

## Does manager's education play a significant role in company's financial performance? An empirical study of the best-performing CEOs in the world.

*¿Juega la formación del directivo un papel importante en los resultados financieros de la empresa? Un estudio empírico de los directores generales con mejores resultados del mundo.*

**Dana R. Stojiljkovic** (ds20185025@student.fon.bg.ac.rs)  
Volkswagen Group Services Ltd, Emden, (Germany)  
Faculty of Organizational Sciences, University of Belgrade, (Serbia)  
<https://orcid.org/0000-0002-1867-8886>

**Mladen Cudanov** (cudanov.mladen@fon.bg.ac.rs)  
Faculty of Organizational Sciences, University of Belgrade, (Serbia)  
<https://orcid.org/0000-0001-6895-6525>

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**RESUMEN:** El objetivo de este trabajo es examinar el impacto del nivel educativo de los directores generales en los resultados financieros de las empresas, medidos por el ROA (rendimiento de los activos) y el EBITDA (beneficios antes de intereses, impuestos, depreciaciones y amortizaciones). Utilizando la lista de los 100 directores generales con mejores resultados del mundo publicada en Harvard Business Review, analizamos la formación de los directores generales examinando sus estudios de grado y de máster, la clasificación de las universidades a las que asistieron los directores generales (Shanghái), la alineación de sus campos de estudio de grado y de máster, así como la alineación del máster con la rama industrial de la empresa, como predictores del ROA y el EBITDA de la empresa.

Nuestros resultados revelaron una correlación negativa estadísticamente significativa entre el ROA y la edad de la empresa. También se observó que los directivos de las empresas más jóvenes tienden a tener un máster en ámbitos distintos del sector principal de su empresa. El análisis de regresión mostró una asociación positiva estadísticamente significativa entre el ROA de la empresa y el título de máster del director general que difiere del sector industrial de su empresa, pero no después de controlar la edad de la empresa.

Al no encontrar ninguna relación sólida entre la educación formal del director y los resultados financieros de la empresa, concluimos que otros factores distintos de la educación del director general pueden ejercer una mayor influencia en los resultados financieros de la empresa.

**PALABRAS CLAVE:** formación del directivo; edad de la empresa; resultados financieros.

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**ABSTRACT:** The aim of this paper is to examine the impact of CEO's education degree on company's financial performances measured by ROA (Return on Assets) and EBITDA (Earnings before Interest, Taxes, Depreciation and Amortization).

Using the list of World's 100 best-performing CEOs published in Harvard Business Review we analyzed the CEO's educational background by examining their undergraduate and master's

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## Does manager's education play a significant role in company's financial performance?

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studies, the Shanghai rankings of universities the CEOs attended, alignment of their undergraduate and master's degree fields of study, as well as alignment of master's degree with the company industry branch, as predictors of company's ROA and EBITDA.

Our results revealed a statistically significant negative correlation between ROA and company age. We also found that managers in younger companies tend to have master's degree in domains diverging from their company's primary industry branch. The regression analysis showed a statistically significant positive association of company's ROA with the CEO's master's degree diverging from their company's industry branch, but not after controlling for company's age.

Having found no robust relationship between manager's formal education and company's financial performance, we conclude that factors other than CEO's education may exert greater influence on company's financial performance.

**KEYWORDS:** manager's education; company age; financial performance

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### 1. INTRODUCTION

Managers are key company players who have direct impact on company's decision-making process as well as financial results. Each year the most prominent business magazines such as Harvard Business Review, Bloomberg BusinessWeek, The Fortune etc. publish various top lists: the best companies of the year, the best managers of the year, wealthiest persons in the world and so on. Such lists are sometimes very intriguing and spark lively discussions in academic and business circles. There is a huge academic and practical interest in understanding the factors which contribute to someone achieving this financially and socially respectable position.

One factor considered by numerous studies is the formal education of managers. Educational level is oftentimes understood as a proxy of someone's professional competence and even intelligence. A study conducted by Frey & Detterman (2004) reported that university entrance exam scores are strongly correlated with intelligence tests, which could mean that managers from universities with relatively high exam scores are more intelligent, able to make better decisions and improve company performances. Bantel & Jackson (1998) conducted a study in the banking sector to define the characteristics of managers who are leading the most innovative banks. Their results indicated a strong correlation between the quality of manager's education and the level of technical innovation in the bank. Although the authors proposed several possible pathways accounting for this connections, they all indicate that higher educated management creates an environment more conducive for technical innovation. Tyler & Steensma (1998) suggested that top managers with strong technical background pay more attention to opportunities provided by the technical alliance than managers with other types of education. Barker & Mueller (2002) found that significant R&D spending are mostly found in the companies where CEOs have advanced science-related degrees. A study by Golec (1996) found positive correlation between managers MBA degree and company's performances. Younger managers with MBA degrees, who had longer tenure in the fund, provided a better risk-adjusted performance. According to a study conducted by Gottesman & Morey (2006) managers with MBA degrees from elite schools perform superior to those without MBA degrees and to managers holding MBAs from unranked programs. In the study conducted by Belliveau, O'Reilly, & Wade (1996) the authors came to conclusion that managers from more famous schools have better relationships with government officials which can have positive effect on their company performance. Hay & Hodgkinson (2006) found that MBA provides broader knowledge, which might not immediately contribute to financial success of managers but offers plurality of personal career possibilities. In a big study conducted by Hambrick

& Mason (1984) authors tried to understand if organizational outcomes such as strategic choices and performance levels can be partially predicted by managerial background characteristics. The finding could be summarized as follows: a) firms led by young managers will be more inclined to pursue risky strategies and experience greater growth and variability in profitability from industry averages than firms with older managers; b) the amount, but not the type, of formal education of management team will be positively associated with innovation; c) there is no relationship between the amount of formal management education of top managers and the average performance (either profitability or growth) of their firms; d) however, companies led by managers with modest formal management education will show greater variation from industry performance averages than those whose managers are highly skilled in management. In addition, the firms whose top managers have had substantial formal management education tend to be more administratively complex than the ones whose managers without such training.

The second group of studies did not find any meaningful correlation between manager's education (e.g., MBA degree) and company's performance. They postulated that education per se did not directly affect company's performance but rather influenced the way the managers think and pursue their actions. Forgues, Koch, & Monties (2017) did not find any statistically significant difference in the number of years someone worked in the company before becoming a CEO, between CEOs with an Ivy League degree and CEOs without an Ivy League degree. In the same way, in terms of years needed to become a CEO, professionals with a master's or doctoral degree needed similar number of years to become CEO as individuals without such a degree.

Although Master of business administration (MBA) programs are very prevalent among business professionals, some academics are prone to sharply criticize MBA schools, pointing out that they are often out-of-touch with the needs of the modern economy and irrelevant to the contemporary business environment. Furthermore, unlike other professions such as law, medicine, accounting, architecture, and some branches of engineering, manager's profession does not require a formal credential or certificate. In the same vein, the authors found only a modest effect of the professional's credentials on their yearly income (Pfeffer & Fong, 2002). Rubin & Dierdorff (2009) investigated the relevance of MBA curricula to the managerial competency requirements such as: managing decision-making processes, managing human capital, managing strategy and innovation, managing the task environment, managing administration and control, and managing logistics and technology. Their results showed that behavioral competencies indicated by managers to be most critical: managing decision-making processes and managing human capital were the ones least represented in the MBA curricula. The findings further indicated that institutional factors such as media rankings and mission orientation have no effect on the alignment of MBA curricula with critical managerial competencies.

What is the indicator of a good education? Does the university name guarantee a high-quality education? Does the type of degree affect the way managers approach business decisions? Does a master's degree provide advanced tools for better understanding and leading a company? Many questions need to be answered. The aim of this paper was to examine the impact of CEO's education degree on company's financial performance (Return on Assets - ROA and Earnings before Interest, Taxes, Depreciation and Amortization - EBITDA). Using the list of world's 100 best-performing CEOs in 2018 published in Harvard Business Review, we assessed the education level as a factor of company's performance, as well as the correlation between company age, industry branch and manager's education with ROA and EBITDA.

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## Does manager's education play a significant role in company's financial performance?

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Development of IT facilities opened a great opportunity for active leadership and global collaboration. As shown in the study conducted by Cudanov, Savoju, & Jasko (2012), the usage of Technology Enhanced Learning Tools (Moodle, OneNote, Panopto etc.) had a noteworthy positive impact on the organizational change and that the perception of change significantly depends on whether the employees are regular users of those tools, as well as how well they understand company's management processes.

## 2. METHODS

As a basis for our empirical analysis, we used the list of the best-performing CEOs in the world published by Hansen, Ibarra, & Peyer (2019). The authors considered companies that were at the end of 2017 in the S&P Global 1200 index, comprising 70% of the world's stock market capitalization and includes companies in North America, Europe, Asia, Latin America, and Australia. The authors calculated three metrics for each CEO's tenure: the country-adjusted total shareholder return, the industry-adjusted total shareholder return and change in market capitalization (measured in inflation-adjusted U.S. dollars). They ranked each CEO—from 1 (best) to 881 (worst)—for each financial metric and averaged the three rankings to obtain an overall financial rank. Incorporating three metrics is a balanced and robust approach: While country-adjusted and industry-adjusted returns risk being skewed toward smaller companies (it's easier to get large returns if you start from a small base), the change in market capitalization is skewed toward larger companies. To calculate the final ranking, they combined the overall financial ranking (weighted at 80%) and the two ESG (environmental, social, and corporate governance) rankings (weighted at 10% each), omitting CEOs who left office before June 30, 2018.

For each best-performing CEO, we acquired the following data: company name, company industry, country of residence, year of founding, ROA, EBITDA, CEO's undergraduate studies data, CEO's master studies data and CEO's PhD studies data. As a measurement of quality of the manager's education, we used the ARWU (Academic Ranking of World Universities) annual publications, also known as Shanghai Ranking (Academic Ranking of World Universities, 2019). The ARWU uses six objective indicators to rank world universities, including the number of alumni and staff winning Nobel Prizes and Fields Medals, number of highly cited researchers, number of articles published in journals of Nature and Science, number of articles indexed in Science Citation Index - Expanded and Social Sciences Citation Index, as well as the per capita performance of a university. In order to encompass the entirety of manager's education and working experiences path, we used publicly available data on undergraduate, master, and doctoral studies they attended as well as company's industry branch they are leading. For undergraduate and master studies we gathered the information on the type of studies, the university attended and position of the university on the Shanghai list. Three managers did not finish any undergraduate studies and were thus excluded from our study. The PhD studies were not included in subsequent analyses, since only 10% of the CEOs in our sample completed some sort of doctoral studies.

We examined the statistical relationship between various aspects of a manager's educational background such as type of undergraduate/master studies and company's financial performance. We also analyzed the correlations of company's financial performances with company age, with Shanghai university ranking their manager attended and with divergence of CEO's education and company's industry branch.

**Does manager's education play a significant role in company's financial performance?**

All statistical analyses were performed using statistical software IBM® SPSS® Statistics v.21. The sample description was performed using the standard methods of non-parametric descriptive statistics such as absolute and relative frequencies or medians and interquartile ranges (IQR), where appropriate. The statistical significance of difference in frequencies was tested using Fisher's Exact probability test. To test for statistical significance of difference between two or more medians we performed the Kruskal-Wallis test with Mann-Whitney test for post-hoc analyses, where appropriate. Pearson's linear correlation was used for estimation of statistical association after applying the appropriate transformations to the selected variables in order to meet the parametric requirements. A multivariate linear regression analysis was performed to build a predictive model of our outcome variables.

**3. RESULTS****3.1 Sample description**

In this study we analyzed educational background of 100 best-performing CEOs in the world as well as financial performances of the companies they represent. The *median company age* was 14.0 (IQR 9.0 to 22.0) years, *median ROA* was 10.0% (IQR 6.0 to 13.0), while *median EBITDA* was 2.4 (IQR 1.3 to 4.9) billion EUR. From all companies we analyzed 52.6% resided in the United States and Canada, 29.9% in Europe and 17.5% were located in other regions. Observed by the industry branch 28 companies (28.9%) were in financial services and real estate, 23 companies (23.7%) in telecommunication & information technology, 26 companies (26.8%) in industrials, energy, and transportation and 20 companies (20.6%) in retail, consumer goods and services.

Table 1: CEOs' education profile

	N	%
<b>Undergraduate programs</b>		
Law, philosophy, and political sciences	13	13.4%
Electrical and mechanical engineering	19	19.6%
Medicine and sciences	10	10.3%
Commerce and business administration	17	17.5%
Computer sciences	26	26.8%
Other	12	12.4%
<b>Master's programs</b>		
Electrical and mechanical engineering	10	10.3%
Commerce or business administration	26	26.8%
Other master's degree programs	14	14.4%
No master's degree	47	48.5%
<b>Shanghai ranking for undergraduate programs</b>		
top 500 ranked universities	61	62.9%
other universities	36	37.1%
<b>Shanghai ranking for master's programs</b>		
top 500 ranked universities	39	40.2%
other universities or no master's degree	58	59.8%

We grouped 30 different undergraduate study programs in six logical educational groups, having strata with five or fewer members aggregated into one subgroup named "Other undergraduate studies". In a similar vein, the fields of master's degree studies with less than five members were collapsed into the "Other master's degree" stratum (Table 1). CEOs without a master's degree were included as a separate subgroup. Shanghai university ranking of undergraduate, and masters' programs was split into subgroups top

### Does manager's education play a significant role in company's financial performance?

500 ranked universities and "other universities" representing universities ranked below 500 on the Shanghai's list.

### 3.2 Analysis of CEO's education based on geographical location of the company

Table 2 displays frequencies for undergraduate programs within the USA, Canada and Europe vs. in other regions. *None of the six programs was statistically significantly more frequent in either of the two geographic divisions.*

Table 2: Undergraduate programs in USA, Canada and Europe vs. in other regions

Undergraduate program	USA, Canada and Europe	Other regions	Fisher's Probability Test	Exact
	n=80	n=17	p	
Law, philosophy, or political sciences	11 (13.8%)	2 (11.8%)		>.999
Electrical and mechanical engineering	15 (18.8%)	4 (23.5%)		.737
Medicine and sciences	10 (12.5%)	0 (0.0%)		.201
Commerce and business administration	14 (17.5%)	3 (17.6%)		>.999
Computer sciences	21 (26.3%)	5 (29.4%)		.770
Other	9 (11.3%)	3 (17.6%)		.436

Table 3 displays frequencies for master's programs within the USA, Canada, and Europe vs. in other regions. *Managers without a master's degree were statistically significantly less prevalent in companies residing in the USA, Canada, or Europe in comparison to those from other regions (41.3% vs. 82.4%, respectively; p =.003).*

Table 3: Master's degree programs in USA, Canada and Europe vs. in other regions

Master's program	USA, Canada and Europe	Other regions	Fisher's Probability Test	Exact
	n=80	n=17	p	
Electrical and mechanical engineering	10 (12.5%)	0 (0.0%)		.201
Commerce and business administration	24 (30.0%)	2 (11.8%)		.145
Other master's degree	13 (16.3%)	1 (5.9%)		.452
Without master's degree	33 (41.3%)	14 (82.4%)		<b>.003</b>

### 3.3 Analysis of company's business performance based on CEO's field of education

Table 4 displays the median EBITDA and ROA across the six fields of undergraduate programs of the respective CEOs, showing *no statistically significant between-group differences.*

Table 4: Between-group differences in terms of the CEO's field of undergraduate studies

CEO's field of undergraduate programs	EBITDA			ROA		
	N	Median	(IQR)	Median	(IQR)	
Law, philosophy, or political sciences	13	1.7	(1.1 2.3)	8.6	(6.8 19.3)	
Electrical and mechanical engineering	19	2	(1.3 6.5)	8.7	(6.2 12.1)	
Medicine and sciences	10	2.6	(1.0 3.9)	11.2	(9.9 15.2)	
Commerce and business administration	17	2.1	(1.3 3.6)	8.1	(4.7 13.4)	
Computer sciences	26	2.6	(2.0 4.0)	10	(6.4 12.9)	
Other undergraduate studies	12	6.4	(1.7 8.4)	8.7	(1.4 13.6)	
Kruskal-Wallis test		$\chi^2(df=5)$	p	$\chi^2(df=5)$	p	
		5.368	0.374	3.848	0.586	

**Does manager's education play a significant role in company's financial performance?**

In a similar vein we analyzed the median EBITDA and ROA across the four fields of master's programs of the respective CEOs. We found *no statistically significant differences between the four groups of master's degree studies regarding EBITDA or ROA* (Table 5).

Table 5: Between-group differences in terms the CEO's field of master's degree studies

CEO's field of master's degree studies	EBITDA			ROA		
	N	Median	(IQR)	Median	(IQR)	
Without a master's degree	47	2.2	(1.3 5.0)	9.2	(6.2 12.9)	
Electrical and mechanical engineering	10	1.8	(1.3 3.0)	7.4	(4.8 12.1)	
Commerce and business administration	26	3.5	(1.2 5.2)	8.3	(4.6 12.2)	
Other master's degree	14	2.6	(1.2 3.5)	12.6	(9.9 21.7)	
Kruskal-Wallis test		$\chi^2(df=3)$	p	$\chi^2(df=3)$	p	
		1.671	0.648	4.849	0.187	

**3.4 Association of company performance and CEO's education profile**

We found a statistically significant negative correlation of company age and ROA ( $r=-.235$ ,  $p=.020$ ), but not EBITDA ( $r=-.051$ ,  $p=.662$ ). Similarly, divergence between CEOs master's degree education and company's industry branch showed statistically significant positive correlation with ROA ( $r=.233$ ,  $p=.021$ ), but not with EBITDA ( $r=.086$ ,  $p=.401$ ). The other education parameters showed no statistically significant correlation with ROA or EBITDA (Table 6). Company's age was statistically significantly negatively correlated with the divergence between CEOs master's degree education and company's industry branch ( $r=-.304$ ,  $p=.002$ ), but not with the divergence of CEOs undergraduate studies and company's industry branch ( $r=-.043$ ,  $p=.678$ )

Table 6: Correlations of transformed EBITDA and ROA with Shanghai university ranking and divergence of CEO's education and company's industry branch

	EBITDA <sup>a</sup>		ROA <sup>b</sup>	
	r	p	r	p
Top 500 Shanghai ranking (undergraduate studies) <sup>c</sup>	-.052	.609	-.076	.460
Top 500 Shanghai ranking (master studies) <sup>c</sup>	-.145	.314	.089	.540
Master's degree divergent from undergraduate studies <sup>d, e</sup>	.118	.250	-.007	.945
Undergraduate studies divergent from company's industry branch <sup>d</sup>	.044	.669	.174	.088
Master's degree divergent from company's industry branch <sup>e</sup>	.086	.401	<b>.233</b>	<b>.021</b>

<sup>a</sup> logarithmic transformation

<sup>b</sup> square root transformation

<sup>c</sup> dichotomized as top 500 ranked vs. other universities

<sup>d</sup> dichotomized as diverging vs. similar

<sup>e</sup> dichotomized as diverging vs. similar or no master's degree

Multiple linear regression: The company age and CEO having a master's degree divergent from company's industry branch were then examined as predictors of ROA using a hierarchical stepwise multiple linear regression model (Table 7). The company age was entered in the first step in order to control for its effect on ROA. As expected, based on preliminary correlation analysis, the company age explained a small yet statistically significant portion of ROA variability in our sample ( $R^2=.055$ ,  $F_{(1,95)}=5.573$ ,  $p=.020$ ). After controlling for the variance explained by company age, master's degree divergent from company's industry branch did not statistically significantly contribute to the predictive power of the regression model ( $R^2=.084$ ,  $F_{change(1,94)}=2.948$ ,  $p=.089$ ).

**Does manager's education play a significant role in company's financial performance?**Table 7: Multiple linear regression model predicting company's ROA <sup>a</sup> using company age <sup>a</sup> and divergence between CEOs master's degree and company's industry branch <sup>b</sup>

		Unstandardized Coefficients			Standardized Coefficients	t	p
		B	95.0% Con. Int.		Beta		
Step 1	(Constant)	3.907	3.159	4.655		10.370	.000
	Company age <sup>a</sup>	-.222	-.408	-.035	-.235	<b>-2.361</b>	<b>.020</b>
Step 2	(Constant)	3.601	2.781	4.422		8.714	.000
	Company age <sup>a</sup>	-.171	-.365	.023	-.181	-1.749	.084
	Master's degree divergent from company's industry branch <sup>b</sup>	.422	-.066	.911	.178	1.717	.089

<sup>a</sup> square root transformation<sup>b</sup> dichotomized as diverging vs. similar or no master's degree**4. DISCUSSION**

To what extent a manager's education may be perceived as a proxy of their company's financial results remains equally intriguing and elusive question.

In the first part of our study, we compared frequencies of six undergraduate programs attended by top 100 managers between USA, Canada and Europe and other countries and found no significant differences between these two regions. On the other hand, managers with a master's degree were more prevalent in companies residing in the USA, Canada, or Europe in comparison to those from other regions. This finding was to be expected, since master's degree, especially the Master of Business Administration (MBA) degree represents more than a 100-year-old American management education tradition (Mazza, Sahlin-Andersson, & Strandgaard Pedersen, 2005). Most major European business schools and universities offer MBA programs. Broadly speaking, the expansion of MBA programs could be explained by an overall proliferation in management education in Europe as well as in other parts of the world. Obtaining an MBA was seen as a precursor to senior executive positions (Daniel, 1998). In 2001, the number of MBA programs published in the most relevant international databases was 1600 (Moon, 2002), more than 35% thereof based in Europe (Merlin Falcon MBA Guide, 2001).

We analyzed median EBITDA and ROA across the six fields of undergraduate programs of the respective CEOs and found no statistically significant differences between those six study programs. In a similar vein we analyzed the median EBITDA and ROA across the four fields of master's programs of the respective CEOs and found no statistically significant differences between the four groups of master's degree studies. Our analysis also showed that companies led by CEOs who attended the top 500 Shanghai ranked universities performed not statistically different (represented by ROA and EBITDA) than other top managers from our sample. In addition, the firms whose managers possess a master's degree divergent from their undergraduate studies showed no statistically significant difference in financial performances compared to other companies. Comparable results have companies whose managers finished undergraduate studies divergent from company's industry branch.

In our study the case where CEO's master's degree diverged from their company's industry branch was positively associated with the company's ROA, but not after controlling for company's age. Our analysis revealed a statistically significant negative



correlation between ROA and company age. Although other factors could also have an influence on this relation, we argue that older companies, having been longer in the business, usually possess higher level of asset, which in turn decreases their ROA. Furthermore, the aforementioned divergence was itself negatively correlated with company's age, suggesting that younger companies prefer managers with master's degree diverging from their primary activity for a CEO position. It remains to be elucidated wheatear this relationship reflects a more recent trend in company organizational structure or a preference specific to companies in earlier stages in their life cycle.

Some other studies had received similar results concluding that the educational background of the CEO was not related to company's financial performance. Specifically, Gottesman & Morey (2010) found that companies managed by CEOs with master's degree performed no differently than firms with CEOs who held various types of undergraduate degrees. Similarly, they had shown that firms run by CEOs from highly ranked universities didn't perform significantly better than those run by CEOs from less elite schools. that the time frame between the CEOs completion of the degree(s) and the attainment of the position could be sufficiently lengthy to neutralize specific benefits a CEO received from specific type of education. These authors argued that CEOs of top-rated companies had the opportunity to develop their skills over time and that education per se had little to do with their current performance. Echoing their findings, we also believe that companies such as those on the Fortune Top 100 list represent multifaceted systems, where decision-making processes are dynamically distributed throughout their managerial structures.

On the other hand, a study done by Kong & Zhang (2014) investigated the interacting and feedback effects between human capital and financial performance in Chinese publicly listed firms and showed that a manager's educational level could have a positive effect on the company's operating and market performance. They explained their findings arguing that while a dominant state control could have negative effects to the contribution level of managerial human capital, the powerful large minority shareholders must have a significant positive effect.

A study conducted by Wood & Vilkinas (2007) identified the six CEO's personal traits important for company success: an achievement orientation, a positive outlook, a sense of integrity, inclusiveness and learning, a humanistic approach and self-awareness. Another research from Katsaros, Tsirikas, & Nicolaidis (2015) provided empirical evidence of a positive relationship between CEO's tolerance of ambiguity and firm's performance in Greek information and computer technology industry. Furthermore, the findings indicated the importance of CEO's perceptions, personality traits, emotions, attitudes, and values in the workplace. Another study conducted by Joos, Leone, & Zimmerman (2003) suggests that younger managers are being hired by companies requiring more effort, such as startups and high growth companies. On the other hand, the older CEOs with higher human capital were preferred to manage more complex, larger systems. Research done by Cronqvist, Makhija, & Yonker (2009) found a robust positive relation between CEO's personal and corporate leverage towards debt acquisition when analyzing the way that S&P 1.500 CEOs approach a house purchase.

In order to reach higher position every candidate needs to spend significant time inside the company in order to gain specific knowledge and experiences in many relevant fields. Nonetheless, the CEO's role is more general and goes beyond any specific field a company is operating in. In this context, Koch, Forgues, & Monties (2015) studied Top 100 CEOs of Fortune and concluded that most top managers followed a relatively traditional route, characterized by reduced mobility between companies, focus on development in one industry branch as well as on general management functions, gradually climbing on the company. They concluded that CEO has a very broad role with strong firm and

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## Does manager's education play a significant role in company's financial performance?

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industry connections. Another study of the same group of authors (Forgues, Koch, & Monties, 2017) showed that people who enter into Operations and General Management positions rarely switch back to another more specialized function. They state that progression and increasing responsibilities make individuals move from specialized functions towards more general management activities and that the higher a position in the company person holds, the more likely they are to perform general management duties. This is well in accordance with a study done by Hamori & Kakarika (2009), which showed that an external labor market strategy negatively correlated with success in business. CEOs who have changed their positions more often or spent shorter time in the current company needed more time to be promoted to significant positions.

Top managers in big corporations are mostly obliged to reach consensus with their Managing Boards on almost every important topic. A study conducted by Cheng (2008) emphasized that companies with larger Board of Directors have significantly lower variability in corporate performance. They have concluded that the board size is negatively associated with monthly stock returns variability, level of R&D expenditures, the frequency of acquisition and restructuring activities, but also with the yearly ROA. Adams, Almeida, & Ferreira (2005) argue that managers can influence company's outcomes if they have complete influence over most important decisions (founder status), i.e., that companies with CEOs holding strong decision-making power always suffer from the variability in performances and stock returns. This is mostly the case with companies, who have not yet reached their full potential and where old ways of doing things, mostly introduced by entrepreneur, are "imprinting" the way things are being done now (Mathias, Williams, & Smith, 2015). Having more members in the Board of directors seems to provide stability, as well as inertia on the performance level, since it takes much more effort and different perspectives to reach consensus. Still, some authors like Dalton et al (1998) had argued that neither Board of directors' structure nor leadership had been consistently associated with company's financial performance.

Capon, Farley, & Hoenig (1996) believe that a company's financial performance could not be explained as a result of a single factor, but by an interplay of industry concentration, growth, capital investment, company size and vertical integration, as well as minimum efficient scale, geographic dispersion of production and barriers to entry. Firm size, industry diversification, relative price, consumer vs. industrial sales, inventory, as well as the type of control (owner vs. management) was, on the other hand, reported to have insignificant directional effect on company's financial performance. These authors found that high-performing companies are mostly internationally oriented, invest more in R&D and have a low debt capital structure.

## 5. CONCLUSION

In this study we found that younger companies have significantly higher ROA compared to their older counterparts. Furthermore, CEOs in younger companies tend to have a master's degree diverging from the company's primary industry branch. The positive association of company's financial performance, as measured by ROA, with the CEO's master's degree diverging from their company's industry branch was not significant after controlling for company's age. We conclude that factors other than CEO's education may exert greater influence on company's financial performance.

The findings in this report are subject to at least three limitations. Firstly, the study was acknowledging only formal university degrees as recognizable education levels. This fact is nowadays extremely challenged since there are many alternative education sources which provide valuable materials for learning. Second limitation refers to a short time frame of this study since it basically represents a yearly snapshot of Fortune's top

100 managers list. Finally, our methodology was focusing on variables such as EBITDA and ROA as company's success indicators. Other factors such as investment in research and development and implementations of artificial intelligence could also be long term success promoters in modern companies.

This research has thrown up many questions in need of further investigation. It would be helpful to repeat this study on a regularly basis to track changes and describe trends in managers education as potential promotor of company's success. Another valuable area of future research would be to conduct a similar study focused on successful startup companies and established firms separately, in order to better understand the differences between these two groups. And finally, it would be helpful to introduce alternative measures of company's success in order to properly assess company's long-term stability and profitability.

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