

# Study on the Utilization of National and EU Funds in Financing Capital Investments of ICT Companies

I. Bestvina Bukvić \*, I. Đurđević Babić \*\*, D. Pekanov Starčević

\* Faculty of Economics in Osijek, Department of Finance and Accounting  
[ivana.bestvina.bukvic@efos.hr](mailto:ivana.bestvina.bukvic@efos.hr)

\*\* Faculty of Education, Department of Natural Sciences, Osijek, Croatia  
[idjurdjevic@fozos.hr](mailto:idjurdjevic@fozos.hr)

\*\*\* Faculty of Economics in Osijek, Department of Finance and Accounting  
[dubravka.pekanov.starcevic@efos.hr](mailto:dubravka.pekanov.starcevic@efos.hr)

**Abstract** - The EU programmes and national funds, among others, are supporting regions and companies to reach their economic potential, create innovative products, services and increase employment, thus contributing to the economic and developmental goals of their country and the EU as a whole. Nevertheless, the authors found out that during the last five years the Croatian ICT companies insufficiently used these funds in the implementation of their capital investments. With the aim of identifying the reasons for the low utilization of national and EU funds, the authors conducted a survey among Croatian ICT professionals which showed that those respondents who think that ICT companies are reluctant to use grants from EU and national programmes also think that the application process takes too much valuable time. Therefore, the complexity and the time necessary for the application, development and evaluation could be a reason for low utilization. This finding is considered a valuable signal for policy-makers to conduct changes on administrative levels for the following funding period, with the aim of increasing the utilization of available grants in ICT sector investments.

**Keywords** – national and EU grants, ICT sector, capital investments

## I. INTRODUCTION

This paper tries to identify the reasons for the low utilization level of national and European Union funds by Croatian companies of the information and communication (ICT) sector. Except direct effects, EU and national financial support is indirectly contributing to the national business supporting system and is enhancing social and economic change [1]. Also, it is clear that investments, especially in the ICT sector have a positive effect on regional innovations and economic growth [2,3]. For that reason, numerous calls are available for supporting projects of small and medium sized enterprises (SMEs) in the field of business development, the implementation of high technologies, education, environmental protection and energy efficiency, quality assurance, support for reaching management efficiency [2], research and development (R&D) etc. Although Surubaru [1] argues that exact effects of EU funded projects are still difficult to measure and even qualify

precisely, numerous studies indicate positive effects of using EU subsidies in supporting public investments [3] and positive effects for projects that are dealing with socio-economic issues or investments in the private sector [4,5,6,7]. The positive results of EU funding on SMEs performance were discovered [8] where enterprises supported by EU funds have positive effects measured by firm-survival, employment, sales/turnover etc. and „a higher level of innovative investment implementation in relation to other business entities” [5]. In the lack of EU financial support numerous businesses would not be able to come up with innovations, and in that way positive effects that these investments would have on the business environment would not be achieved. Therefore, the support directed through EU and national funds and programmes is evaluated as crucial [5].

It is clear that ICT infrastructure and usage has an impact on the development and growth measured by GDP per capita [9] and value added (VA), where the EU ICT sector VA is in constant growth from 2009 according to the EU Digital Economy and Society Index (DESI) 2020 Report [10]. Therefore, the investments in ICT infrastructure in a sense of increasing the level of access [9] and investments in ICT innovation and businesses, should be a priority [9, 11] Therefore, this field is a subject of active research, as well as measurement of its economic effects [12]. For that reason, the aim of this paper was to analyze the questions concerning the low utilization level of EU funds by Croatian ICT companies, which was identified through official statistical information published by the Croatian Bureau of Statistics.

The survey on the business environment of ICT companies in Croatia was conducted at the end of 2019. The section on the utilization of EU funds is further analyzed and the results are presented in this paper. The paper is organized in four chapters. The following chapter is a literature review on SMEs access to investment funds and ICT business investments in Croatia. The third chapter is a description of the methodology and research results, while the last chapter is providing the concluding remarks.

## II. ACCESS TO THE EU AND NATIONAL FUNDING

This chapter analyzes the access to EU and national funding where different "EU cases" are shown with a focus on data for Croatia in the last part of the chapter.

The positive effects of national and EU funding are well known, but there are still issues regarding the different intensity and utilization of available resources on the level of EU member countries and regions. The reason for these differences can be found in the period of EU accession [4], because older member states had more time to take advantage of the positive effects of EU membership and are now investing more in innovation capacities i.e., internal and external R&D. At the same time, the newest members tend to invest more in innovation inputs [4] and in that way they miss the opportunity to develop their own innovation capacities. If observing gross domestic product (GDP) and investments, the richer „member states and regions typically find it easier to make use of financial instruments” [13] where countries with more favorable socio-economic conditions are more efficient in the implementation of the EU programmes [9]. The differences in the level of utilization of EU funds and programmes as financial sources, can also be found if observing different business sectors which utilized the investments, where EU funds are more efficiently used in manufacturing companies in comparison to service sector businesses [4].

The proposed solution for these issues is a higher level of discretion of member states in the selection of their funding priorities and combination of EU and national funding [14], where every country or region would have a higher level of autonomy to define the best model for distribution of these sources, which could, by Gouveia, Henriques and Costa [14] provide higher effects. This new distribution model would define the sectors and types of projects which would be supported in line with the EU Cohesion policy goals.

In order to overcome the financial challenges and economic disruption the business sector is facing, the financial resources from EU and national funds are allocated to support SMEs through public funds [8] (through subsidies, grants or even non-financial support). Here, the main categories of funding should be projects that affect the companies' innovation through research, development and innovation in sectors with the highest growth potential according to national and regional smart specialization strategies [15]. In this context, projects financed at most are those that improve digital skills and enhance digital content, including systemic ICT infrastructures in the field of e-inclusion, e-education, e-health and e-culture. They are increasing the added value which is a result of the implementation of ICT sector products and innovations in the field by developing clusters; financing the implementation of ICT for the purpose of business development etc. [15]. Applied projects for EU and national funding are evaluated according to criteria published in the Guidelines for Applicant's. In this process the evaluators want to ensure that the applicants and their partners "have stable and sufficient sources of finance to maintain their activity throughout the period during which the action is being

carried out and, where appropriate, to participate in its funding; and have the management capacity, professional competencies and qualifications required to successfully complete the proposed action” [16]. Project goals and purposes should be in line with the national and EU strategic goals. Also, the benefits to employment, economic growth, energy efficiency or environmental contributions are evaluated.

According to Holst [17], the EU has given a proposal for investments in digital technologies over the new financial framework period (2021 to 2027) close to 150 billion euros. The amount would be mainly distributed through three main programmes as shown by Fig. 1. After the Horizon Europe programme, which would have the largest investment sum of 97.6 billion euros, the most important programs will be Connecting Europe Facility 2 with 42.3 bill. EUR and High-performance computing with 2.7 bill. EUR. (Fig. 1.)

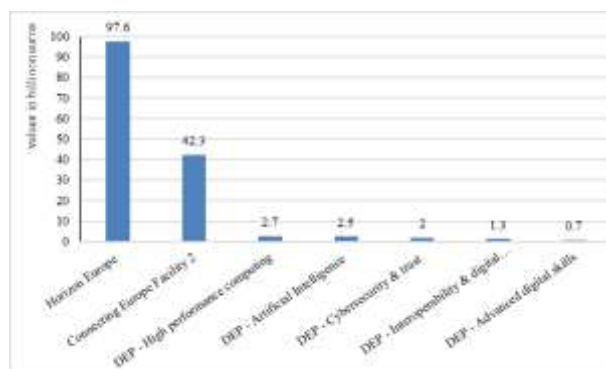


Figure 1. Digital investment budget of the European Union (FINANCIAL FRAMEWORK 2021 TO 2027). Source: Adopted according to Holst [17]

The goal of the European SME Instrument is to provide public funds to the 'EU Innovation Champions' which are evaluated as best SMEs in EU [18], and digital companies have significant opportunities for innovational development. On the other hand, Gruber notes [18] that the SMEs which used grants are actually developing less innovations than SMEs that did not receive the financial support, where the author identified the inconsistency in the allocation of the EU innovation funding and EU innovation strategy goals [18].

By analyzing SMEs access to finances, it was found out that there are market imperfections that are a limiting factor in conducting investments and business growth [19]. The companies with higher collateral, higher internal financing or access to alternative sources of funding (non-bank funds and grants) have higher investment rates [8] where Martinez-Cillero, Lawless, O'Toole and Slaymaker state that "investment could be 55% higher than present if financing constraints were completely eliminated" [19]. Piątkowski [6] found a difference in attitudes of SMEs towards the access to external investment financing that is visible in the reflections on un/availability of external financing; attitudes towards accepting the cost of obtaining external financing; market position after investment and attitudes towards investment as a factor which determines the company's future development [6].

SMEs which have received the funds had in average more positive responses.

By analyzing the project application success rate of companies in Poland and in Lithuania, Keil [20] found that in some priority fields there is a relative low application success rate. The author concluded that the obstacle could be the non-understanding of the support scheme or the eligibility conditions for funding. Keil questions the adequacy of the project evaluation criteria or incompatibility between priorities and applicant's business activity [20].

Table I. shows the analysis results of official data on gross investments in the ICT sector in Croatia. According to data shown in Table I, ICT companies are mainly investing in equipment and intellectual property (IP) products in contrast to the majority of investments in all business sector in Croatia, where the majority of investments are carried out in business facilities. The specificity of investments in the ICT sector is visible in its structure which contributes to the further lack of classic credit collateral, especially in the SMEs. Here, the importance of national and EU grants and guarantees could be especially important, but those are, as shown below, still underused.

TABLE I. GROSS INVESTMENT IN NEW AND EXISTING FIXED ASSETS BY INVESTORS ACTIVITY AND TYPES OF ASSETS IN 2019 (IN MILL. EUR)

Level National / ICT sector	Total	Business premises	Machinery and equipment	IP products	Other assets
<b>Total investments in Croatia</b>	<b>8,345</b>	<b>4,016</b>	<b>2,374</b>	<b>386</b>	<b>1,569</b>
Share in "total investments in Croatia"	100%	48%	28%	5%	19%
<b>ICT sector investments</b>	<b>464</b>	<b>89</b>	<b>197</b>	<b>154</b>	<b>24</b>
Share of ICT sector investments in "total ICT sector investments"	100%	19%	42%	33%	5%

Source: Authors' work according to the Croatian Bureau of Statistics [21]

The sources of financing of investments carried out by the ICT sector in Croatia are presented in Table II where it can be seen that the ICT sector does not sufficiently use the available EU and national funds. According to these sources, they are funding only 4% of the total investments. On the other hand, this sector mainly uses its own capital (91%) for financing long-term capital investments, thus omitting the benefits it could have from using grants or financial leverage. According to the European Commission information for Croatia, the total amount of investments planned for allocation from the ERDF fund in the period 2014 to 2020 in the ICT thematic objective was 113,051 million EUR, total costs decided (proposals approved) on the level of 42.4% (47,899 million EUR) and spent 30% (14,362 million EUR). [22] where the higher activity is detected in the last year by 14,746 mil. EUR decided and 6,537 million EUR spent.

TABLE II. SOURCES OF FINANCING (ACQUISITION) OF INVESTMENT IN FIXED ASSETS IN 2019 (IN MILL. EUR)

Level National / ICT sector	Total	Equity and joint assets	Budgetary assets and assets according to special regulations	EU funds	Loans and leasing	Other
<b>Total investments in Croatia</b>	<b>8,345</b>	<b>4,031</b>	<b>1,376</b>	<b>745</b>	<b>2,019</b>	<b>175</b>
Share in total investments in Croatia	100.0%	48.3%	24.2%	8.9%	16.5%	2.1%
<b>ICT sector investments</b>	<b>464</b>	<b>422</b>	<b>6</b>	<b>14</b>	<b>3</b>	<b>19</b>
Share in total ICT sector investments	100.0%	91.0%	1.4%	2.9%	0.6%	4.1%
Share of ICT sector investments in "total investments in Croatia"	5.6%	5.1%	0.1%	0.2%	0.0%	0.2%

Source: Authors' work according to the Croatian Bureau of Statistics [21]

According to the Croatian Bureau of Statistics the contribution of the ICT sector to Croatian GDP in 2019 is 4.1% [23], while the share of ICT sector investments in total investments in Croatia is 5.1% [21]. The continuation of investments in the ICT sector is important not only for that sector but for other sectors and the Croatian economy as a whole. Arvanitis and Loukis state that ICT investments are important for the continuation and success of the digital transformation [24].

The Croatian economy is slow in conducting digital transformation [25] which certainly affects the dynamic of ICT sector growth and investments. "Investment in public and private R&D and digitalization would help to support the economy's capacity to innovate, if acting in synergy with investment in the education system to improve people's skills" [26, p. 4].

On the other hand, interesting examples of Croatian companies oriented towards international markets whose projects were approved for EU funding can be found. Amphinicy Ltd. is a software technology company in the field of satellite and space industry. Its EU funded project aims to commercialize the innovative Blink software solution in the S3 area of Energy and Sustainable Environment to the global market by innovating the delivery process [27]. Sedam IT Ltd. is a leading Croatian provider of IT solutions and services. Its EU funded project aims to commercialize an innovative security platform for distributing applications in the Android environment (SAAMS) software solution to the global market [27]. Both projects were approved and co-financed 50% from the ERDF, the "Innovations in S3 areas". The call for project financing was opened in July 2019 and the contract signed in March 2021.

Except from ERDF, significant funds were available through the European fund for regional development (ERDF) for companies and scientific organizations (IRI2) where ICT companies were able to apply for financing research and development, integrator for the development of business competitiveness, innovations in S3 areas oriented towards SME's, 2020 CEF Telecom for the

purpose of development of European Digital Service Infrastructures (DSIs) etc.

For the purpose of identifying why there are so few examples where IT companies decide to apply for tenders for the use of EU funds in financing their projects, the authors conducted a research whose results are presented in the following chapter.

### III. METHODOLOGY AND RESEARCH RESULTS

Since the best information for this pilot study could be obtained from the real sector, the convenience sampling method was used and participants of the IT expert conference which took place at that time in Osijek were asked to participate in this research. The research was conducted using the convenience sampling method due to the availability of respondents and the time required for data collection.

In 2019, basic information about the company they work for, their position in it and thoughts about the use of EU and national funds were collected from 112 participants, using a questionnaire. The fundamental information about the company they are employed in included data about the firm's primary activity, place of registration, an estimation of the amount of income that the firm had in 2018, size of the firm, number of employees and whether they sell their services mostly to domestic or foreign firms. The participants' impression about the use of EU and national funds was collected along with their opinion about the unwillingness of the IT companies to use these grants and the reasons why these funds have been underused so far. Fig. 2 and Fig. 3 show the differences within categories of opinions regarding the unwillingness to use grants and funds by participants opinion that application process is too time consuming (Fig. 2) and by their opinion that decision making deadlines are too long (Fig. 3).

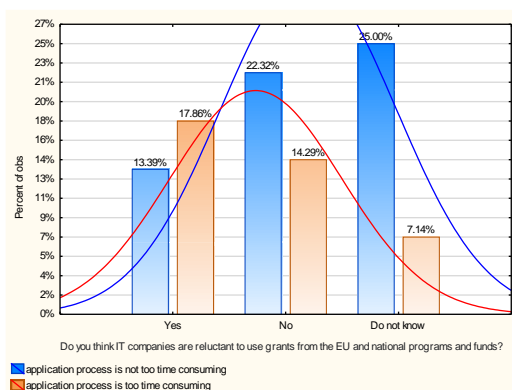


Figure 2. Unwillingness to use grants and funds according to the participants' opinion that the application process is too time consuming.

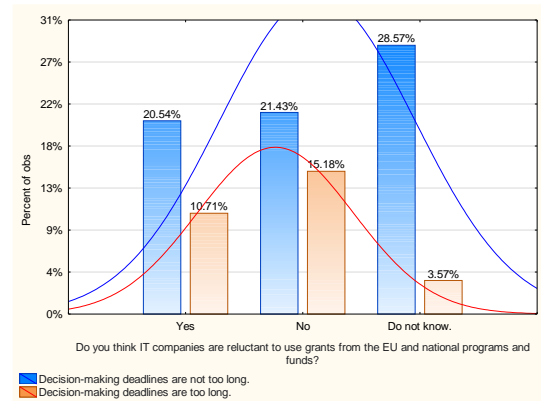


Figure 3. Unwillingness to use grants and funds according to the participants' opinion that the decision-making deadlines are too long

To see if these variables are associated, a chi-square test of association was used. A chi-square test showed that there is a statistically significant association at the level of significance 5% between their impression of reluctance to use grants from EU and national programmes and funds and their opinion that the application process is too time consuming ( $\chi^2(2)=9.08, p=0.01$ ). Also, a chi-square test at the same level of significance 0.05 showed that there is a statistically significant association between their impression of reluctance to use grants and their perspective that the decision process lasts too long ( $\chi^2(2)=9.07, p=0.01$ ).

Additionally, the association between the participant's field of responsibility in the firm and their opinion whether the application process is time consuming was analyzed. Administration as the field of responsibility in the firm at the level of significance 5% also showed a statistically significant association with their opinion that the application process is too time consuming ( $\chi^2(1)=4.19, p=0.04$ ). As seen on Fig. 4, 56.25% of the participants who do not work in administration think that the application process does not take too much time.

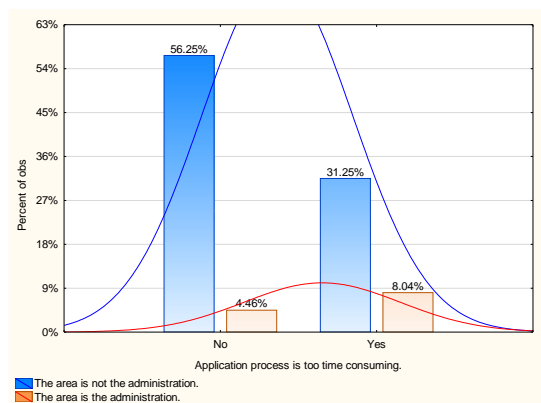


Figure 4. The application process is time consuming according to administration as the field of responsibility.

### IV. DISCUSSION

Contrary to the Walaszczyk and Belina [28] finding, through this research it was found out that the reasons for reluctance of ICT companies to apply for EU funding cannot be found in the share of their own invested funds

or too much bureaucracy. Nevertheless, it is interesting to note that most administrative personnel think that application and implementation requires too much administration (71%) and that the application process takes too much valuable time (64%). This is indicative as administrative personnel is usually involved in the process of project application development. As well, most IT companies which are reluctant to use grants from EU and national programmes also have the opinion that the decision process lasts too long (57%). Both findings were confirmed by association rules. However, the reasons for these attitudes could be that the participants are not too familiar with the application procedures for EU funds and grants, which would be in line with Kiel's finding [20]. By Martinez-Cillero et al. [19] the low level of utilization is a rather serious problem as it is a generator for capital investments and therefore the reasons for this situation should be further investigated.

Although in the last two years a higher activity in opening new calls for funding projects from EU funds can be observed, the arrear of low utilization of available funds by ICT companies from previous years (2014-2018) is so significant that it is difficult to compensate. Therefore, in the following funding period the policy makers will have to give more attention to finding ways how to motivate ICT companies to conduct capital investments using the leverage of EU funds [28].

## V. CONCLUSION

This research revealed that the participants' opinion about the unwillingness of ICT companies to use grants and funds and the reasons why they have been underused so far are associated. It showed that there is an association between the participants' impression of reluctance to use grants and their perspective that the application and decision process lasts too long. However, the reasons for their opinion could be that they are not too familiar with the application procedures for EU funds and grants [20]. We believe that the results of this study give a valuable signal to Croatian policy-makers to conduct changes on an administrative and communication level for the following funding period in order to achieve a higher level of use of available and favorable sources of financing capital investments in the ICT sector.

The limitation of this preliminary research could be found in the limited geographical scope and the size of the sample. Also, the indicators on this topic are usually lagging as the data from current years usually include co-financed projects from last year or the year before. As similar conclusions were found by Kiel [20], it would be useful to extend the geographical area of research to the rest of the European Union member countries. In the next phase of this research, it would be necessary to expand the sample in which large, small and medium-sized companies would be represented in equal proportions. Also, other methods (such as data mining methods) should be used and certainly a financial analysis based on the database of annual financial statements in order to identify trends should be conducted.

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