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Forms and conversions of the economic capital of Croatian entrepreneurs in the computer programming industry with insights into variations of the company's development stages

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Abstract

The paper examines traditional knowledge about the role of financial and physical resources in entrepreneurship. Based on Bourdieu's theory, we search for an answer to the question of which forms of economic capital are used by Croatian entrepreneurs in the computer programming industry and what their value in the context of accessing other forms of capital is. The study is based on a qualitative methodological approach. In-depth interview technique accompanied by unstructured observations was used in data collection. In addition to primary data, research includes the use of qualitative and quantitative secondary data. Research suggests that in the computer programming industry, economic capital is just one tool in the conversion game of entrepreneurial capital. Moreover, the interviewed entrepreneurs attach the least importance to it in business, favoring the value of intangible resources such as specialized knowledge, business connections and personal acquaintances. The company's start-up phase is characterized by the entrepreneur's reliance on personal savings, which is replaced by financing based on retained earnings in the later stages of business. Other forms of growth financing, such as bank loans and recapitalization of external investors, are used by a minority of larger companies, with a good base of symbolic capital. The results on capital conversions indicate relatively easy conversion of economic capital into cultural capital and symbolic capital, and less frequent use of economic capital to create social capital. Fresh insights into the entrepreneurs' perceptions provided by the study expand existing knowledge about entrepreneurship within the computer programming industry, suggesting that it is an industry with huge potential for young talents without a personal financial base that is commonly considered a precondition for entering entrepreneurship.

Keywords: economic capital, capital conversions, entrepreneurship, computer programming industry, Croatia

1. Introduction

Economic capital has traditionally been one of the most critical forms of entrepreneurial assets [1]–[5]. Decomposed of cash and material resources such as buildings, equipment and machinery, it is an integral part of daily business activities and is a basic element of the smooth implementation of the process of production and provision of enterprise services [6]–[8]. In addition to influencing the quantitative and qualitative performance of established organizations [9], having an appropriate level of economic capital is a good predictor of starting a business, potentially facilitating the early stages of building entrepreneurial legitimacy [1], [10]–[13]. As found by Lee *et al.* [14], in the non-absence of financial capital, a "young" high-tech company is able to acquire better employees and invest sufficiently in the development of innovative products and initial marketing activities. It is also able to sneak into more cost-effective niches that are more attractive regarding profit [14], and is able to create a more attractive physical environment that sends signals of "financial health" and facilitates the creation of a business reputation [15], [16].

Understanding the capital of entrepreneurs as a contextually specific set of different tangible and intangible resources [17]–[19], the paper examines traditional knowledge about the role of economic capital in entrepreneurship. With conceptual support in Pierre Bourdieu's theory of capital [6], we search for an answer to the question of the role of economic capital in the business of Croatian entrepreneurs in the field of computer programming. From the perspective of the entrepreneurs themselves, it is deeply researched in which forms and in what way economic capital is engaged in the selected industry and how it is used in the acquisition of other valuable forms of capital. The continuation of the paper provides an overview of the current knowledge on the role of economic capital in the entrepreneurial process on the basis of which research questions are asked. The second part of the paper presents the methodological framework of empirical research and elaborates the main research findings. The paper ends with a conclusion discussing the scientific contribution of research, the implications for practice, and the limitations and recommendations for future studies.

2. The role of economic capital in the entrepreneurial process

The amount of financial capital of an individual (measured by personal wealth and/or personal income) is traditionally considered a good predictor of the decision to start your own business and the company's growth opportunities [1], [10]–[13]. The predefined risk of a new entrepreneurial venture imposes cost and other restrictions on access to formal sources of financing, so for many start-ups, acquiring financial capital through institutions is less attractive compared to a cheaper alternative to investing family savings in business. In addition, having an adequate level of personal physical and financial resources increases the ability to borrow for business purposes, as new entrepreneurs often use their own assets to guarantee the return of business loans. Consequently, individuals with a lack of personal financial and physical capital faced with liquidity constraints are potentially discouraged or disabled in their

intention to take advantage of entrepreneurial opportunities and ultimately do not decide to start their own business [20]. This is confirmed by quantitative empiricism, which generally finds a positive relationship between the likelihood of an individual entering entrepreneurship and growth opportunities, and the financial capital available to him [1], [10]–[13], [21]–[23].

In addition to the above, traditional scientific opus mainly based on the isolated study of economic capital, a somewhat subtler research direction is gradually developing which examines the importance of economic capital relatively, putting its value in relation to other manifestations of capital, and respecting the nature of (industrial and other) context within which the entrepreneur acts. Brush *et al.* [24] were among the first to adopt such an approach examining entrepreneurs' perceptions of the relative value of several different types of resources, with respect to particular stages of a company's life cycle. The authors include physical, financial, human, social and organizational resources in the analysis and conclude that compared to other forms of capital, entrepreneurs, regardless of the age of the company, consider financial resources the least important for business.

The dependence of the relative value of physical and financial capital on the nature of industry is also acknowledged by Kim *et al.* [20], [25], Lam *et al.* [16], Stringfellow and Shaw [26], Pret *et al.* [17] and Vuković *et al.* [19]. For example, Kim *et al*. [25] expectedly notice that financial resources are not necessarily a predictor of the realization of entrepreneurial intent within low-capital intensity industries (such as service and professional) since new entrepreneurs predominantly invest some other forms of capital in such ventures. Their empiricism indicates that most new entrepreneurs do not decide to buy or rent office space but start entrepreneurial activity in their own home, which in turn further reduces the importance of initial business costs. Stringfellow and Shaw [26] also come to similar conclusions in the conceptual discussion of the components of entrepreneurial capital. As they note, the source of company value within industries with low entry barriers related to the necessary financial resources is most often specialized knowledge and reputation of entrepreneurs, and such industries are characterized by weaker influence of economic capital on entrepreneurial performance. Finally, similar is confirmed by Brush *et al.* [27] who discuss the challenge of creating a capital platform in a "nascent" enterprise in the information and communication technology industry. As their study shows, the hotbed of the ICT company's resource base is primarily not money but the intangible personal resource configuration of the future entrepreneur (his expertise, reputation in the industry and acquaintances).

Contemporary approaches to entrepreneurial capital as a mix of entrepreneurs' different, tangible and intangible resources [17]–[19], [28], [29] recognize conceptual appropriateness in the theory of capital by the French philosopher and sociologist Pierre Bourdieu. By economic capital Bourdieu [6] means money and all material resources convertible directly into money, and mentions that labour can be materialized in several forms. He adds social capital (formal and informal networks and acquaintances), cultural capital (education, experience, manners, cultural property in physical form) and symbolic capital (status in the society, prestige, reputation) to economic capital and considers the concept of capital from the perspective of its

conversion nature. According to Bourdieu's theory, namely, every form of capital under certain conditions is subject to transformation into some other resource manifestation [6]. For example, a high level of economic capital can be converted into cultural capital (financial investment in education) [16], [30], [31] and used to acquire social capital (financing the access to elite social networks) [17], [32], just as, for example, cultural capital (rare knowledge and style) can be mobilized for the purpose of acquiring symbolic capital (community reputation) [17], [19]. Starting from the assumption of multiple manifestations of entrepreneurial capital and the conversion nature of capital discussed by Bourdieu [6], this paper seeks to answer the question of which forms of economic capital are important for entrepreneurial activity in the Croatian computer programming industry. The interpretive paradigm [33] and the accompanying qualitative research approach [34] deeply explore the manifestations of economic capital in the chosen industry, the practices of economic capital conversion and its relative value for entrepreneurs. More succinctly, the paper examines the following research questions:

1) What forms of economic capital are used by Croatian entrepreneurs in the computer programming industry?
2) How do Croatian entrepreneurs in the computer programming industry value economic capital compared to other forms of capital?
3) How do Croatian entrepreneurs in the computer programming industry convert economic capital into social, cultural and symbolic capital?

3. Methodology

Consistent with the philosophical starting point based on interpretivism as a research paradigm [33], an empirical study based on a qualitative methodological approach was conducted [34]. An in-depth interview technique accompanied by unstructured observations was used to collect primary data. The participants in the interviews were entrepreneurs whose companies were registered and active in the Republic of Croatia at the time of the research under the main activity J62.0 - Computer programming, consultancy and related activities. The study was conducted as part of a more comprehensive, multi-year research project from September 2015 to March 2019. Interviewing entrepreneurs (predominantly in the form of fieldwork throughout Croatia) was organized in three phases over three years (October 2015 - November 2017). Each phase of interviewing was accompanied by the secondary data collection, and the data analysis procedure (ending in September 2018). The total sample of interview participants included 77 respondents from 70 companies based in Zagreb and 10 counties throughout the Republic of Croatia (the number of companies involved is different from the number of respondents as several interviews were conducted in group interviews with two or three respondents).

The selection of respondents in the sample in the initial phase of the research was based on mixed purposeful sampling [34], so that three respondents from three companies based in Varaždin County were selected according to the criterion of convenience (the researcher knows them and asked them to participate in the research), one respondent from a company from Primorje-Gorski Kotar County and

Virovitica-Podravina County each were selected according to the snowball technique (other respondents suggested them as potential future respondents) while twenty-three companies, i.e. twenty-eight respondents were selected using a random number generator. The researcher's intention was not to form a random sample as used in quantitative research, but to use a random number generator to simplify the choice of entrepreneurs to contact in order to participate in the research, as the researcher previously had no contacts or other resources to select a different selection process. According to Patton [34], the logic of purposeful sampling is completely different from the principle of sample design in quantitative research. Since the intention is not to generalize the results to the population but to examine the phenomenon in depth, the goal of purposeful sampling is to select those units that are information rich cases.

Based on the results of previous research, it was initially assumed that the company's location is a potentially significant criterion for selecting respondents in the purposeful sample. As Spigel states [35], the capital conversions of entrepreneurs are influenced by local fields that are connected to local populations and institutions and are anchored in a specific geographical area. Therefore, the diversity of respondents in terms of local areas in which companies operate can enable the examination of the impact of local and regional processes on the practices of entrepreneurs and contribute to practical implications for the local and regional entrepreneurial policies. Considering the available data on the research population, the location criterion is defined in terms of the regional self-government unit (i.e., county of company headquarters). The counties covered by the research were selected according to the criterion of appropriateness and the criterion of approximate distribution of the number of enterprises from the population by counties. The intention of using these criteria was not to form a statistically representative sample but to cover different local areas with a higher concentration of entrepreneurial activity in the selected industry. As shown in Table 1, the total sample includes regional self-government units in which 84.18% of companies from the defined research population had their headquarters in the year before the beginning of the research (since the study is based on purposeful sampling, statistical data on the share of companies by county are purely informative). The number of entrepreneurs from each county to be included in the sample has not been defined in advance, as it has been estimated that this criterion will not contribute to increasing the degree of variation in the data.

In the later stages of the research the respondents were selected on the basis of theoretical sampling [34], [36]. Based on the results of the initial phase of the research desirable characteristics of future respondents and their companies were identified. For example, one of the identified variations in existing data relates to the practice of acquiring economic capital using bank loans. This practice was identified in only one company, and thus represented a variation in the data (the category of economic capital was not saturated and required further examination). Based on the other characteristics of the company in question, it was assumed that the mentioned practice of acquiring economic capital is a consequence of the need to finance extremely high revenue growth rates of that company. Therefore, in the further phase of the research,

other companies that achieve very high growth rates measured by the growth of operating revenues were included in the added sample.

All interviews were conducted in person (face-to-face) predominantly in the business premises of the company or a nearby cafe. The average duration of one interview was 66 minutes. Prior to the interview, each respondent was provided with a statement on the anonymity and confidentiality of the data collected during the interview, and a request was made for an audio recording of the interview. Observations during the interviews were made according to the principle of unstructured observation [37] and included the collection of data on the appearance of the entrepreneur and their business premises and the physical location of the company.

Regional self-government unit	Share of enterprises from the county in the population in 2014[1]	Number of respondents / companies in the research	Share of enterprises in the research
City of Zagreb	53.36%	37 / 33	47.14%
Primorje-Gorski kotar County	6.51%	11 / 9	12.86%
Split-Dalmatia County	6.82%	6 / 6	8.57%
Osijek-Baranja County	3.43%	6 / 5	7.14%
Istria County	4.26%	4 / 4	5.71%
Varaždin County	3.67%	4 / 4	5.71%
Međimurje County	2.42%	3 / 3	4.29%
Koprivnica-Križevci County	0.83%	3 / 3	4.29%
Karlovac County	1.42%	1 / 1	1.43%
Zadar County	1.11%	1 / 1	1.43%
Virovitica- Podravina County	0.35%	1 / 1	1.43%
TOTAL	**84.18%**	**77 / 70**	**100.00%**

Table 1. Share of enterprises by counties in the population and in the conducted research

Table 2 shows the basic data on the companies involved and the demographic data on the interview participants. Regarding the number of employees, 46 companies (or 65.72%) included in the research had less than ten workers, 22 companies (or 31.42%) employed between 10 and 49 people, while only two companies (2.86%) had 50 or more employees. To consider data on the number of employees, as well as other indicators of company size, it can be concluded that the research sample refers exclusively to micro, small, and medium-sized enterprises (SMEs). Such a structure

[1] The shares of enterprises by counties in the research population were calculated on the basis of data from the Financial Agency of the Republic of Croatia [38]. The data refer to the year 2014 since the study was conducted as part of a multi-year research project which began in 2015.

is not surprising since only 2 companies (or 0.06%) in the computer programming industry in Croatia in 2015 belonged to the category of large companies (there were 31 (or 1.00%) medium-sized enterprises, 266 (or 8.58%) small enterprises, and 2,802 (or 90.36%) micro enterprises) [38].

At the time of the research, the business entities were in different stages of their life cycle. More precisely, out of a total of 70 business entities, 17 (or 24.28%) were 20 or more years old, 17 (or 24.28%) were between 10 and 19 years old, while 36 companies (or 51.44%) started business less than 10 years ago. Additionally, the sample includes 9 business entities that had been operating for less than 42 months (new entrepreneurs), and the average age of all companies included in the sample is 11 years. Likewise, in some cases, business activity started earlier than the year of company registration, which refers to entrepreneurs who previously had a craft or unregistered entrepreneurial activity. The fact is incorporated in the interpretation of the results since the respondents' earlier involvement in entrepreneurship implied a previously accumulated resource base.

Characteristics of the companies		**Percentage / number**
Company's age	Less than 10	51.44% / 36
	10 - 19	24.28% / 17
	20 or more	24.28% / 17
Number of employees	0 - 1	14.29% / 10
	2 - 9	51.43% / 36
	10 - 19	15.71% / 11
	20 - 49	15.71% / 11
	50 or more	2.86% / 2
Characteristics of the participants		**Percentage / number**
Gender	Women	9.09% / 7
	Men	90.91% / 70
Participants' age	Less than 35	27.27% / 21
	35 - 40	18.18% / 14
	41 - 50	25.97% / 20
	51 - 60	15.59% / 12
	More than 60	7.80% / 6
	No data	5.19% / 4
Level of education	High school	14.29% / 11
	Bachelor's and master's degree	81.82% / 63
	Doctorate	3.89% / 3

Table 2. Data on companies and interview participants

Regarding the gender structure of interview participants, men predominate among the interviewees (70 or 90.91% men versus 7 or 9.09% women). Moreover, 6 out of 7 women who participated in the research share the function of ownership and/or

management of the company with a male person, whether the man is exclusively a business partner (3 female entrepreneurs) or the husband of the research participant (3 female entrepreneurs). The significant underrepresentation of women in the sample is not surprising given the small share of women in the ICT industry workforce [39], and ICT entrepreneurship [40], [41]. According to the Global Entrepreneurship Monitor, women entrepreneurs are much less likely to be involved in ICT startups than men (according to recent data, in 2021 the global ratio is 2.7% women vs. 4.7% men, while the gap for Croatia is even more pronounced (3.7% women vs. 9.8% men)) [41]. This large gender gap is persistent and was also present during the period of conducting the research [40].

The most represented age group in the sample is entrepreneurs younger than 35 (21 or 27.27%), followed by 20 respondents (or 25.97%) between the ages of 41 and 50. The smallest age group of respondents was over 60 years old (6 or 7.80%). The youngest respondents in the sample were aged 30, and the oldest respondent was 72. The average age of the respondents expressed by the arithmetic mean is 43, while the median is 42. Regarding the level and type of education of the interview participants, most of them graduated from university (81.82%). The exception is eleven respondents (or 14.29%) with high school education. Nine of them were included in the higher education system but left the college before graduation, which is related to work and/or starting a company during their studies. It should also be added that two interviewees have the title of Master of Science, three are PhDs, and one interviewee was involved in the educational process of a post-graduate doctoral study at the time of the interview. The formal education of the majority of respondents is related to technical sciences (electrical engineering, mechanical engineering) or social sciences (information sciences, economics). The majority of respondents graduated from the Faculty of Electrical Engineering and Computing in Zagreb, followed by the Faculty of Economics in Zagreb and the Faculty of Organization and Informatics in Varaždin.

In addition to primary data, research empiricism includes qualitative and quantitative secondary data. Quantitative secondary data refer to data from the financial statements of entrepreneurs included in the research. The analysis includes positions of assets, operating revenue and net profit /loss from the financial statements of the company initially for the period from 2007 to 2015 (obtained from the database of the Financial Agency of the Republic of Croatia and the Court Register of the Republic of Croatia). To deepen the picture of the economic capital of companies during and after the period of primary data collection, quantitative secondary data from the company's financial statements was subsequently collected also for the period from 2016 to 2021. The analysis of quantitative secondary data identified the amount of assets and the amount, intensity and direction of the movement of operating revenue and profit/loss of the company during the observed period (2007-2021). The obtained data were used to support primary data in drawing conclusions about the role of tangible assets in business, (own) sources of financing and financial self-sufficiency of the company. Also, the financial data served as a support in identifying the relations between individual practices of conversion of economic capital and financial strength of the company.

The qualitative data collected from secondary sources include all information about the entrepreneur and the company that was available on the Internet at the time of the search by typing the following keyword combinations into Google: "name surname of the entrepreneur company name". The search was conducted for each respondent and company immediately after the interview, and some of the data collected in this way include data on the appearance, content and up-to-dateness of the company's website, data on awards and accolades received, and data related to negative news about entrepreneur/company in the media.

Data analysis was based on the application of techniques characteristic of the constructivist grounded theory [42]. Accordingly, initial, focused and axial coding was performed on the empirical data, followed by the application of the constant comparison method. The analysis was preceded by the completion of transcripts of interviews, followed by repeated reading of empirical material and initial coding. It is a process by which interview segments are assigned codes that represent the meaning of a group of data. Thousands of source codes were identified in this phase, after which we moved on to the next coding phase. Focused coding referred to the identification of significant codes and their grouping into more abstract particles, the so-called categories. In the last phase, axial coding determined the relationships between data and previously defined categories [43]. The entire coding process was performed manually. Due to that, it was a very time-consuming and exhausting process. Although computer programs can speed up and simplify the lengthy process of multiple reading, constant comparison, and cross-checking of data, relying solely on computer analysis impoverishes rich qualitative material and creates some form of methodological anomie [44].

To provide insights into the relations between the form of capital and the capital conversions with the characteristics of companies and entrepreneurs, the qualitative analysis was supplemented by statistical indicators. More precisely, the correlations between the characteristics of companies (company's age, number of employees) and the characteristics of entrepreneurs (gender, participant's age, level of education), and the frequencies of codes related to certain forms of economic capital and capital conversion were calculated. Since the data on code frequencies was measured on an ordinal scale, Spearman's correlation coefficient was used [45]. The results of the analysis are presented in Appendix A, and the interpretations of the results are included in the corresponding segments within Section 4.

4. Results

4.1. Forms and relative value of economic capital

The structure and value of economic capital of entrepreneurs are recognized by examining the source of financial capital invested in starting a business and financing further business, analysing the level and dynamics and direction of business revenue and profit or loss and identifying physical capital owned by companies [17], [31]. Table 3 shows quantitative data on the absolute and relative representation of certain

forms of economic capital among the interviewed entrepreneurs and data on the frequency of the associated codes. The data from the table were obtained by counting the number of entrepreneurs from the sample who use particular identified form of economic capital in business. Frequencies were calculated by counting codes related to a particular form of economic capital obtained by interview analysis.

Form of economic capital	Number of entrepreneurs (N=70)	Share of entrepreneurs	Frequency of associated codes
Financial capital to start a business			
– savings of entrepreneurs	61	87.14%	61
– loans from family and friends	11	15.71%	11
– bank loans	6	8.57%	6
Financial capital to support growth and survival			
– operating profit	65	92.86%	104
– bank loans and leasing	15	21.43%	15
– recapitalization of external investors	9	12.86%	12
Physical capital			
– computer and other equipment (interviews)	20	28.57%	32
– computer and other equipment (other sources)	65	92.86%	-
– business space (owned)	9	12.86%	-

Table 3. Forms of economic capital among interviewed entrepreneurs

When it comes to the impact of economic capital on the birth of entrepreneurial intent and financing start-ups, although valuable, for most entrepreneurs it is not a scarce resource. This is a result of the nature of the industry related to the low level of capital intensity [46], [47] which reduces the initial financial requirements to the legally defined amount of share capital and relatively modest initial investment in computers and other equipment. Therefore, in the early stages of business, the predominant source of economic capital of our respondents (87.14% of them) are their own funds in the form of personal savings. Formal third-party sources were used by only six entrepreneurs to finance the start-up, while only eleven of them (or 15.71%) engaged connecting social capital [48] embodied in "strong", parental and kinship ties:

> *That initial capital practically, like… I came to my parents, told them to lend me those, as much as it was, cca 1000 euros. … After that I practically did all the rest myself… with those initial 1000 euros I moved on.* (Bruno, 34, Pula)[2]

In addition to social capital engagement, some actors have found a way to overcome the liability of newness [49] in the beginning of entrepreneurship in the

[2] In order to protect the anonymity of the respondents, the real names of persons and the names of companies and institutions have been replaced by pseudonyms.

form of unregistered activity, in the form of a freelancer or by establishing a more financially favourable legal framework. Thus, Leon (33, Čakovec) overcame the financial requirements of the early stages of business much easier, since he had previously acquired some economic capital by moonlighting, while Nada (43, Zagreb) entered formal entrepreneurship with partners by founding a company after five years in business.

Although relatively scarce, economic capital is a valuable resource in the early stages of business, especially from the perspective of the fact that combating the liability of newness in some cases (more precisely for 14.29% of entrepreneurs) involved sacrificing entrepreneurs' personal income in order to maintain financial stability. Commitment to entrepreneurship, at the cost of personal financial gain, is beautifully illustrated by the statement of Anita (30), an ambitious young entrepreneur, co-owner and director of a young fast-growing company from Zagreb:

> *Now I will be completely honest… So,… I sacrificed my finances for Softmax. So, it was a much lower salary than I used to have or that I could have if I went somewhere to work, especially abroad… but it didn't* [discourage] *me… I never had a problem with it because I knew why I was doing it…* (Anita, 30, Zagreb)

In addition to not being a barrier to starting a business, economic capital is a predominantly scarce form of capital in the later stages of the life cycle of an entrepreneurial venture. Namely, a large number of companies (more precisely, 68.57%) quickly reached the level of financial self-sufficiency, securing a position in which the realized profit is used as the only source of capital for the maintenance and growth of business. This was due to the practice of concluding long-term contracts with clients which was identified for 90.00% of actors, and, of course, doing business in more financially generous foreign markets (which is practiced by 54.29% of companies). As indicated by the correlation data in Appendix A, the latter practice is potentially characteristic of younger entrepreneurs (ρ=–0.611, $p<0.01$), younger companies (ρ=–0.386, $p<0.01$), and as expected, the one with a larger number of employees (ρ=0.252, $p<0.05$).

The financial stability and growth of most of the companies included in the research are confirmed by descriptive indicators of data from the financial statements. As suggested by the data in Table 4, more than half of the companies observed from one to the other accounting period recorded an increase in operating revenue, which in many cases exceeded 10%. It is also important to point out that in all the years included in the analysis, about 80-90% of companies were operating with a positive financial result.

The "peak" of the share of companies with profit in 2018 and 2019 and a decline in 2020 and 2021 potentially indicate the negative impact of the COVID-19 crisis on the economic capital of some of the observed companies. The primary data of the study refer to the pre-crisis period and do not allow reliable estimates. However, descriptive statistical findings by Konecki *et al.* [53] based on the data set of 2,069 companies suggest that the profitability of the industry was generally not affected negatively by the crisis, but quite the opposite (in 2020 and 2021 the sector shows an increase in ROA, ROE, and EBITDA margin).

Year	Operating revenue (in HRK)			
	Min	**Max**	**Median**	**Arithmetic mean**
2007	23,168	9,429,808	1,087,005	1,723,639
2008	23,150	9,076,656	1,164,457	1,565,418
2009	0	8,050,310	1,076,864	1,477,609
2010	21,795	8,118,121	1,018,352	1,507,150
2011	33,077	9,894,353	1,003,224	1,767,736
2012	0	12,796,033	1,021,121	1,838,054
2013	21,110	12,833,993	958,141	1,889,891
2014	0	22,992,372	1,156,973	2,332,567
2015	2,200	47,639,748	1,270,074	3,078,581
2016	3,497	55,633,153	1,251,734	3,542,194
2017	3,200	50,669,941	1,739,058	3,985,595
2018	14,441	135,389,127	1,736,096	6,246,226
2019	1,428	196,437,080	1,888,315	7,857,207
2020	230	398,265,987	2,533,666	12,165,830
2021	1,000	300,932,790	3,049,174	11,436,674
Year	**Standard deviation (oper. rev. in HRK)**	**Share of comp. with rev. growth[3]**	**Share of comp. with rev. growth of more than 10%**	**Share of comp. with profit**
2007	2,007,217	-	-	81.82%
2008	1,877,889	57.89%	52.63%	86.84%
2009	1,708,112	51.16%	46.51%	83.72%
2010	1,700,712	52.08%	41.67%	85.42%
2011	2,130,394	52.94%	45.10%	84.31%
2012	2,502,306	58.93%	37.50%	87.50%
2013	2,413,570	66.15%	50.77%	92.31%
2014	3,655,007	59.42%	47.83%	92.75%
2015	6,382,184	71.43%	60.00%	91.43%
2016	7,481,084	57.14%	34.29%	85.71%
2017	7,590,426	57.35%	42.65%	89.71%
2018	17,715,518	60.00%	50.77%	95.38%
2019	25,470,802	60.94%	46.88%	95.31%
2020	51,249,653	59.38%	42.19%	84.38%
2021	40,095,842	53.23%	40.32%	83.87%

Table 4. Descriptive indicators of financial statements data of companies included in the research (Source: Own calculations according to the data of the Financial Agency and the Court Register of the Republic of Croatia [38], [50]–[52])

[3] Revenue growth was determined compared to the previous accounting period included in the analysis.

This is one of the industries characterized by great heterogeneity of companies regarding the nature of products and services, and the character of markets, implying potential differences in the impact and direction of the impact of the COVID-19 crisis on the financial results of different companies. Anyway, the issue is an interesting ground for future, quantitative and longitudinal studies of the computer programming industry in Croatia.

Given the financial self-sufficiency of most entrepreneurs, formal foreign sources of financing are a rare instrument for obtaining economic capital, not only in starting a business but also in financing its survival and growth. Moreover, a large number of surveyed entrepreneurs show an aversion to the risk of borrowing, which, according to Ante (34) from Split, can be stimulated only by specific financial requirements in business:

> *Own resources, yes… exclusively* [we used our own funds to finance business]*, in fact, it's kind of something I believe in…it is actually the best way to do something because first it's a matter of responsibility and everything that is done, which is still greatest if you work with your own money, and I don't like loans, so in fact, there really should be some specific situation that would have to be financed in such a way...* (Ante, 34, Split)

Despite the propensity for self-financing and the enviable financial strength accumulated so far in business activities, for several (fast) growing entrepreneurs it still does not provide a sufficient financial injection to the business. One of the few such examples is a fast-growing company run by Ivan (40-50) from Varaždin, which finds support for extreme growth in bank capital. For this company, bank credit is a very common financing mechanism and is easily accessible thanks to the symbolic capital in the form of a positive reputation with banks based on the strength and "financial health" of the company. In addition to bank loans, this entrepreneur (and several other growing companies) does not refrain from frequent recapitalizations by strong foreign investors, who, by investing economic capital, strengthen the company's symbolic capital and make it easier for entrepreneurs to penetrate new markets. In addition to this entrepreneur, access to financial capital in the form of recapitalizations of external investors or business angels was found in several other companies (12.86% on the level of the entire research). These are entrepreneurs who have attracted investors thanks to a software product that represents an influential innovation or those who decided to start a new, attractive niche by founding a spin-off company and found an investment partner thanks to the company's existing legitimacy. The data on statistically significant correlations from Appendix A confirm that financing through investors' recapitalizations is potentially used by larger companies (measured by the number of employees), characterized by higher revenues and profits, as well as a higher level of symbolic capital.

No respondents reported funding through other alternative sources, such as venture capital and crowdfunding. It can be assumed that this is a consequence of the still weaker availability of risk capital in Croatia [54] and the potential reluctance of ICT entrepreneurs to crowdfunding [55]. It should also be noted that as many as 40 companies in the sample offer software as a service and/or other related services on

behalf of the client, so they have no financial needs related to product development or market testing, which are common motives for crowdfunding [56].

Like financial capital, the material form of economic capital in most enterprises does not belong to the category of VRIN resources [57]. Namely, compared to other industries, the equipment is easily available and does not involve a significant financial investment, and the same is true for business premises, which almost 90% of entrepreneurs provide by rent. The burden of investing in physical assets is recognized by only three entrepreneurs, primarily as a result of the company's current financial difficulties or financial instability in the earlier stages of business. As expected, the size of physical capital has a significant positive correlation with the number of company employees, since larger companies require higher investments in different forms of business equipment ($\rho=0.387$, $p<0.01$).

The relations between the form of economic capital and the demographic characteristics of entrepreneurs (gender, participant's age, level of education) cannot be identified by the findings of the study. The corresponding correlation coefficients in Appendix A are mostly statistically insignificant or significant but suggest only a slight correlation ($\rho<0.250$). The exceptions are the data on the significant negative correlation between the participant's age and operations on foreign markets ($\rho=-0.611$, $p<0.01$), as well as the amount of the company's profit ($\rho=-0.273$, $p<0.05$). Accordingly, younger entrepreneurs, compared to older ones, are potentially more inclined to expand their business to foreign markets, which results in better financial results for the company. Nevertheless, the assumptions need to be confirmed by quantitative research based on inferential statistics.

Valuing it relatively, in relation to other resource manifestations, most entrepreneurs (61.43% of them) consider economic capital to be the least significant in business (Table 5). As illustrated by Andrija (30) from Virovitica, this is the result of the already mentioned small entry barriers regarding financial capital, and generally low levels of capital intensity of industry:

> *I would put finances only in the third place, because when a company grows… it is not finances that are crucial, but that people should believe… those who come to the company… that they come not only for money but because they believe that there is a way for them in that company…the finances are honestly the least necessary for us because we are not buying machines worth € 100,000 to expand our business…*(Andrija, 30, Virovitica)

Table 5 shows quantitative data on the absolute and relative representation of certain combinations of ranking of forms of capital among the interviewed entrepreneurs. The data from the table were obtained by counting companies, i.e. entrepreneurs who in the interview opted for a certain combination of ranking of certain forms of capital.

To sum up, regarding the forms of economic capital that lead us to the answer to the first research question from Section 2, the results suggest that the company's start-up phase is characterized by the entrepreneur's reliance on personal savings and, more rarely, loans from family and friends, which is replaced by financing based on retained earnings in the later stages of business.

Entrepreneur's response	Number of entrepreneurs (N=70)	Share of entrepreneurs
– cultural, social, economic capital	26	37.14%
– social, cultural, economic capital	17	24.29%
– economic, social, cultural capital	5	7.14%
– social, economic, cultural capital	4	5.71%
– economic, cultural, social capital	1	1.43%
– cultural, economic, social capital	1	1.43%
– other responses	16	22.86%
Total	70	100.00%

Table 5. Ranking of forms of capital according to their role in business

Other forms of growth financing, such as bank loans and recapitalization of external investors, are used by a minority of larger companies, with a good base of symbolic capital. Larger companies also invest more in business premises and equipment as a physical form of economic capital. When it comes to the second research question, the findings show that economic capital, compared to social capital and cultural capital, is the least valuable form of capital. Preference in the industry is given to intangible forms of capital such as specialized knowledge, business connections and personal acquaintances of entrepreneurs.

4.2. Conversions of economic capital into other types of capital

An examination of the conversion nature of economic capital revealed that it is subject to conversion into all three remaining forms of capital, being most easily converted into cultural resources and then symbolic ones, while being seldom engaged in acquiring social resources.

Table 6 shows examples of identifying capital conversions from excerpts from interviews with respondents. The table review demonstrates the logic of qualitative data analysis that follows the analytical procedures used in previous research on capital conversions in entrepreneurship (for example, see the demonstration of identifying capital conversions in research by Pret *et al.* [17] and Hill [28]).

When it comes to transforming economic into symbolic capital, they are mainly related to building a reputation through financial investments in marketing, participation in humanitarian actions, sponsorship of events, financing of new, promising start-ups and other investment activities in the symbolic identification of entrepreneurs and companies. These practices are characteristic of the largest and most financially powerful companies and are in the function of strengthening entrepreneurial legitimacy in the eyes of different categories of constituents (clients, business partners, potential employees, media). This finding is supported by the identification of the relations between entrepreneurial practices and the financial strength of the company determined on the basis of data from the financial statements.

Conversions of economic into symbolic capital are also reflected in the form of waiving companies' financial gains in order to create or maintain the trust of existing customers. It is about providing free first services to new clients, suffering financial losses due to an incident on the project or delaying the collection of services from clients who are in financial difficulties. In contrast to the previously stated practice, this practice is characteristic of companies regardless of their size and financial strength, and is especially popular among new entrepreneurs. For them, it is a kind of mechanism to dampen the liability of newness [49], a strategy by which newcomers work hard to build the trust of their first clients, gradually creating outlines of moral legitimacy in the marketplace [58], [59]. This process reflects the experience of Zoran, the owner of a micro company from Zagreb, which gradually gained the trust of foreign clients through the practice of free first services:

> *... Let's say we managed to gain that trust from these kind of companies, as these external ones are called, where we offered them to make them something for free for the first time. So it means totally for free, as it is called, and they also hesitated here and there, and in principle, when we did it once, then it* [started] *for you...* (Zoran, 45, Zagreb)

In addition to easy conversion into symbolic resources, economic capital is convertible into all manifestations of cultural capital. This is reflected in the investment of entrepreneurs in further formal education and certification (cultural capital in the institutionalized state), investment in non-formal forms of education (cultural capital in the embodied state) and financing the arrangement of business premises (cultural capital in the objectified state) [6]. Among them, the most popular is the latter conversion, typical of (fast)growing companies (17.14% of them) that arrange business premises in the mission of producing symbolic resources–reputation in the market and the industry [60], a kind of symbolic advantage in the fight for scarce labour force. The data in Appendix A confirm that the practice of converting economic capital into cultural capital in the objectified state, to create symbolic capital, is characteristic of larger enterprises ($\rho=0.386$, $p<0.01$). Additionally, significant negative correlations of this entrepreneurial practice with the company's age ($\rho=-0.375$, $p<0.01$) and the entrepreneur's age ($\rho=-0.494$, $p<0.01$) were found. It seems that younger entrepreneurs and larger companies have a higher level of symbolic capital in the form of exposure in the media, local recognition, and reputation in the industry, which is potentially the result of the engagement of economic capital.

Table 7 shows quantitative data on the absolute and relative representation of economic capital conversions among the interviewed entrepreneurs and data on the frequency of the associated codes. The data in the table were obtained by counting the companies or entrepreneurs with whom a certain conversion of economic capital was found. Frequencies were calculated by counting the codes from the interviews related to each conversion of economic capital.

Economic capital conversions - illustrative excerpts from interviews		
Social capital	**Cultural capital**	**Symbolic capital**
We were [members of associations]*, but we stopped it a month ago… because some membership fees had to be paid so I concluded… given in which direction the company is going, it is better to stop '… than… wherever you join, you have to pay for something, so we concluded that we don't want it anymore … we paid a lot somehow … we are members of the Oracle group, we paid some money there, and that's where it went the most, right … that's how I stopped it…* (Božo, 65, Split)	*What should I say, we had to give 80,000 kuna to be able to certify the product, you have to earn this 80,000 kuna, and these certificates could be given for free, but still, at a marketing show, it says that I have a certificate, when you act like that, then it's much better than when you don't have it. (*Zoran, 45, Zagreb)	*… Well, one* [should] *be present to some, some level in society and with some ideas and advice support some other entrepreneurial stories. Maybe even financing… companies… now it's maybe… even a matter of social responsibility, but it's hard to say 'what social responsibility is and what purposeful propaganda. I mean… through these* [activities] *we also get quality people from the faculty… so it's a combination of both, a kind of symbiosis… isn't it?* (Robert, 30, Zagreb)
If your hour costs more, it means you will be able to go to foreign conferences. If you go to foreign conferences, you will meet new people … (Bruno, 34, Pula)	*…Now we have reserves and some funds that we will try to invest* [in business premises]*… to be, like, top. …or a little better and to leave that good impression, and so that… the employees are comfortable and proud to be working here.* (Josip, 36, Osijek)	*… if there is an incident on the project, and that is not uncommon, or something is done that may not be right or we make a mistake, in these situations we take everything on ourselves, even at the cost of loss… to initially gain some trust and start seriously working...* (Dušan, 36, Zagreb)

Table 6. Examples of identification of economic capital conversions

Conversions of economic capital into social capital have been observed among 5.71% of entrepreneurs, and are mainly related to the payment of membership in formal associations and the financing of participation in conferences and related events. Given the importance that respondents attach to them and the amount of financial resources involved, they do not have a crucial role in business. Moreover, social resources that require the investment of economic capital are forms of capital that entrepreneurs can easily give up in case of financial difficulties and the need to rationalize costs. This is especially true for start-ups and micro-enterprises, for which the most valuable social capital is acquired through informal networking within an industry that does not require a direct outflow of economic capital.

Economic capital conversions	Number of entrepreneurs (N=70)	Share of entrepreneurs	Frequency of associated codes
Social capital			
- payment of membership in associations	3	4.29%	3
- financing of conferences	1	1.43%	1
Total	4	5.71%	4
Cultural capital			
- investments in business premises	12	17.14%	13
- investing in education and training	10	14.29%	11
- financing of certificates	1	1.43%	1
Total	21	30.00%	25
Symbolic capital			
- investing in marketing activities	8	11.43%	9
- waiver of financial gains in order to maintain customer confidence	7	10.00%	8
- investments in philanthropy and social responsibility	3	4.29%	3
Total	15	21.43%	21

Table 7. Data on economic capital conversions among interviewed entrepreneurs

Finally, it should be added that the results do not confirm related findings regarding the relations between local business environments and entrepreneurial practices [35]. The forms and conversions of economic capital could not be brought into relation with specific local fields. The potential justification of such results should be sought in the fact that Croatia is a smaller, and thus more homogeneous, national context compared to the national environment of the previous study conducted in Canada [35]. For this reason, variations in local practices in this case do not exist or are so small that they cannot be identified.

Summarizing the answer to the third research question, it is concluded that the industry is characterized by relatively easy conversion of economic capital into cultural capital and symbolic capital, and less frequent use of economic capital to create social capital. The most popular engagement of economic capital refers to financing the arrangement of business premises (production of cultural capital in the objectified state). The practice is potentially specific to larger and younger companies that are led by younger entrepreneurs, who use economic capital and cultural capital

to create symbolic capital. Somewhat more prevalent capital conversions are also investments in education and training (accumulation of cultural capital in the embodied state), and investments in marketing to create symbolic capital.

5. Discussion and conclusion

The insight into the relational nature of capital provided by our research indicates that in the computer programming industry, economic capital is only one tool in the conversion game of entrepreneurial capital. Moreover, the interviewed entrepreneurs attach the least importance to it in business, favouring the value of intangible resources such as specialized knowledge, business connections and personal acquaintances. Our findings are consistent with the empirical findings of Greene *et al.* [61], Brush *et al.* [27] and Lam *et al.* [16] and more recent research by Pret *et al.* [17] and Vuković *et al.* [19], pointing out that physical and financial resources are not dominant in all forms of entrepreneurship and their relative value is conditioned by the characteristics of the industry and the size of the enterprise. In low capital intensity sectors, such as computer programming or cultural industries, the skill in creating economic value of new and small entrepreneurs is not primarily driven by the level of personal and business financial capital but by the ability to mobilize specific social and cultural resources. Only in larger companies does the accumulated economic capital become a significant pool of symbolic capital as financial investments in marketing activities and tangible cultural assets (for example, elite business premises) contribute to strengthening the reputation and attracting a better workforce. Weak representation of economic capital investment in formal social capital (membership in associations) and institutionalized cultural capital (certification) is also evident and suggests their lower value in industry compared to informally created social networks and knowledge accumulated through independent learning and experience.

When it comes to sources of financing for companies, the results show that these are mostly traditional methods, primarily informal ones. The causes of the underrepresentation of modern funding mechanisms such as crowdfunding, although they can be assumed [55], [56], are an open question for future research. Also, it would be interesting to examine the impact of the aversion to the risk of indebtedness of these entrepreneurs on the possibility of taking advantage of new business opportunities in the industry.

The topic of the paper is important as it expands saturated approaches based on isolated research of financial, and possibly social and human capital in entrepreneurship. This research, in addition to being one of the few studies conducted among entrepreneurs in the field of computer programming in Croatia, is important because it contributes to the recent and still modest work that approaches entrepreneurs' capital from the perspective of resource dynamics in entrepreneurship [17], [28]. Further development of knowledge in the narrower field would be facilitated by expanding research with a comprehensive quantitative analysis of the relationship between sources of financing, forms of economic capital and capital conversion practices, and company characteristics (number of employees, revenue and profits, subsectors, market and others) as well as demographic and other

characteristics of entrepreneurs. Research findings of this type, based on a representative sample and inferential statistics, produce more precise conclusions regarding the structure and characteristics of economic capital with regard to the characteristics of entrepreneurs and enterprises, and by extending the study to other activities they provide the possibility of sectoral comparisons.

The study presented in the paper provides several relevant contributions to the theory of entrepreneurship. The research provides a systematic overview of existing knowledge about the role of economic capital in entrepreneurship and expands it with empirical findings for a specific, hitherto unexplored context. Fresh insights into the practices and perceptions of Croatian entrepreneurs expand existing knowledge about entrepreneurship within the computer programming industry, suggesting that it is an industry with huge potential for entrepreneurial young talents without a personal financial base that is commonly considered a precondition for entering entrepreneurship. Therefore, future research on entrepreneurial capital in knowledge-based industries should emphasize the role of social, cultural and symbolic resources of entrepreneurs, their relational nature, as well as changes in the value of individual forms of capital as companies progress through development stages. In addition to new empirical insights, the contribution of the study is also given in the conceptual framework which is characterized by the rich Bourdieu theory as an excellent tool for defining different forms of capital and analysing the use and management of resources in entrepreneurship [17].

When it comes to the implications for entrepreneurial practice, the research suggests that the lack of certain personal resources (especially economic capital) in this industry is not a reason to be discouraged from starting a business, especially if they are individuals with a broad informal social network and rich knowledge and experience. The education system also has a role in strengthening entrepreneurial self-efficiency, with the task of pointing out to ICT students the benefits of entrepreneurship as a profession and teaching about alternative ways to use and influence economic, cultural, social and symbolic capital for business management and development [17]. Finally, it is also the responsibility of entrepreneurship policy makers to complement traditional and universal measures of financial support for entrepreneurship with support in accessing intangible forms of capital.

The fundamental limitation of the research stems from the fact that empirical results relate to a specific industry within a national environment and should not be generalized outside the research context [62]. In addition to examining the results in the new contextual conditions, it is desirable that future research be of a longitudinal type, which would contribute to creating a clearer picture of the role of each form of capital given the size of the company and life cycle stage. Moreover, this research was conducted from 2015 to 2019 (with the addition of financial data for 2020 and 2021), and the results do not provide empirically-based insights into the reflection of new circumstances on the observed industry (more precisely, the impact of the COVID-19 crisis on the economic capital of entrepreneurs). Collecting more recent data would bring a fresher understanding of the research issue. Finally, related research conducted within different national environments would provide comparisons of findings for

countries where the activity of computer programming is at different stages of development, which would expand knowledge about the industry.

Appendix A

	Characteristics of the companies		Characteristics of the participants		
	Company's age	Number of employees	Gender	Participant's age	Level of education
Financial capital to start a business					
– savings of entrepreneurs	0.054 n.sig.	0.095 n.sig.	0.187 n.sig.	0.092 n.sig.	0.094 n.sig.
– loans from family and friends	0.056 n.sig.	-0.030 n.sig.	-0.008 n.sig.	0.046 n.sig.	-0.158 n.sig.
– bank loans	0.152 n.sig.	0.020 n.sig.	0.094 n.sig.	0.210*	0.087 n.sig.
Financial capital to support growth and survival					
– operating profit	-0.033 n.sig.	0.422***	0.133 n.sig.	-0.229*	-0.019 n.sig.
– bank loans and leasing	0.147 n.sig.	0.215*	-0.089 n.sig.	0.073 n.sig.	-0.017 n.sig.
– recapitalization of external investors	-0.090 n.sig.	0.243**	-0.183 n.sig.	-0,163 n.sig.	-0.003 n.sig.
Physical capital					
– computer and other equipment (interviews)	0.021 n.sig.	0.127 n.sig.	-0.124 n.sig.	-0.081 n.sig.	-0.272**
– computer and other equipment (other sources)	0.235 n.sig.	0.387***	-0.085 n.sig.	0.057 n.sig.	0.053 n.sig.
Doing business on foreign markets	-0.386***	0.252**	-0.076 n.sig.	-0.611***	-0.237**
Operating revenue (2015)	0.203*	0.752***	-0.071 n.sig.	-0.120 n.sig.	-0.001 n.sig.
Profit/Loss (2015)	-0.008 n.sig.	0.342***	0.058 n.sig.	-0.273**	-0.015 n.sig.
Conversions of economic capital into social capital (total)	0.072 n.sig.	-0.087 n.sig.	0.075 n.sig.	0.114 n.sig.	-0.077 n.sig.
Conversions of economic capital into cultural capital (total)	-0.037 n.sig.	0.255**	0.092 n.sig.	-0.147 n.sig.	0.083 n.sig.
Conversions of economic capital into symbolic capital (total)	-0.072 n.sig.	0.120 n.sig.	0.019 n.sig.	-0.127 n.sig.	0.020 n.sig.
Conversions of economic capital into objectified cultural capital and symbolic capital	-0.375***	0.386***	0.045 n.sig.	-0.494***	-0.169 n.sig.
Social capital (total)	-0.207*	0.350***	-0.080 n.sig.	-0.223*	-0.176 n.sig.
Cultural capital (total)	0.012 n.sig.	0.346***	-0.065 n.sig.	-0.113 n.sig.	-0.159 n.sig.
Symbolic capital (total)	-0.130 n.sig.	0.576***	-0.013 n.sig.	-0.399***	-0.077 n.sig.

Note: *p<0.1; **p<0.05; ***p<0.01

Table 8. Data on correlations between frequencies of codes related to forms of economic capital and capital conversions, and characteristics of the companies and characteristics of the research participants (the data refer to Spearman's correlation coefficient)

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