to bring European products and manufacture in Trepharm. Sales in turnover increased marginally from year to year, resulting in a rise in export participation, from 13.60% in 2017, reaching 87.80% of the country's total exports in 2018; however, with a decrease in export participation of 1.50% in 2019. Nonetheless, consumption is dominated by imports, representing only 2.55% of the participation. In terms of GVC, from neighbouring countries, Trepharm concentrates its exports to Albania and Macedonia, while Libya has the highest export market share in foreign markets, followed recently by Turkey. This makes Trepharm playing a unique role in the Kosovo innovation ecosystem, and it is steadily increasing its integration into the GVC. As far as R&D is concerned, since Trepharm was founded, the part of the research activities has been completely non-existent, while Trepharm has performed well in adopting 140 pharmaceutical products from the British Pharmacopoeia²¹ operating in the United Kingdom. Out of these total products, 94 products have been registered as trademark protection to the Industrial Property Agency (IPA) in Kosovo. Since 2020,

The British Pharmacopoeia covers a broad international market. It reaches more than 100 countries around the world with a focus on protecting public health by ensuring accurate quality standards for pharmaceutical and medicinal products since 1864 and playing an essential role in the process of setting standards in Europe. The British Pharmacopoeia is a fundamental reference tool for all individuals and organisations involved in pharmaceutical, including R&D, production and quality control analysis (www.pharmacopoeia.com/what-is-the-bp).

R&D is structured as a new department but, in order to equip the R&D department, the organisation should concentrate on increasing equipment along with the number of employees (currently it has only three employees), and these people with 13% of the sales turnover budget allocated to R&D must be able to perform research activities; currently, this remains a challenge for the company.

Nevertheless, Trepharm expects to divide up to 13% of its sales turnover to the R&D department, which is a strong indication of the STI position's strengthening. In terms of trademarks, out of 94 applications, the company managed to register 50 products, and out of 2,635 registered trademarks in Kosovo, Trepharm represents 1.89% of the total participation; however, due to a lack of research activities, Trepharm has not presented any application for patents and industrial designs in the IPR office.

Technological and marketing innovations are seen as drivers of innovation for the company. In terms of the automation system, the company has an IT system in place which is connected to all the equipment in the laboratories and a manufacturing system that takes care of everything and manages all the processes ranging from raw material production to selling the finished goods. Trepharm shows capabilities in the use of various managerial techniques in the production process that supports the production system, e.g. many types of International Organization for Standardization (ISO) standards are in place that guaranteed the company to build up its credibility and increased its quality requirements as well as it played a vital role in the path of the certification process. Though Trepharm does not formally recognise the role of Just-in-Time (JIT), in fact, the case study reveals that, to some extent, the way how the production process is directed includes some characteristics of the JIT. Due to the IT system in place, the manufacturing system has provided an efficient production structure that improved efficiency and reduced waste and inefficiencies and minimised costs associated with the production system. Quality circle is also a method that is implemented periodically, and it works based on Problem Based Learning (PBL). Given the importance of marketing as non-tech innovation, it should be noted that marketing appears to have played a significant role, and two types of marketing innovation are present. The first method of marketing innovation is to promote the firm's quality products through participation in international trade fairs. This form of marketing helped Trepharm establish contacts and reaching bilateral export agreements and enter new markets in countries like Libya and Turkey. In comparison, Trepharm's second marketing plan focuses on promoting selected, manufactured products, which can be marketed without a prescription or over the counter. In such goods, the company is highly involved in innovative marketing through social networks and, in particular, television advertisements, especially in the domestic market, which have continuously resulted in a significant contribution to the turnover of the company.

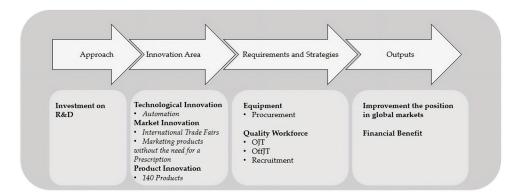


Figure 3: Trepharm Case Study Output

Source: Compiled by the authors based on qualitative analysis.

Similarly to 3CIS, even Trepharm is highly involved in organising different trainings for its employees, and it has successfully combined in house and external knowledge sources (e.g. combining OJT and Off-JT); technical training in the form of OJT and Off-JT is unavoidable in a regularly structured manner. OJT is organised on topics related to the manufacturing system, innovation topics focusing on the development of new products and current products and markets, and quality policies and procedures; furthermore, depending on the role of employees in the organisation, the Human Resource (HR) department decides the type of training. While regarding Off-JT, the company collaborates with inter-national experts and is usually organised for specific topics, e.g. experts from the Czech Republic who are responsible for Good Manufacturing Practice (GMP) and quality are invited to train some number of staff basically from engineering, operation and manufacturing departments in the company, some other experts from Poland come and provide training on product certification, as well as some experts from Slovenia very often visit Trepharm to train the company staff in the field of marketing innovation. Then in the form of the quality circle, they exchange and transfer knowledge from different departments that come together to solve any problem in the form of the Doing Using Interacting (DUI). It should be noted that innovations resulting from STI, and DUI are different. The STI innovation is related to a knowledge management system in which explicit knowledge is formed, whereas DUI innovation is the output of implicit knowledge in doing, using and interacting.²² Technological innovation resulted in automation in this company, while market innovation has encouraged them to choose new marketing approaches to enter new markets. In addition to the skilled workforce, they needed new equipment to implement these innovations. Trepharm, like 3CIS, uses similar strategies to supply its skilled workforce. As in the case study of 3CIS, investing in innovation in Trepharm has given them a competitive advantage that has not only improved their

²² Csaba Makó et al.: When Will Alpha and Omega Collide? In Search of the Theoretical Relevance of EU Innovation Policies. *Vezetéstudomány – Budapest Management Review*, 50, no. 11 (2019). 66–73.

position in global markets, but also brought them financial benefits. A summary of how Trepharm implements innovation is given in Figure 3.

Conclusions

The findings showed by investing in innovation, companies have been able to achieve technology innovation, market innovation and product innovation. This investment in innovation was, of course, not only financially profitable for them, but also gave them a competitive advantage by which they were able to improve their position in global markets. However, the overall governance model for research in Kosovo is rooted in a linear innovation model that focuses primarily on R&D as the primary source of innovation and underestimates the so-called non-R&D sources innovation. Returning to the firm's analysis, mixing OJT and Off-JT is successfully combined by both firms; in both cases, this increased the role of organisational innovation in enhancing knowledge creation and knowledge transfer within firms. Enhancing knowledge creation and knowledge transfer within the case studies in the form of a quality circle and problembased learning (e.g. regular use of project type interdisciplinary work organisation) is perceived a beneficial non-technological form of innovation. The findings of this study contribute to the innovation and open innovation literature by depicting for the first time how to implement innovation in companies operating in Kosovo. While key components and actors exist as part of the innovation ecosystem in Kosovo, there are still some micro and macro-obstacles that hinder the innovation ecosystem. A major obstacle to firms getting access to financing is the risk-averse of banks, as banks need collateral amounting to 300% of the loan value, which is prohibitive for small or innovative firms. However, the Kosovo Credit Guarantee Fund (KCGF) was set up by the United States Agency for International Development (USAID), which offers partial credit guarantees to banks and other financial institutions to encourage increased lending to eligible borrowers. In addition, lack of consistent institution is the other issue of the innovation ecosystem in Kosovo. First, a separate ministry devoted directly to innovation and entrepreneurship was identified as a significant shortcoming in the functioning of the ecosystem. In 2020, this Ministry has merged with the Ministry of Education. Frequent political transition and change of institutions remain a crucial barrier. Lack of innovation skills at the firm level is the other problem of innovation ecosystem in Kosovo. The OECD survey²³ shows that about 25% of companies in Kosovo have claimed that the labour force has inadequate skills to satisfy the needs of the companies on the market, as there is a gap between skills available to the workers and the skills required by the industry. Of course, since the present study examined only two companies, the findings cannot be generalised to all businesses in the Kosovo innovation ecosystem. In addition, due to various reasons such as Kosovo's economic, political and geographical location, generalisation of the results for other countries, especially developed countries, is not feasible as well. Therefore,

OECD: Competitiveness in South East Europe. A Policy Outlook. 2018.

the present study suggests that a similar study be conducted in developed countries and compare its findings with the present study.

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