

Measuring IT Sector Innovations Capabilities through the Company Innovative Leadership Model

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Abstract

This paper aims at presenting the results of research on innovative leadership at the company level for ICT companies in the Republic of North Macedonia and the Republic of Kosovo. The research employed the Company's Innovative Leadership Model (CILM). The paper intends to bring light to three groups of innovation capabilities indicators, Innovation competencies, Innovation potential and capabilities, and Innovation activity. The Company Innovative Leadership Model evaluates the innovations implemented in companies (past), current innovation activities (present), and companies' capabilities for future innovation development (prospect). Some 25 ICT companies from the Republic of North Macedonia and 25 from the Republic of Kosovo took part in the research. The results of these two countries are compared to the results from Bulgaria. The research creates a benchmark for the Republic of North Macedonia and Republic of Kosovo ICT companies' innovative leadership capacities. In conclusion, ICT companies are in the process of expanding their innovation capabilities.

Keywords: Republic of North Macedonia; Republic of Kosovo; innovation; ICT; innovative enterprises. Innovative capabilities.

JEL: L20, M21, O23

1. Introduction

The globalized world that we live in, the rapid-evolving industries, and continuously occurring changes in consumers' tastes and preferences require innovative-based behavior from organizations. Therefore, every business that wants to create a competitive advantage in the dynamic business environment and be successful has to fully develop its innovation capabilities. Although this is a relatively new topic, the number of studies in the field of innovation capability is growing. Recent papers have shown that the innovation capability of a firm is mostly affected by the explanatory factors of the firm's innovation process and the outcome of the process (Iddris, 2016). Moreover, all leaders need innovative leadership if they want their organization to prosper and operate under unpredictable circumstances. Hence, creating an innovative environment within the organization is crucial for the organizational health and viability of the company. Innovations would transform the economy to a superior

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level. Despite the existing market condition, innovative enterprises create breakthrough innovations (Carvalho and Yordanova, Z., 2018).

Accountable effective leaders who can create and lead their teams toward new opportunities are very valuable for the company's success. Good leaders can also be good innovators who embrace a working environment based on continuous improvements. However, a matter that remains pending refers to the question of why not all of the firms that invest in their technological capability are innovative or why some companies that are not focused on investing may show better innovative performance. Theory suggests that the answer to these two questions can be found in the concept of innovation capability. Undoubtedly, a firm's technological capability contributes to a technical change that creates a potential for a successful innovation process (Zawislak, et al, 2012).

Companies view innovation as the function of the Research and Development Department, thus limiting their potential to introduce transformative ideas for the industry they operate (Charles, 2016). Among different industries, innovation is diverse and capacities of innovation vary due to sector. Regarding that, (Yordanova and Blagoev, 2015) have developed a model to measure the innovation capabilities of IT companies. Having a particular model for an industry sector enables a deeper focus and extension of knowledge. The model is a general mechanism for estimating organization performance concerning their capacities, attempts, and abilities to actualize systematic innovation within the organization (Yordanova and Blagoev, 2016). This model will be replicated in the ICT sector of Macedonia.

Also, the model will be replicated in the ICT sector of Kosovo. The sample is 25 companies. The sample is selected randomly among the total number of active companies.

The majority of the empirical studies have been conducted in developing countries indicating a bias toward developed countries. Studying innovation capacities is necessary to consider developing countries' geographical contexts (Mendoza-Silva, 2020). This research will contribute in two dimensions. First, it will contribute to knowledge related to the innovation capacities of developing countries, and second, it will serve as a document to create policies.

2. Literature review

2.1. Innovation capacities

Since the mid-1980s, regional networks of dynamic small firms started to emerge, which began to make inroads into the hegemony of large industrial corporations based on mass production. This led to a new belief in the economic viability of small-scale production, and in its ability to contribute—not just to employment and income creation—but to innovation, productivity, and competitiveness. It is generally perceived that industrial development depends not only on its capacity to deliver at a low cost but also on its innovation capacity. The innovation capacity is viewed as a significant essential to accomplishing and keeping up international market competitiveness. Hence, the innovation capacities of firms and ventures accept more significance in the current market globalization (Parameswaran, 2003). It is an essential driver of a firm's success (Mendoza-Silva, 2020). Innovation activities stand as a fundamental factor for the positioning of the organization within the market and its role in

its performance (Akman and Yilmaz, 2008). Innovation activities guarantee to stay in the market for the firms. So, introducing new processes, products, services and methods needs to provide positive performance for the firm (Schork et.al, 2016).

In recent years, companies implement various processes of idea generation and these ideas tended to be implemented during the process. For example, Börjesson and Elerud-Tryde (2020) analyzed the idea-generation process within two companies Volvo Cars, and Volvo Group find that both companies' idea-generation, implementation and promotion of internal discussions on innovation and how the company should move forward are seen as a process. This shows that innovation is a systematic and active approach aiming to develop innovation capacities and not a single try. Having innovation capacities is a fundamental need to develop sustainable innovation (Argatu, 2020).

The range of factors that contribute to the development of innovation capability is wide. It is required technology stock and human capital able to apply the technology. The sources of innovation capabilities can be categorized into two groups: internal and external. Significant internal sources include (a) the education and earlier working experience of the entrepreneur/manager(s); (b) the expertise of the employees; and (c) continuous technological developments including R&D, on-the-job training, technological licenses, etc. Significant outer sources are (a) systems with an assortment of operators and organizations; (b) geographical position advantages; and (c) institutional help (Romijn and Albaladejo, 2002).

The ICT sector went through a difficult period due to the pandemic. The pandemic's influence is multifaceted, ranging from

work organization to employee training and development. Despite the necessity for digital transformation and advantages, firms are taking steps to digitalize their operations (Dervishaj and Neziraj, 2022). However, the research does not investigate the influence of pandemic on innovation and digital transformation of companies. The research with a focus on the correlation of ICT and innovation in the Republic of North Macedonia, and the promotional role of ICT for innovation found that firms putting resources into innovation activities, for example, R&D, machines, software and perceived innovation possibilities are heading towards innovative operation. Firm participation with different firms is generally significant for the firm and has an extraordinary impact on the innovation of the firm (Klisaroski, 2018). In a study with 9,354 companies from 9 countries in the EU and 5 from the Southeast (including Bulgaria and the Republic of North Macedonia Gërguri-Rashiti et al., (2015) found that the R&D level has a positive and significant relationship with innovation, competition from foreign companies has a positive impact on innovation activities of the domestic companies, and there is a strong correlation between human capital and innovation decision.

Having a competitive advantage and building up a solid positioning of the firm is associated with the innovation capacity of the firm, also, firms should have a continual approach to be successful and develop competitive advantages in the future by analyzing the position of the firm in the market. This will allow the firm to identify its weaknesses and through innovation transform the position (Akman, and Yilmaz, 2008). A study of Volvo Cars and Volvo Group investigates the role of innovation attention in innovation initiatives. As such, it is evidenced

that attention to innovation is an important factor in the success of innovative ideas (Börjesson and Elerud-Tryde, 2020). Making the important move toward innovation is required to offer effective solutions to cutting-edge world issues, either in business or social issues. As a liquid cycle, innovation merges society stakeholders in a process towards reshaping the current static methodology and achieving a situation dependent on knowledge and different stakeholders' associations (Argatu, 2020).

According to "The Future Workplace" during the last ten years in Kosovo, the number of registered ICT Businesses is 1,187, and the number of Active ICT Businesses is 1,174. Most of the companies are concentrated in Pristina, the capital city of Kosovo (The Future Workplace, 2020). In 2018 the contribution of the ICT Industry to the GDP was 1.9%. In the Republic of North Macedonia within the year 2019, the contribution of the ICT Industry to the GDP was 3.4 %, which is the highest in the last five years. The total turnover of the ICT sector for the year 2018 amounts to EUR 668 million. The total number of ICT companies in Macedonia in 2018 is 1,919 (PwC Macedonia, 2020).

2.2. Measurement of innovation capabilities

An important part of this paper is the measurement of innovation capabilities. Argatu (2020) in a recent study proposed a model to measure the innovation capacities of social enterprises. The model constitutes three sections "collaborative social networking, innovation proactivity, and social innovation strategy". Three sections are summarized in table 1. Improving their innovation capability remains for SMEs a pivotal process. There are three key objectives to support the purpose:

first, setting innovation capacities and indicators; second, the role of performance measurement when empowering the innovation capacities; and third, developing a framework helping SMEs in the process of innovation capability development (Saunila, 2016).

Innovation capacity is introduced not as a uni-dimensional model. The model comprises four dimensions. The model dimensions comprise product development capability, innovativeness, strategic capability, and technological capability, which can be evaluated at the individual level. This capacity must be estimated not just by the association's capacity to develop new products and mechanical cycles but in addition by different components fundamental to the innovation outputs, such as innovativeness and strategic capability (Vicente & Teixeira, 2015).

Most of the authors tend to measure the innovation capabilities of the firms through an examination of current performance data or historical performance data. Different from that (Yordanova & Blagoev, 2016) applied a different approach aiming to introduce a standing model which combines current innovation efforts, results, performance and future potential. This model comprises twelve indicators that are grouped under 1. innovation activities of the company (R&D income, staff employed in R&D, number of innovations per year, ratio between innovations done in-house and outside, R&D expenditures over total revenue, trademarks, patents, and designs, education, and training), 2. competencies (experience, motivation, behavioral characteristics), and 3. potential for innovation (flexibility, social skills competencies, platform and data, leadership strategy, and business processes).

For this research on of ICT sector in Kosovo, innovation capabilities will be applied (Yordanova and Bogdanov, 2016) model. The model has contextualized and addressed the key aspects of complexity in ICT sector

innovation capabilities measurement, specifics of the developing economies, and the importance of the model approach regarding the measurement of innovation capabilities in the past, now and in prospect.

Table 1. Sections of the model that measures innovation capacities of social enterprises.

Section	Details
Collaborative social networking	It measures the effectiveness of managing and developing connections with private and public entities and the maintenance of knowledge and relations to gain positive outcomes for all the parties involved.
Innovation proactivity capabilities	Systematization of innovation priorities, factors of influence in correlation with resources that are employed in line with the social enterprise's profile and opportunities
Social innovation strategy	It measures the level of awareness of the social enterprise for the measurement of innovation results and sets clear and achievable objectives.

Source: Argatu, R., 2020

2.3. Innovative leadership; Contribution of leadership to the innovation of companies

“Innovation leader” represents “entrepreneur and visionary shapers” who consider themselves to be self-reliant and capable trend-setters. Innovators are considered generators of innovations. Leadership is something that can be gained due to training and education. (Schork et.al, 2016).

Leadership does not express the level of position in the hierarchy of the organization, nor the title within the company. It should not be correlated with the managerial position. Leadership comprises usually competencies such as a positive attitude, optimism, both high IQ and EQ, the ability of long-life learning, prudence, courage, decision making, change management, risk-taker, innovation, expressing orientation and goals, and level of ethics and integrity. Having all these competencies in mind we can draw common grounds of innovation and leadership in the process of developing new products, processes, or

methods (Yordanova and Bogdanov, 2015). This gives rise to the fact that in ICT sector leaders need to demonstrate the ability to generate innovation.

The position of the leader within the organization is not just to guarantee the quality level of output, but also to show the whole management orientation toward quality improvement. Thus, for leaders to succeed in their activities it is important to focus on overcoming functional boundaries through changes. The ability to adapt the change is a crucial issue and is related to the vision of a leader (Chathoth and Olsen, 2002). Nowadays, leadership is related to personalities, but also organizations. Understanding the concept of organizational leadership and how it is put to use is essential for the organization's success, especially for those that are still in the process of striving to become industry leaders. Leadership should not be identified solely with individuals, but also with organizations. Understanding the idea of leadership at both levels and

how it is used in organizational growth and development, particularly for those that are striving to become industry leaders, is very important (Yordanova and Bogdanov, 2016).

3. Methodology

This study is based on a questionnaire survey data collection. The questionnaire consists of 23 questions. The questionnaire was distributed between March/April to May 2020, by sending it using email to key firms in the IT sector in Kosovo and the Republic of North Macedonia. These data are analyzed and compared with the data of the study with the same model conducted by (Yordanova and Bogdanov, 2016) for Bulgaria.

During the period of data collection, surveys were sent to 100 companies from both countries. But, altogether, 25 surveys from Kosovo, 25 from the North Republic of Macedonia, and 40 from Bulgaria were returned. They represent more than 1% of active companies.

The research aim is to explore the innovation capabilities of ICT companies in Kosovo, the Republic of North Macedonia and Bulgaria. The study is based on the model Company's Innovative Leadership Model. The model corresponds to 12 indicators. All 12 indicators have an element that measures specific aspects of the indicator. "The indicators measure a company's innovation activity, innovation potential, and innovation competencies" (Yordanova and Bogdanov, 2015). As for the structure of the questions, they are in closed-ended form and Likert scale.

The data are analyzed in SPSS and E-views statistical packages. First, a descriptive analysis is introduced. Also, regressions and correlation tests are run to further develop the analysis.

4. Results

The results of the research are based on the Company's Innovative Leadership Model in two countries (the Republic of Kosovo, and the Republic of North Macedonia), and in comparison, with results of research conducted by (Yordanova and Blagoev, 2016) for Bulgaria are presented below.

Change in sales revenue-Results shows that an average level of 42,3% of companies in Kosovo has met revenue growth every year compared to the Republic of North Macedonia at 36%. The results are at a similar level to Bulgarian companies which meet the average level of 15-30%.

Social capabilities- The questionnaire suggests the following social tools which companies might use to improve their innovation performance concerning that measure. The possible options are (1) customer surveys as the main customer channel for gathering customer feedback; (2) company Facebook and LinkedIn account activity, (3) official and updated website, as direct ways of communicating with customers; (4) involving customers in innovation development and innovation testing as one of the strongest tools for product development; (5) CRM software as the strongest analytical tool for customers' interaction (communication, sales, satisfaction, improvement of processes, products, marketing); (6) direct mailing campaigns as pro-active activities towards existing and new customers; (7) using lean methodology as one of possible methodology for innovation system development (Yordanova and Bagoev, 2016).

The results show that companies in Kosovo have Facebook and a company website (73.07% have a website, and 76.91% have a Facebook account). Companies in the Republic of North Macedonia (61.53% have

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a website, and 54.15% have a Facebook account). These data show a higher level of usage of the website and social media among Bulgarian companies, where 97,5% have a website, and 75% have a Facebook account. CRM software has a very low level of usage where only 27.92% use it in the Republic of North Macedonia and 53.84% in Kosovo, and 40% in Bulgaria.

Platform and data-Using platforms and data actively is an advanced tool for product development and process automatization. The

most widely used tools in that area are up-to-date customer base with all our customers used in Kosovo at 42.29% of companies, 56% in the North Republic of Macedonia, up-to-date Product catalog 66%, 68% in the Republic of North Macedonia, internet for sales 76.92% in Kosovo, 60% in the Republic of North Macedonia, communication channels which gather ideas from all employees 77% in Kosovo and 60% in the Republic of North Macedonia.

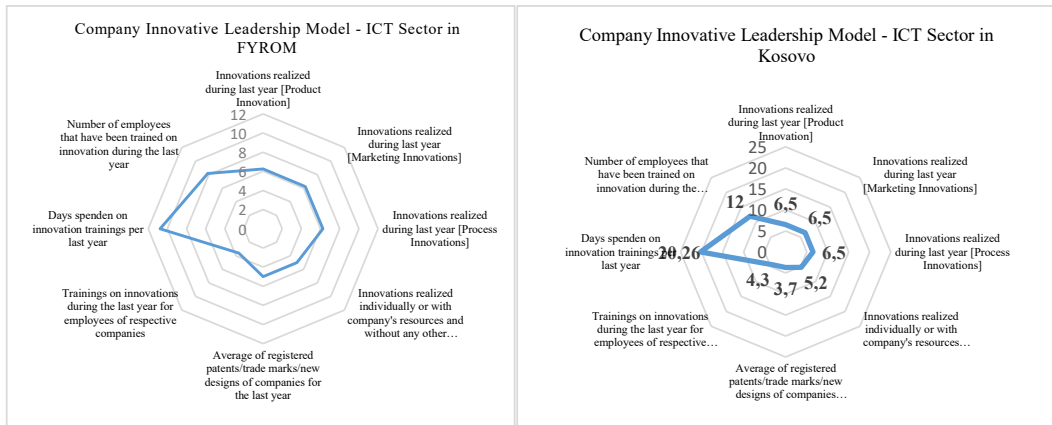


Chart 1. Average levels of a few criteria of the Company Innovative Leadership Model – the IT sector in Kosovo and the Republic of North Macedonia

Leadership- Leadership efforts of companies are measured by assessing some prerequisite policies, programs, or established rules and practices within companies. Their existence, or absence, respectively, provides an important reading as to the capacity for further leadership development and growth (Yordanova and Blagoev, 2016). We find that 73% of companies have policies and procedures on how to develop our employees in Kosovo and the Republic of North Macedonia 56%. 72% have mentor and trainee programs within the company in Kosovo and 60% in the Republic of North Macedonia.

Regarding collecting ideas and processing, 60% of respondents in the Republic of North Macedonia, and 77% of ICT companies in Kosovo use communication channels that gather ideas from all employees.

Strategy planning and policies- Regarding policies and procedures for innovation development 62% of companies created some kind of innovation strategy in Kosovo and 58% of companies in the Republic of North Macedonia. Having a policy and procedure will allow companies to have a settled process of innovation management within the company.

Table 2. The development of policies and procedures for innovation development

We have developed policies and procedures for innovation development	Yes, we do it and make a lot of efforts	Not applicable/do not practice it	Yes, we are doing something like that	Planning in the future
Kosovo	30,76%	19,23%	30,76%	19,23%
North Republic of Macedonia	23,07%	19,23%	34,61%	23,07%

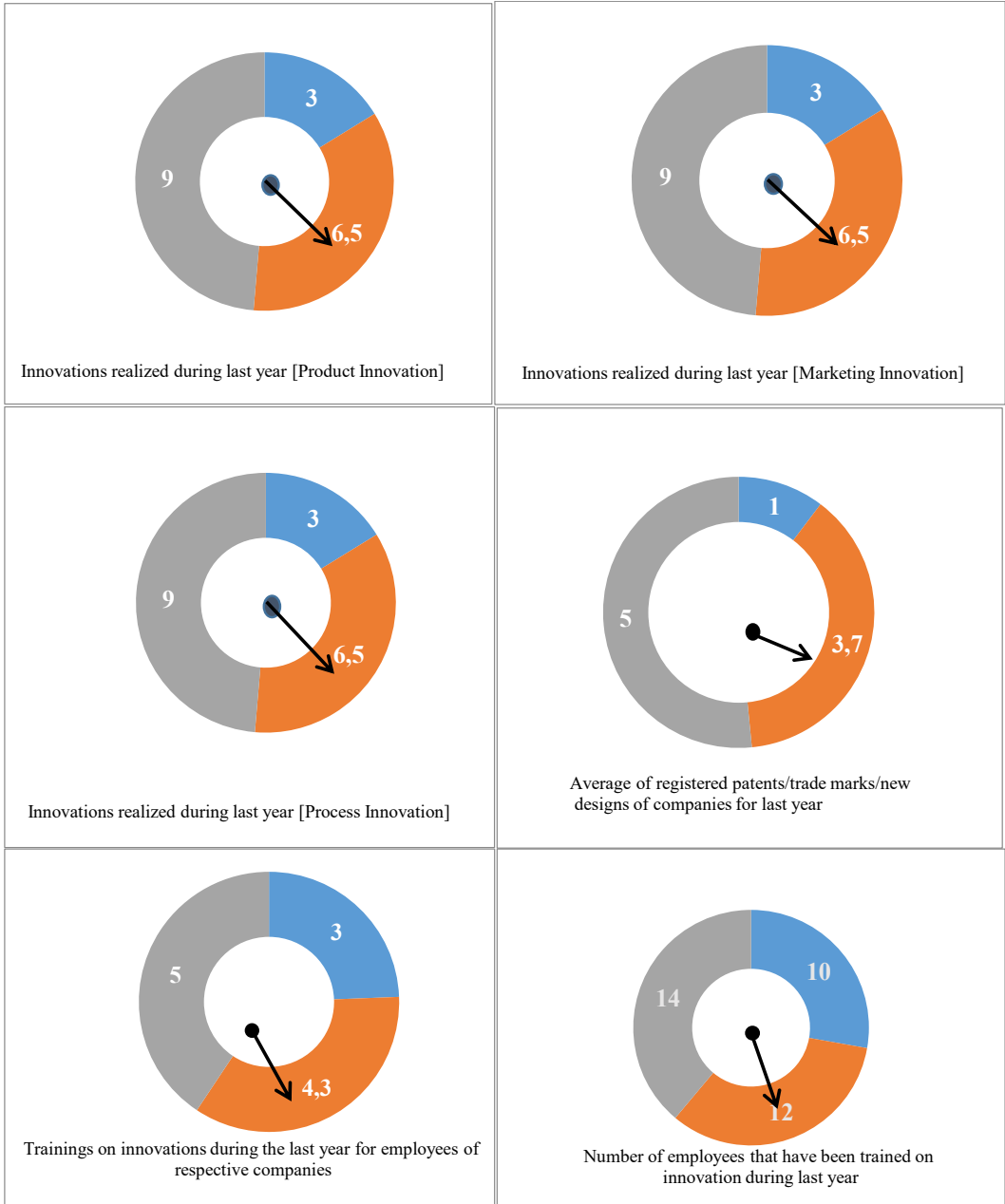
Training in innovation for employees - The number of employees trained reflects the investment dedication to human capital with a focus on innovation. In this line, on average 12 employees are trained for innovation, with an average of 20 days during the year and 4.3 training during the last year. In the Republic of North Macedonia, on average 8.2 employees are trained for innovation, with an average of 11 training days during the year and 3.6 training during the last year.

New product /process/ marketing/ organizational innovation - The introduction of

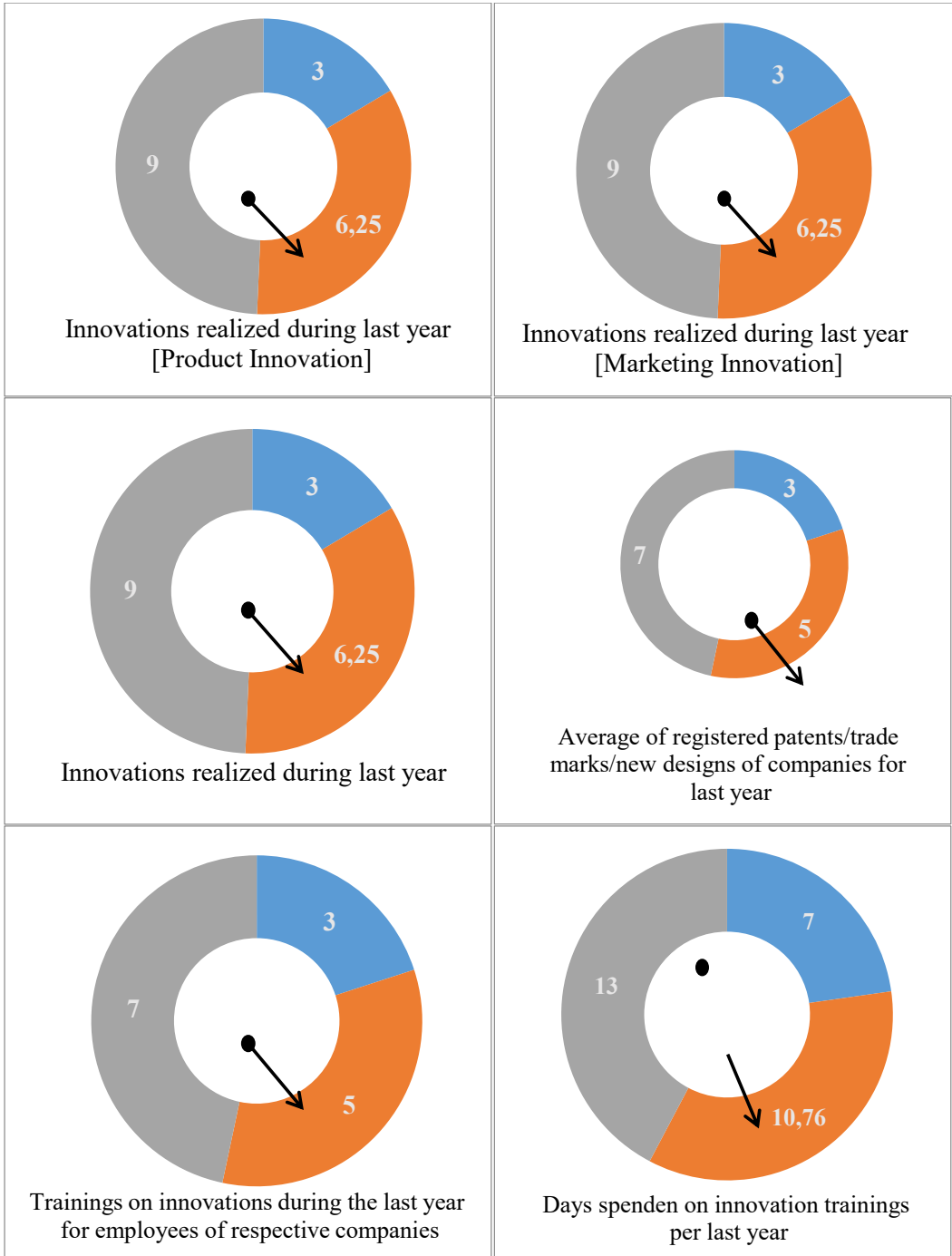
a new or novel product, process, marketing approach, or organizational improvement as innovation is more or less a matter of perception, understanding, and knowledge of innovations (Yordanova and Blagoev, 2016). The research results show an average of 6 innovations during the year. The average in-house innovation is 5.2 for Kosovo, and 5.2 for the Republic of North Macedonia. The Average of registered patents/trademarks/new designs of companies for last year is 3.7 in Kosovo and 5 in the North Republic of Macedonia.

Table 3. New product, process, marketing, and organizational innovation

	Kosovo	Republic of North Macedonia
Innovations realized during last year	6,5	6,25
Innovations realized individually or with the company's resources and without any other partners	5,2	5
Average of registered patents/trademarks/new designs of companies for last year	3,7	5



Graph.1. Results from CILM's indicators for Kosovo



Graph.1. Results from CILM's indicators for the Republic of North Macedonia

Conclusion

The research project objective is achieved to create a benchmark of ICT sector capacities and capabilities in the process of innovation. The orientation of the research was on the main aspect of innovation based on the Company's Innovative Leadership Model with a focus on the examination and evaluation of various companies' efforts, performance, and capabilities in providing and implementing innovations developed by Yordanova and Blagoev. The model is applied to evaluating ICT companies in Kosovo and the Republic of North Macedonia. This research created a benchmark for this sector.

The results from the research indicated that companies in Kosovo and the Republic of North Macedonia use social media and websites to promote their activities. The data compared to Bulgaria are lower and need more improvement. CRM software has a very low level of usage. With the usage of platforms and data, we notice a high level of online sales platforms and a very low-level usage of databases for clients. Leadership efforts are measured by assessing policies, programs or established rules and practices within companies. Their existence, or absence, respectively, provides an important reading as to the capacity for further leadership development and growth (Yordanova and Blagoev, 2016). We find that companies have policies and procedures on how to develop their employees, and have mentorship and trainee programs within the company. Regarding collecting ideas and processing, ICT companies use communication channels that gather ideas from all employees.

In terms of training for employees in Innovation as investment dedication to human capital, we have noticed a low level of average employees trained for innovation. More

training is needed for innovation management. With regard to the investment level on human capital, we evidence a good level of new product /process/ marketing/organizational innovations. Despite that, more efforts should be dedicated to innovation processes within the company.

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