

Influence of Financial Predictors on Competitiveness of Metal Processing Companies

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Abstract: Metal processing industry is an important sector of Croatian economy that contributes significantly to its competitiveness and assures industrial development of the Republic of Croatia. Competitive advantage is a key distinctive feature of a company on the market. In current circumstances, competitive advantage is more difficult to achieve and maintain than ever before because of constantly growing market competition. The main research objective is to investigate connection between selected financial predictors and to assess their influence on successfulness and achievement of competitive advantage of metal processing companies. The research is conducted on 578 small, medium and large metal processing companies aiming to determine the influence of financial predictors on their competitiveness. The research results indicate that there is a correlation between financial factors and the number of employees, total revenue and total expenses in small, medium and large companies in the metal processing industry. The research results also confirm that the observed financial predictors have influence on the competitiveness of small, medium and large companies. Such influence is the strongest in small, and the weakest in large metal processing companies. This paper provides an insight into the influence of financial predictors on the competitiveness of metal processing companies, which will facilitate entrepreneurs to improve their company's competitive position on the market. Statistical analysis of research data was performed by statistical software MedCalc® Statistical Software version 20.026 and SPSS Statistics for Windows, Version 23.0.

Keywords: competitiveness; financial predictors; metal processing industry

1 INTRODUCTION

Metal processing industry is an important sector of the EU economy, and it contributes greatly to its competitiveness and industrial development. The European metal processing industry is a world leader in innovation and environmental sustainability. "It directly employs 326500 highly skilled people and through indirect and induced effects supports the jobs of up to 2.6 million in total. The sector produces on average 160 million tons of steel per year at more than 500 steel production sites across 22 EU member states. Closely integrated with Europe's manufacturing and construction industries, steel is the backbone for development, growth and employment in Europe" [1]. The modern world is possible because of steel, which is the most versatile industrial material in the world.

Competitive and strong steel manufacturing, i.e. strong metal processing industry is important in the industrial base of both the European Union and the Republic of Croatia.

This paper investigates the correlation between selected financial predictors and their influence on achievement of success and competitive advantage of metal processing companies.

Previous study confirmed a direct correlation between the intellectual capital and the success of small and medium-sized enterprises [2]. Achieving a sustainable competitive position on a competitiveness ladder presupposes the use of strategic knowledge in directing the company's business [3]. Research results indicate the importance of conscious and systematic management of organisational knowledge for assuring company's success [4]. According to [5], top managers are still more oriented to traditional procedures of measuring the company's performance on the basis of financial indicators. This fact is used as a starting point in this research to prove that selected financial predictors have influence on the success and achievement of a competitive advantage of metal processing companies.

2 METAL PROCESSING INDUSTRY IN CROATIA

Metal processing industry is one of the most important industrial branches in the Republic of Croatia, as it employs 38800 people and accounts for 7.7% of the total industrial production of Croatia and 11.8% of the GDP of the entire processing industry [6]. "In 2020, its share in the total revenue of the processing industry was 10.5% (19.4 billion HRK). Micro and small companies contributed with 43% to the total revenue (8.4 billion HRK). In 2020, micro and small companies accounted for 96%, and in 2021 for 93% of all companies involved in metal processing" [6].

Characteristics of Croatian industry are significantly different than those of other European countries. Due to war affairs, internal problems, inappropriate or non-existent industrial policy and late integration into regional, European and world economic trends, Croatia was failing to attract initial foreign investments in its production activities [7]. While other Central European countries were building their competitiveness on the market of old EU members, Croatian companies had only limited access to that market until the second half of the 2000s because of the late signing of the Stabilisation and Association Agreement [7].

According to the data of the Croatian Central Finance and Contracting Agency, investors are interested to invest into the production and processing industry, especially into metal manufacturing and processing branch, so there is a potential for further development [8]. Compared to similar manufacturing and processing industries in the neighbouring countries, competitive position of metal industry of Croatia makes it desirable for investments [8]. Croatian metal processing industry is a stimulating investment environment since it offers 1) reduction of profit tax to 9-0%; regular profit tax: 12% and 18%; 2) employment subsidies of up to 9000 EUR for newly employed; 3) incentives for capital expenses and labour-intensive investment projects; increased subsidies for creation of new jobs up to 100%; 4) additional incentives for development and innovation activities, support for business activities and high-value services, and 5)

education grants amounting up to 70% of education costs [9].

As of the National Classification of Activities 2007 (Official Journal 58/2007), metal processing industry is classified in the sector C with three activities [10]:

- C24 Production of basic metals,
- C25 Production of fabricated metal products, except machinery and equipment,
- C28 Production of machinery and equipment.

"Activity C24 involves smelting and/or refining of ferrous and non-ferrous metals from ore, pieces or waste by using electro metallurgical or other metallurgical processing technology. This section also refers to production of metal alloys and strengthened alloys by introducing other chemical elements into pure metals. The output of smelting and refining is usually in the form of ingots used in rolling, drawing and coating processes for production of sheets, strips, sticks, rods or wires or in liquid form for making of castings and other basic metal products" [11].

"Activity C25 refers to manufacturing of products from pure metal (such as metal parts, containers and structures), usually those with a static, stationary function, as opposed to those in sections 26-30 that deal with combination and assembly of such metal products (sometimes with other

materials) into more complex units which, if not fully electric, electronic or optical, also work with moving parts" [11].

"Activity C28 refers to production of machines and devices that affect materials independently, either mechanical or thermal, or perform operations on materials (such as handling, dispersing, weighing or packaging), including their mechanical components that produce or apply force and any specially manufactured primary parts. This activity includes fixed and mobile or portable devices, regardless of being used in industry, construction, agriculture or in household. Manufacture of special devices for the transport of passengers or cargo within a predetermined delimitation also belongs to this activity C28" [11].

For a competitive and sustainable steel industry in Europe, new enterprises, especially small and medium enterprises, represent the most important source of new employment. Small and medium enterprises generate more than 4 million new jobs every year in Europe [12]. As having considered this fact, EU adopted the Entrepreneurship 2020 Action Plan aimed at reigniting the entrepreneurial spirit in Europe, educating and training of future entrepreneurs, creating entrepreneurial environment and achieving a competitive advantage [13].

Table 1 Number of metal processing companies in the period 2017-2021 (prepared by the author according to the data of the Croatian Chamber of Economy)

	Year 2017	Year 2018	Year 2019	Year 2020	Year 2021
C	11069	12714	13543	14242	15217
C24	81	96	101	105	111
C25	1845	2143	2305	2433	2675
C28	517	557	580	588	630
Σ (C24, C25, C28)	2443	2796	2986	3126	3416
% Σ u C	22.07%	21.99%	22.04%	21.94%	20.67%

Table 2 Distribution of metal processing companies with respect to their size, year 2021 (prepared by the author according to the data of the Croatian Chamber of Economy)

	Micro	Small	Medium	Large
C	12090	2515	478	132
C24	70	28	6	7
C25	2074	488	102	11
C28	437	149	36	8
Σ (C24, C25, C28)	2581	665	144	26

Table 3 Croatian metal processing industry in numbers, year 2021 (prepared by the author according to the data of the Croatian Chamber of Economy)

Variable	Number of employees	Number of companies	Profit or loss before tax		Total revenue			
			Σ	$AS^{employees}$	$AS^{companies}$	Σ	$AS^{employees}$	$AS^{companies}$
Micro	8115	2581	217657138.00	26821.58	84330.55	3137547897.00	386635.60	1215632.66
Small	17038	665	456248127.00	26778.27	686087.41	9571138815.00	561752.48	14392689.95
Medium	17148	144	765090064.00	44616.87	5313125.44	12278158348.00	716011.10	85264988.53
Large	13925	26	1259820962.00	90471.88	48454652.38	12639715710.00	907699.51	486142911.92
Total	56226	3416	2698816291.00	47999.44	790051.61	37626560770.00	669202.16	11014801.16

As presented in Tab. 1, the number of companies involved in metal processing business from 2017 to 2021 is continuously growing, which may indicate that the EU Action Plan has been successful. Tab. 2 shows that micro, small and medium-sized enterprises are dominant in all three groups of activities C24, C25 and C28, which is comparable to other EU countries and indicates the importance of investments and assurance of competitive advantage of both large and small and medium-sized enterprises. The data presented in Tab. 3 shows that as many as 60% of workers working in the metal processing

industry is employed by small and medium-sized enterprises, both in the EU and in Croatia.

Achievement of competitive advantage would not be possible without investing in the skills and knowledge of all employees. Importance of skilled workforce has been recognised at the European level. The study "European vision on steel-related skills and supporting actions to solve the skills gap today and tomorrow in Europe" determines the current and future needs for skills in the steel industry and elaborates the causes of skills deficiencies and gaps thus emphasising the importance of

developing new skills for a globally competitive steel industry.

Results presented in Tab. 3 indicate continuous increase in total profit and revenue of all metal processing companies, regardless of their size. According to the data referring to the sum, there is no uniform continuity between profit and revenue for all companies, no matter of the size. Increase in profit or loss before tax of small companies is by 52.29% greater than that of micro companies. Such increase is by 40.37% greater in medium companies than in small companies, and by 39.27% greater in large companies than in medium companies. Referring to the sum of revenues, there is 67.22% greater increase in small companies compared to micro ones, while such increase is by 22.05% greater in medium companies than in small companies and 2.86% greater in large companies than in medium ones.

According to the obtained results, micro companies contribute with 8.06% in total profit variance of metal processing industry in the Republic of Croatia, while the largest variance of 46.68% is realised by large companies, as expected. The rest of 45.25% is realised by small and medium companies. Despite similar revenues in total values, there is a significant difference between large and medium companies, which amounts to 18.33%.

3 ACHIEVING A COMPETITIVE ADVANTAGE IN THE METAL PROCESSING INDUSTRY

Entrepreneurship in metal processing industry, both in Europe and in Croatia, makes economies more competitive and innovative. Competitive and strong steel processing is important for the industrial base of both Europe and Croatia. With the Europe 2020 Strategy, the European Union laid the foundations for future growth of metal processing industry, thus setting a framework for assurance of its competitiveness.

The Annual Growth Survey 2013 pointed out the need for improving the business environment in order to increase the competitiveness of EU economies. Importance of the companies' competitiveness for the EU is emphasised in the COSME Programme for the Competitiveness of Enterprises and SMEs, as well as in the Horizon Europe 2020. "The Horizon Europe Programme budget included 10 billion EUR available to SMEs and small companies with medium-size market capitalisations through the European Innovation Council (EIC)" [14].

Action Plan for a competitive and sustainable steel industry in Europe follows the EU vision for the period 2030-2050 that sets strategies and paths for development of the European economy into a sustainable, competitive and efficient global energy system [12].

As of the World Competitiveness Rankings Yearbook 2021, Croatia occupies the 59th place out of 64 leading global economies. During the last five years, from 2017 to 2021, in the global competitiveness ranking, Croatia was being ranked between 59th and 61st place [15].

"Circumstances caused by the COVID-19 pandemic and expectations of the post-pandemic period stimulated by the new EU financial envelope encourage accelerated undertakings toward necessary structural changes and achievement of the desired competitive advantage" [15].

Competitive advantage is a trait that distinguishes a company from other competitors on the market, or according to [17], it marks a company's efficiency for a successful business [16, 17]. In any case, competitive advantage has become essential for a company's business on the market.

"Competition is at the core of the success or failure of firms. Competitive strategy is the search for a favourable competitive position in an industry. Competitive strategy aims to establish a profitable and sustainable position against the forces that determine industry competition" [18]. However, at present, competitive advantage is more difficult to be achieved and maintained than ever before [14]. "The reason for that is a permanently increasing level of market competition, which is the result of several interrelated factors, such as lower market entry barriers, fast technology development, extreme production capacities, deregulation, globalisation, etc." [19]. Modern company in today's economy is no longer solely dependent on its tangible assets, such as real estate, factories or facilities. Doing business in today's global economy creates new types of companies, which are becoming increasingly dependent on their intangible assets, such as information and knowledge. Therefore, modern knowledge-based companies need to continuously work on their knowledge-based strategy as a source of the competitive advantage [20]. While researching the impact of financial knowledge management in small and medium-sized enterprises, the authors concluded that there was a direct relation between the integration of intellectual capital and the success of small and medium-sized enterprises, as well as an indirect relation mediated by the financial knowledge management system within work groups [2].

Based on the previous research, and according to [21], the competitiveness of a company is determined by its financial health and performance. As concluded by the authors, any company interested in developing and increasing its competitiveness should evaluate its current situation in terms of its financial health and performance. Likewise, in order to improve its competitive position, the company has to focus on internal processes to increase its business potential, efficiency and performance [21].

The analysis of influences that the selected financial predictors have on the competitiveness of metal processing companies is offering the entrepreneurs a clear insight into their current situation and provides necessary information which can facilitate improvement of their competitive position on the market.

4 RESEARCH

Categorical data are presented in absolute and relative frequencies. Normality of the distribution of numerical variables is tested by the Shapiro-Wilk test. As numerical data do not follow a normal distribution, they are described by the median and the interquartile range. Differences in numerical variables between the three independent groups are tested by the Kruskal Wallis test to obtain deviation from normal distribution. The correlation score is given by the Spearman's correlation coefficient (Rho). Multivariate linear regression analysis (Stepwise method) is applied to test potential financial predictors to explain correlation

between the number of employees and total revenue and total expense. All *p*-values are double tailed. The significance level is set at *Alpha* = 0.05. Statistical data analysis is performed by statistical software MedCalc® Statistical Software version 20.026 (MedCalc Software Ltd, Ostend, Belgium; <https://www.medcalc.org>; 2022) and by SPSS Statistics for Windows, Version 23.0 (Released 2015. IBM. Armonk, NY: IBM Corp.).

The research is based on two hypotheses, as follows:

H1 - There is a correlation between financial factors and the number of employees, total revenue and total expenses in small, medium and large companies,

H2 - Financial predictors have influence on competitiveness of small, medium and large companies.

The research is carried out on 578 Croatian metal processing companies, of which 455 (78.9%) are small, 101 (17.5%) are medium, and 21 (3.6%) are large. All financial factors differ significantly according to companies' size, except for the net profit margin, which is slightly lower in large companies, but it does not differ significantly. Moreover, significant differences are not observed for the quick liquidity ratio, although it is slightly higher in large companies compared to small and medium ones (Tab. 4).

Table 4 Differences in financial factors with respect to metal processing companies' size (prepared by the author)

	Median (IQR)			<i>P</i> *
	Small enterprise (<i>n</i> = 455)	Medium enterprise (<i>n</i> = 101)	Large enterprise (<i>n</i> = 21)	
Number of employees	21 (10-48)	105 (63-178)	381 (273-560.3)	< 0.001
Revenue/employee	227525.5 (103140.5-444234.0)	623573.5 (327672.5-1462466.5)	529312.5 (328895.3 - 1555706.5)	< 0.001
Net profit/employee	4575.5 (341-15569.5)	8563 (619.3-35051.0)	20263.5 (1319.3-66932.0)	0.02
Average monthly net wages and salaries/employee	2859 (2341-3845.5)	4401 (3754.5-5056.0)	5138.50 (4439.5-6138.5)	< 0.001
Current liquidity ratio	1.1 (0.6-2)	1.4 (1.2-6)	1.2 (0.8-1.7)	0.005
Quick liquidity ratio	0.8 (0.3-1.6)	0.9 (0.5-1.8)	1 (0.4-1.2)	0.14
Net profit margin	1.8 (0.2-6.1)	1.5 (0.2-4.4)	2.6 (0.3-6.7)	0.47
Return on equity	16.3 (1.6-62.5)	5.1 (0.4-15.8)	8.3 (1.7-67.3)	< 0.001
Earnings before tax - EBT	19400 (1200-105000)	1229450 (172000-4419925)	9117450 (600150-29044675)	< 0.001
Earnings after tax	15600 (850-85950)	898100 (98100-3691575)	9047000 (554175-28144450)	< 0.001
Total revenue	754800 (215200-2397700)	73762700 (45982300-121141050)	348560600 (132283725-551572475)	< 0.001
Total expense	691200 (212150-2252750)	78522050 (44080475-116670050)	336378000 (148183575-505496825)	< 0.001

IQR - interquartile range; *Kruskal Wallis test

Table 5 Correlation between the number of employees, total revenue and total expense and financial indicators of small, medium and large metal processing companies (prepared by the author)

	Spearman's correlation coefficient - <i>Rho</i> (<i>p</i> -value)		
	Number of employees	Total revenue	Total expense
Small companies			
Revenue/employee	0.192 (< 0.001)	0.761 (< 0.001)	0.741 (< 0.001)
Net profit/employee	0.114 (0.02)	0.391 (< 0.001)	0.306 (< 0.001)
Average monthly net wages and salaries/employee	0.168 (< 0.001)	0.408 (< 0.001)	0.407 (< 0.001)
Current liquidity ratio	0.067 (0.18)	0.159 (< 0.001)	0.114 (0.02)
Quick liquidity ratio	0.081 (0.10)	0.119 (0.02)	0.07 (0.15)
Net profit margin	0.083 (0.09)	0.177 (< 0.001)	0.083 (0.09)
Return on equity	-0.107 (0.03)	-0.12 (0.01)	-0.131 (0.01)
Earnings before tax - EBT	0.449 (< 0.001)	0.620 (< 0.001)	0.546 (< 0.001)
Earnings after tax	0.440 (< 0.001)	0.606 (< 0.001)	0.532 (< 0.001)
Medium companies			
Revenue/employee	-0.613 (< 0.001)	0.671 (< 0.001)	0.644 (< 0.001)
Net profit/employee	-0.206 (0.04)	0.409 (< 0.001)	0.321 (< 0.001)
Average monthly net wages and salaries/employee	-0.359 (< 0.001)	0.023 (0.82)	0.022 (0.83)
Current liquidity ratio	-0.046 (0.65)	-0.016 (0.88)	-0.036 (0.72)
Quick liquidity ratio	-0.101 (0.32)	-0.070 (0.49)	-0.092 (0.36)
Net profit margin	0.041 (0.68)	0.251 (0.01)	0.153 (0.13)
Return on equity	-0.092 (0.37)	0.304 (< 0.001)	0.259 (0.01)
Earnings before tax - EBT	0.050 (0.62)	0.456 (< 0.001)	0.360 (< 0.001)
Earnings after tax	0.049 (0.63)	0.451 (< 0.001)	0.355 (< 0.001)
Large companies			
Revenue/employee	-0.387 (0.08)	0.752 (< 0.001)	0.730 (< 0.001)
Net profit/employee	-0.469 (0.03)	0.570 (0.01)	0.43 (0.05)
Average monthly net wages and salaries/employee	-0.648 (< 0.001)	0.152 (0.51)	0.171 (0.46)
Current liquidity ratio	0.103 (0.66)	0.219 (0.34)	0.113 (0.63)
Quick liquidity ratio	-0.066 (0.78)	0.286 (0.21)	0.189 (0.41)
Net profit margin	-0.219 (0.34)	0.255 (0.27)	0.073 (0.75)
Return on equity	-0.373 (0.1)	0.040 (0.86)	-0.004 (0.99)
Earnings before tax - EBT	-0.317 (0.16)	0.684 (< 0.001)	0.538 (0.01)
Earnings after tax	-0.339 (0.13)	0.679 (< 0.001)	0.532 (0.01)

Spearman's correlation coefficient (*Rho*) is applied to check the correlation between financial factors and the

number of employees, total revenue and total expenses in small, medium and large companies.

Referring to small companies, there is a significant correlation established between the number of employees and: the revenue/employee, the net profit/ employee, the average wages and salaries per employee, the return on equity, the earnings before tax and after tax. The strongest correlation is determined between the number of employees and the earnings before tax ($Rho = 0.449$), and the earnings after tax ($Rho = 0.440$). Total revenue is in significant correlation with all financial indicators, yet the strongest correlation is established with the revenue per employee ($Rho = 0.761$), earnings before tax ($Rho = 0.620$) and earnings after tax ($Rho = 0.606$). Total expense is in significant correlation with: revenue/employee, net profit/employee, average wages and salaries per employee, quick liquidity ratio, return on equity, earnings before tax and earnings after tax. The strongest correlation is established between the total expense and the revenue per employee ($Rho = 0.741$), earnings before tax ($Rho = 0.546$) and earnings after tax ($Rho = 0.532$).

Referring to medium companies, there is significant correlation established between the number of employees and: the revenue/employee, the netprofit/employee, the average wages and salaries per employee, and the return on equity. The strongest negative correlation is established between the number of employees and the revenue per employee, meaning that the greater the number of employees, the lower the revenue per employee ($Rho = -0.613$). Total revenue is not significantly correlated with the average wages and salaries per employee, and with both current and quick liquidity ratios. The strongest correlation is with the revenue per employee ($Rho = 0.671$). There is the strongest correlation between the total expense and the revenue per employee ($Rho = 0.644$), meaning that the

higher the revenue per employee, the higher the expenses, and vice versa.

Referring to large companies, the higher the number of employees, the lower the average wages and salaries per employee ($Rho = -0.648$). When the total revenue is higher, the revenue per employee is higher ($Rho = 0.752$), the net profit per employee is higher ($Rho = 0.570$), as well as earnings before tax - EBT ($Rho = 0.684$) and earnings after tax ($Rho = 0.679$). When total expense is higher, revenue per employee is higher ($Rho = 0.730$), earnings before tax ($Rho = 0.538$) and earnings after tax ($Rho = 0.532$) are also higher (Tab. 5).

Multivariate regression analysis (*Stepwise method*) is applied to check the influence of financial indicators on the number of employees, total revenue and total expense of companies. Preliminary analyses confirmed that the assumptions of normality, linearity, multicollinearity and homogeneity of variance were not compromised.

Referring to small companies, when explaining the number of employees within the final model, total revenue ($\beta = 0.69$; $P < 0.001$), and revenue per employee ($\beta = -0.27$; $P < 0.001$) are identified as significant predictors. The model as a whole explains 42.6% of variance of the number of employees in small companies.

Explanation of the total revenue identifies total expense ($\beta = 0.97$; $P < 0.001$), and earnings before tax EBT ($\beta = 0.08$; $P < 0.001$) as significant predictors. The model as a whole explains 99.5% of variance of the total revenue in small companies.

Explanation of the total expense identifies the total revenue ($\beta = 1.03$, $P < 0.001$), and earnings before tax - EBT ($\beta = -0.08$; $P < 0.001$) as significant predictors. The model as a whole explains 99.5% of variance of the total expense in small companies (Tab. 6).

Table 6 Influence of financial predictors on competitiveness of small metal processing companies (multivariate linear regression, *Stepwise method*) (prepared by the author)

Small companies	Predictors	Regression coefficient β	t	p-value
Number of employees	Total revenue	0.69	17.1	<0.001
	Revenue/ employee	-0.27	-6.7	<0.001
	Constant	4.38	7.5	<0.001
	Regression model	$R = 0.653$; $R^2 = 0.426$; $R^2_{kor} = 0.423$ $F_{(2, 397)} = 147.3$; $P < 0.001$		
Total revenue	Total expense	0.97	125316.2	<0.001
	Earnings before tax - EBT	0.08	9900.2	<0.001
	Constant	-62.1	-1.1	0.04
	Regression model	$R = 0.997$; $R^2 = 0.995$; $R^2_{kor} = 0.995$ $F_{(2, 397)} = 9.14 \cdot 10^9$; $P < 0.001$		
Total expense	Total revenue	1.03	125316.2	<0.001
	Earnings before tax - EBT	-0.08	-9639.6	<0.001
	Constant	62.2	1.07	0.04
	Regression model	$R = 0.997$; $R^2 = 0.995$; $R^2_{kor} = 0.995$ $F_{(2, 397)} = 9.14 \cdot 10^9$; $P < 0.001$		

R^2 - total contribution to explained variance; R^2_{kor} - corrected total contribution to explained variance

Referring to medium companies, when explaining the number of employees within the final model, revenue per employee ($\beta = 0.0001$; $P < 0.001$), total revenue ($\beta = 0.03$, $P = 0.001$), and average monthly net wages and salaries per employee ($\beta = -0.014$; $P = 0.01$) are identified as significant predictors. The model as a whole explains 30.4% of variance of the number of employees in medium companies.

When explaining the total revenue, there are the total expense ($\beta = 1.01$, $P < 0.001$), earnings after tax ($\beta = 1.0$; $P < 0.001$), net profit per employee ($\beta = -0.58$; $P < 0.001$),

and quick liquidity ratio ($\beta = -0.15$; $P < 0.001$) determined as significant predictors. The model as a whole explains 98% of variance of the total revenue in medium companies.

Explanation of the total expense identifies earnings before tax-EBT ($\beta = -0.98$; $P < 0.001$), and total revenue ($\beta = 0.99$; $P < 0.001$) as significant predictors. The model as a whole explains 99.9% of variance of the total expense in medium companies (Tab. 7).

Referring to large companies, when explaining the number of employees within the final model, there is only average monthly net wages and salaries per employee ($\beta =$

-0.14; $P < 0.001$) determined as a significant predictor. The model as a whole explains 47.2% of variance of the number of employees in large companies.

When explaining the total revenue of large companies, there are revenue per employee ($\beta = 0.001$, $P = 0.001$), earnings before tax - EBT ($\beta = 0.99$; $P < 0.001$), earnings after tax ($\beta = 0.003$; $P < 0.001$) and total expense ($\beta = 1.0$; $P < 0.001$) determined as significant predictors. The model

as a whole explains 99.9% of variance of the total revenue in large companies.

Explanation of the total expense of large companies determines revenue per employee ($\beta = -0.001$, $P = 0.001$), earnings before tax - EBT ($\beta = -0.997$; $P < 0.001$), earnings after tax ($\beta = -0.003$; $P < 0.001$) and total revenue ($\beta = 1.0$; $P < 0.001$) as significant predictors. The model as a whole explains 99.9 % of variance of the total expense in large companies (Tab. 8).

Table 7 Influence of financial predictors on competitiveness of medium metal processing companies (multivariate linear regression, *Stepwise method*) (prepared by the author)

Medium companies	Predictors	Regression coefficient β	t	p -value
Number of employees	Revenue/ employee	0.0001	-5.2	< 0.001
	Total revenue	0.03	3.3	0.001
	Average monthly net wages and salaries per employee	-0.014	-2.6	0.01
	Constant	174.1	6.3	< 0.001
Regression model		$R = 0.552$; $R^2 = 0.304$; $R^2_{kor} = 0.282$ $F_{(3, 98)} = 13.84$; $P < 0.001$		
Total revenue	Total expense	1.01	315.3	< 0.001
	Earnings before tax - EBT	1.0	62.5	< 0.001
	Constant	-666346.8	-2.07	0.04
	Regression model	$R = 0.999$; $R^2 = 0.987$; $R^2_{kor} = 0.986$ $F_{(2, 98)} = 52529.0$; $P < 0.001$		
Total expense	Total revenue	0.99	315.4	< 0.001
	Earnings before tax - EBT	-0.98	-60.7	< 0.001
	Constant	746175.7	2.3	0.02
	Regression model	$R = 0.999$; $R^2 = 0.999$; $R^2_{kor} = 0.999$ $F_{(2, 98)} = 49809.5$; $P < 0.001$		

R^2 - total contribution to explained variance; R^2_{kor} - corrected total contribution to explained variance

Table 8 Influence of financial predictors on competitiveness of large metal processing companies (multivariate linear regression, *Stepwise method*) (prepared by the author)

Large companies	Predictors	Regression coefficient β	t	p -value
Number of employees	Average monthly net wages and salaries per employee	-0.14	-4.12	0.001
	Constant	1180.4	6.3	< 0.001
	Regression model	$R = 0.687$; $R^2 = 0.472$; $R^2_{kor} = 0.444$ $F_{(1, 20)} = 16.9$; $P = 0.001$		
Total revenue	Total expense	1.0	117890.8	< 0.001
	Earnings before tax - EBT	0.99	2081.5	< 0.001
	Earnings after tax	0.003	8.39	< 0.001
	Revenue/ employee	0.001	4.02	0.001
	Constant	-1040.9	-0.32	0.75
Regression model		$R = 0.999$; $R^2 = 0.999$; $R^2_{kor} = 0.999$ $F_{(4, 20)} = 4.76 \cdot 10^{10}$; $P < 0.001$		
Total expense	Total revenue	1.0	117890.8	< 0.001
	Earnings before tax - EBT	-0.997	-2081.5	< 0.001
	Earnings after tax	-0.003	-8.39	< 0.001
	Revenue/ employee	-0.001	-4.02	0.001
	Constant	1041.2	0.32	0.75
Regression model		$R = 0.999$; $R^2 = 0.999$; $R^2_{kor} = 0.999$ $F_{(4, 20)} = 4.16 \cdot 10^{10}$; $P < 0.001$		

R^2 - corrected total contribution to explained variance; R^2_{kor} - corrected total contribution to explained variance

5 CONCLUSION

For entrepreneurs, investing in knowledge is considered as one of the best investments in terms of return. Once having realised the benefits of investing in knowledge and learning, entrepreneurs can develop business knowledge, skills and attitudes to strengthen their entrepreneurial mind set. Knowledge makes it possible to turn ideas into actions, thus achieving competitive advantage on the market.

Understanding the influence of analysed financial predictors on the competitiveness of companies can help entrepreneurs in the metal processing industry to achieve competitive advantage.

The research into a sample of 578 small, medium and large Croatian metal processing companies provides an

insight into the extent of influences that financial predictors have on companies' competitiveness.

The research results indicate that there is a correlation between financial factors and the number of employees, total revenue and total expenses in small, medium and large companies in the metal processing industry. The research results also confirm that the observed financial predictors have influence on the competitiveness of small, medium and large companies. Such influence is the strongest in small, and the weakest in large metal processing companies.

Based on the obtained research results the following conclusions have been made: the H1 hypothesis stating that there is a correlation between the number of employees, total revenue and total expense and financial factors in small, medium and large metal processing companies is partially accepted, since such correlation has been most

pronounced in small companies and least in large ones. The H2 hypothesis stating that there is an influence of financial predictors on the competitiveness of small, medium and large metal processing companies is accepted.

A sort of a limitation to this research is the fact that it has been carried out on a sample of companies operating in the Republic of Croatia. It would be desirable to apply the same research methodology on a larger sample of companies operating in the European Union and to analyse and compare obtained results. By applying the same methodology to a larger sample, it would be possible to more accurately investigate the connection of selected financial predictors and assess their impact on the performance and achievement of a competitive advantage of metal processing companies. The presented research is based on data obtained on Digital Chamber, an online platform of the Croatian Chamber of Economy facilitating communication between business entities, public administration and citizens, which can be also considered as a limitation to this research.

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