ISCTE Business School
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THE INFLUENCE OF EMPLOYER BRANDING ON A FIRM´S FINANCIAL PERFORMANCE

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Abstract

Within this work, the relationship of employer branding and financial performance is assessed, using the biggest U.S. companies, listed in the S&P 100 index, as data base. The purpose of this research is to provide statistical proof to the theoretical concepts stating the importance of employer branding. First an independent variable representing a company´s employer branding success is constructed by creating a mix score out of two measures of employer branding success: Best employer rankings and social media attention. Next, two dependent variables, both indicating a firm´s financial performance are built. Whereby one measure of financial performance is based on the market risk of the company, evaluated by the Capital Asset Pricing Model and one is based on the industry averages. Two linear regressions are run in order to investigate the variables´ correlation. The findings of both regressions clearly demonstrate a significant positive association between the employer branding success of a company and its financial performance on the market. The explanatory power of the models is relatively weak, which comes with no surprise as financial performance is influenced by a whole universe of factors. However, this paper concludes that even if the portion of variance that can be explained by the models is relatively small, the models still have big implications as small changes in the returns translate into millions and millions worth of capitalization. In the end, the main goal of this work, to present statistical proof that employer branding positively influences the financial performance, is achieved.

Keywords: employer branding, human capital, financial performance, Capital Asset Pricing Model

Classifications of the JEL Classification System: M5 Personnel Economics, L1 Market Structure, Firm Strategy and Market

Resumo

Este trabalho estuda a relação entre a marca de empregador e o desempenho financeiro utilizando a base de dados S&P 100 index que lista as maiores empresas nos EUA. O objetivo é o de facultar evidência estatística dos conceitos teóricos que sustentam a importância da marca de empregador. Em primeiro, mediu-se uma variável independente que representa o sucesso da marca de empregador e que consiste num score compósito de duas medidas de sucesso: os rankings de melhor empregador e a atenção dos media sociais. De seguida, foram calculadas duas variáveis dependentes para medir o desempenho financeiro. Uma tem por base o risco de mercado da organização, avaliada pelo CAPM e a outra tem por base as médias sectoriais. Foram realizadas duas regressões lineares para identificar a associação entre as variáveis. Os resultados das regressões mostram uma associação positiva significativa entre a marca de empregador e o desempenho financeiro no mercado. O poder do modelo é relativamente fraco, o que não é surpreendente considerando a panóplia de fatores em jogo. Contudo, este trabalho conclui que apesar da baixa variância explicada o modelo tem implicações substanciais dado que pequenas mudanças nos resultados se traduzem em milhões de valor capitalizado. No final o principal objetivo deste estudo, testar estatisticamente que o marca de empregador tem valor financeiro, foi atingido.

Palavras-chave: marca de empregador, capital humano, desempenho financeiro, Modelo Avaliação Ativos Financeiros

Códigos JEL: M5, L1

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1. Introduction

Both scholars and practitioners advocate an increased importance in the employer brand of a company. For scholars, the large number of recent researches in this field (Theurer et al., 2018) illustrates this. In practical terms the high expense of firms, in the area of employer branding, speaks for itself. Companies spend millions and millions of dollars in employer branding activities, that aim to build and maintain a strong employer brand. An employer brand targets the internal and external promotion of what makes a firm different to its competitors and desirable as an employer (Lievens, 2007).

The rising relevance of employer branding stems from an increased recognition of human capital, as a source of value for a company (Moroko & Uncles, 2008). In 1998, McKinsey Director Ed Michaels already described employees as the prime source of a firm´s competitive advantage (Fishman, 1998). Over time, this way of thinking become increasingly popular and companies now understand that human capital is the most important corporate resource. Consequently, in order to stay competitive, they see the urgent need and are motivated to implement employer branding strategies, which target this topic (Moroko & Uncles, 2008).

What makes it difficult is the unbalance between the number of qualified workers needed on the market and the number available. This situation is described as a war for talent by several authors (e.g. Fishman, 1998; Ulrich, 2015; Torre & Llorente, 2019). The lack of talents changes the situation on the recruitment market, and what before was a battle between applicants for the best jobs, now is a battle between companies for the best talents (Beechler & Woodward, 2009). Therefore, having a strong employer brand in order to attract potential talents, as well as to motivate and retain valued current employees, is even more important for long-term corporate success.

Nevertheless, what defines whether a company is successful or not? Among the different measures of success, such as for instance, customer satisfaction, performance reviews or sales revenue, in the end of the day, the financial performance is probably the strongest and most relevant measure, as it is the decisive factor deciding whether a company survives or not. Alongside accountancy indicators, financial indicators have the advantage of being mostly objective and reduce measurement error, thus improving forecasting and predictive models (Richard, Devinney, Yip & Johnson, 2009). But until now, although accountancy indicators such as ROA are used (e.g. Biswas & Suar, 2014) there are only very few approaches that link employer branding to financial performance (Carvalho & Areal, 2016). The aim of this work is

to create this connection and examine the relationship between a firm´s employer branding and its financial performance. Does a company with successful employer branding, or in other words, with a successful employer brand show better financial performance? Or is there no relationship statistically ascertainable at all?

2. Literature Review

The following review of literature aims to illustrate existing theories about the two individual constructs "employer branding" and "financial performance", as well as, theories linking both aspects with one another.

2.1 Human capital

Traditionally many economists believed four factors were needed for economic activity to happen. The four factors of production were: Land, Labor, Capital, and Enterprise (OECD, 2019). Earlier, the second factor, labor, was only referred to as *"a mass, [and] provided they were willing and able to do physical work, it didn't really matter very much what they knew or what their abilities were"* (OECD, 2019: 28).

Over the years, the factor of labor, developed a whole new meaning and level of importance in the business world. Nowadays the employees of a company are referred to as human capital, which is defined as: *"an intangible asset or quality not listed on a company's balance sheet. It can be classified as the economic value of a worker's experience and skills"* (Investopedia, 2019: 1). This concept can further aggregate at country level and be used as a global indicator of human work economic value (Caselli & Ciccone, 2019). Assets such as skills, knowledge, training, health, loyalty or education are individual human capital, which aggregated of all workers, build the human capital of a company. This aggregated human capital, and therefore every single worker, forms a very important resource for a company and can lead to a competitive advantage, compared to companies with a lower level of human capital. A company's level of human capital can be improved by being able to attract and employ the right talents that fit to the company, by motivating the employees to show good performances and by giving them reason to feel comfortable and happy to work for the company, in order to increase innovation (Wang & Zatzick, 2019) and prevent turnover and by this to prevent the loss of talent (Boon, Eckardt, Lepak & Boselie, 2018; Kashyap & Verman, 2018). But there is a gap between demand and supply of talented workers, in the sense that there are not enough talents on the recruitment market to cover the needs of all companies. This growing competition for qualified workers is an incentive for companies to get active in order to secure themselves a good position in the war for talent (Fulmer *at al.*, 2003). The business strategy focusing on these kinds of actions, is called employer branding (Fulmer *et al.*, 2003). As summarized by

Moroko and Uncles (2008), employees are the ones upholding a company´s success and the ones who secure and enable ongoing profitability. Thus, it is important for a company to build and remain a high level of human capital and a strong employer brand is a tool to do so.

2.2 Employer branding

Due to its multidisciplinary nature, the term employer branding, in literature, is defined in various ways (Theurer *et al*., 2018). But when comparing them to each other, a strong consensus becomes apparent. All refer to employer branding as a process, which aims to develop a positive, unique and attractive image of a company, the specific employer brand of a company (Tom, 1971; Lievens, 2007; Moroko & Uncles, 2008; Theurer *et al*., 2018). Consequently, employer branding is described as an intersection of brand marketing and human resources management and is an effective marketing tool and an efficient organizational strategy, to support the level of human capital and as a result, to gain competitive advantage (Theurer *et al*., 2018; Saini *et al*., 2014).

Employer branding aims on increasing a company's level of human capital by attracting, retaining and motivating potential talents and recent employees. This means, that the targets of a firm´s employer branding activities are potential, external candidates and internal employees, in the sense of attracting external future talent and motivating and retaining internal talent (Theurer *et al*., 2018).

According to Backhaus and Tikoo (2004), employer branding is a three-step model. The first step in the employer branding process is the creation of an employer brand value proposition, a concept of internal structures, which the organization wants to offer to its employees. In this case, by internal structures, one means, the company´s rules and regulations, as well as norms and values. Components included are for instance: reward strategy, career paths, employee training and team building measures, the corporate social responsibility agenda (Backhaus *et al*., 2002; Güntürkün *et al*., 2012) and most of all the organizational culture. Firms try to design these components in a way appreciated by potential future talents and current employees in order to make the company look attractive and unique to them. By that they are aiming at luring the best potential talents to join the company, creating a favorable every-day work environment for the talents already working there and in the same breath retaining them in the company. Biswas and Suar (2014) reviewed the antecedents of employer branding and found that realistic job expectations, prestige, perceived organizational support and corporate social responsibility

were important players in building employer's brand and that leadership of top management is the strongest predictor. But in order for this to be a successful employer branding activity in the long-term, it is important that the content of these elements is align with the organizational strategy and goal and that the company is convinced to really put them into practice. In other words, if there is no consistency between the employer brand image promises and the actual employment experience, it will not be a successful employer brand, as word will spread and employees or potential applicants loose trust in the company (Moroko & Uncles, 2008). On the contrary, if a company *"fulfills the psychological contract"* (Moroko & Uncle, 2008: 165) and really keeps what the employer brand promises, employees will develop employer brand loyalty and commitment. This leads to an increase in motivation and acceptance of the firm´s goals and values, and therefore to an increase in productivity, as well as to a decrease of voluntary turn over intentions, and secondly it supports the company´s reputation (Backhaus & Tikoo, 2004).

Organizational familiarity is one of the major intentions to apply (Saini *et al*., 2014), functions as an indicator of whether or not job seekers are aware of the firm (Collins & Kanar, 2013) and is a way to create a bond between applicant and firm, which leads to a higher acceptance level of job offers (Lievens & Slaughter, 2016). Organizational familiarity is achieved by being well-known in public. Therefore, as a second step employer branding aims to externally promote the employer brand value proposition, and the firm´s desirable concepts, listed in it, mainly through multiple media channels (Backhaus & Tikoo, 2004; Lievens, 2007). The aim is to attract potential talents outside the company. By increasing the quantity of applications, it is expected to increase the quality as well. This higher quality allows the company to achieve its goal of securing a high level of human capital. But a company´s publicity has another positive consequence, as not only external candidates are attracted by the prominence of a firm, but also talents, already under contract, may feel proud to be part of such a company, which in turn may function as motivational factor (Lievens, 2007).

Additionally, to the external promotion, also the internal promotion of the employer brand is crucial. This is the third step in the employer branding process. By incorporating the promises into the culture and by letting the employees experience the positive elements of the company's employer brand value proposition, they will be motivated to perform well and to remain in the firm (Backhaus & Tikoo, 2004). For instance, employees who feel valued and heard, who like their job tasks and responsibilities, who are satisfied with their career opportunities and salary, and who appreciate the work climate and organizational culture in general, are likely to perform much better and to stay in the firm longer, compared to unsatisfied workers (Lievens, 2007).

Summarized, this means that employer branding tries to increase human capital, by attracting the best potential talents, motivating the current employees to perform good and maintaining them in the company via the design and promotion of a company's favorable aspects. Therefore, successful employer branding activities should concentrate on three main aspects, or in other words a successful employer brand should show the following three criteria: (1) a value proposition containing aspects which are highly regarded by potential future and recent talents and which make the company unique, (2) internal and external visibility, as well as (3) honesty, in terms of keeping the employer brand promises and putting them into action (Moroko & Uncles, 2008).

Employer branding activities are influential on different levels. Thus, there are various factors, which can be used to evaluate whether or not an employer brand is successful. According to Wright et al. (1994) the speed, quality and quantity of application processes and outcomes, the retention or turnover rate, the employee productivity, the social media attention as well as the nomination in best employer rankings are the most important and significant measurements for employer branding success. As most of these data are quite complicated to gather, not all of them could be used in this work, due to a limited frame of time and resources. Therefore, it was decided to concentrate on two very important and expressive measurement criteria, namely, social media attention and best employer rankings (Güntürkün *et al*., 2012).

Digitized economy spread worldwide and across all domains of business and companies are aware and develop strategies to compete in that domain for talent attraction (e.g. Mihalcea, 2017; Küpper, Klein, & Völckner, 2019). As social media engagement nowadays gets more and more important, and as LinkedIn is the most important social media platform regarding business related aspects, in this work social media attention serves as a measure of employer branding success and can be represented by the LinkedIn follower of a company. Due to the fact, that the researched companies register notable differences in headcount, the number of followers is divided by the number of employees, in order to eliminate distortion. The measure of social media attention is linked to the employer branding process step of external visibility, which means, making the employer brand and the company in general visible and familiar to the public. Having a high number of followers in turn indicates that past employer branding activities were successful, and the employer brand is well-known. As discussed previously, this external visibility can lead to an increase in the number of highly qualified applicants and thus is an adequate measure for successful employer branding efforts (Theurer *et al*., 2018). Summarizing it can be stated, that the number of LinkedIn follower functions as an indicator

for external visibility and consequently as a measure for successful employer branding (Theurer *et al*., 2018).

Next, best employer rankings are a measure of benchmarking different leading employers against each other by evaluating multicriteria, mostly by the own employees (Saini *et al*., 2014). Every year different sources conduct best employer studies and publish the rankings, in order to show which companies are evaluated, by their own workers, to be a good employer. Being nominated in these rankings indicates that the employees are happy to work for their respective company and are motivated to perform good, as well as to remain in the company, whereby the aim of employer branding is achieved. This consequently means that the employees are satisfied with the design and implementation of the employer branding value proposition and that the firms ranked on the lists, have performed successful employer branding. Furthermore, best employer rankings are not only a measure of employer branding success but also an employer branding tool. Numerous companies voluntarily participate in these studies, since they recognize them, as an efficient tool to further internally and externally promote the company as a good employer (Saini *et al*., 2014). Employer rankings receive a great amount of media attention (Saini *et al*., 2014) and thus, they efficiently advertise the employers listed in them (Theurer *et al*., 2018). This can positively influence the public, in terms of potential candidates, as well as the employees, already working for the nominated firms. Relating to external promotion, "findings suggest that firms with a consistent or recent listing in best employer surveys receive a significantly higher intention to apply" (Saini *et al*., 2014: 95), as potential talents may be attracted by the good reputation of the company. In terms of internal promotion, the company´s employees may feel proud to work for a company, that managed to be listed as one of the best employers. This may positively affect them regarding their engagement and attachment to the company, due to motivational triggers of these rankings (Saini *et al*., 2014). As we can see, over time the employer branding activities, triggered by the employer rankings, again transform into employer branding success. What means, that by evaluating employer rankings with a time lag, they measure success rather than activity, and are therefore an adequate measure of employer branding success.

2.3 Employer branding and performance

As demonstrated above, successful employer branding leads to a higher level of human capital in a company, by increasing the number of high-quality applications, as well as by motivating employees to perform better and to remain in the firm. More talented and more motivated employees, in turn, increase the efficiency and productivity of a company, which finally should result in a better performance. Whereas, performance is referred to as financial performance, as it is the most important measure of company success. Additionally, a strong employer brand, does not only influence its main targets, internal employees and external potential candidates, but also has positive word-of-mouth spillover effects on customers and the general public, as employer brand and consumer or product brand are related to each other (Moroko & Uncles, 2008). These spillover effects may again lead the firm to a better financial performance through for instance, greater premiums and lower price elasticity (Theurer *et al*., 2018).

Consequently, it is reasonable to infer that employer branding and a firm´s financial performance positively correlated to each other (Fishman 1998; Fulmer *et al*., 2003; Backhaus & Tikoo, 2004; Lievens, 2007; Saini *et al.*, 2014). However, as there is only scarce research connecting the two variables, the aim of this work is to statistically test whether or not this positive correlation really exists.

2.4 Financial performance

This chapter focuses on explaining, how a company´s financial performance is measured within this research. According to Theurer *et al*. (2018) stock prices can function as indicators for financial performance and are an adequate tool to measure the success of employer branding. Stock prices show the current price of the companies' stocks on the stock market, at one point in time. This research does not simply use the stock prices, but rather the companies´ returns, as returns reflect the development of stock prices within a certain time frame, usually one year, and thus deliver more accurate numbers, in order to evaluate firm´s financial performance (Fulmer *et al*., 2003). But due to the various business models of the companies a comparison of returns alone would still deliver inaccurate and biased information about a firm's quality of financial performance. Therefore, two more comparable measurements of financial performance, which are built on returns, are used within this research and will be explained in the following.

2.4.1 CAPM

The Capital Asset Pricing Model (CAPM) was introduced by William F. Sharpe in 1964 and was built on Harry Markowitz´s earlier findings of diversification and modern portfolio theory. The Capital Asset Pricing model describes the relationship between systematic risk and expected return for assets, particularly stocks (Jagerson, 2018). This means that according to the CAPM, the risk profile of each company ($\beta\ of\ CAPM$) can be assessed, by measuring the business risk of a company (the co-movements of each stock, of the company, with the market) based on the covariance with the overall market. For example, a company with high covariance in its returns is assessed, by the model, to have a higher business risk, compared to a company with lower covariance in its returns. The alpha of the CAPM (α) then shows the difference between the, by the model, expected return of the company and the actual realized return of this company, and thus is used as proxy for how well a company is financially performing. By using this model, the financial performance of companies becomes comparable, since it is adjusted for their different risk levels (Sharpe, 1964). An easy decision rule is introduced via the alpha, as positive alphas signal financial overperformance and negative alphas signal financial underperformance. Since its introduction many additions and critics to the CAPM have been published. One argument is that the CAPM oversimplifies (Fama & French, 2004) and other factors, like the size of a company, seem to have some effect on the financial performance of a company as well (Banz, 1961). However, the CAPM remains a highly recognized concept (Rossi, 2016) and the most important approach to make companies' returns more comparable and therefore, is used in this research. But to not be blindsided by the imperfections of the model another approach, of measuring financial performance, is introduced and will function as a safeguarding of the results.

2.4.2 Industry averages

The second variable to indicate the financial performance of a company, is based on the industry average approach. The companies in the used sample do not all operate in the same industry and thus, have quite different industry specific factors that influence their returns. To account for these different conditions the returns of the companies are only compared to returns realized by other companies within the same industry. As a result, industry specific influences on returns are extinguished and more meaningful comparisons can be drawn. Even though it may be

obvious that this approach has its imperfections, since there are also differences within one industry, it offers a straight forward idea on how to take care of at least a main part of the discrepancies. At the end, the industry averages are solid enough to work nicely as a review variable for the CAPM.

3. Method

This dissertation has a quantitative-deductive research approach, with a cross-sectional correlation design. The methodology of the work is explained in the following.

3.1 Data

As mentioned above, this study uses secondary, quantitative data, which is adequate for the research question, as there exists already enough relevant data, that can be used for further investigation and related with the specific research objective. In order to later construct the variables, data has been obtained from three different sources, namely, Bloomberg, LinkedIn and several employer ranking publications.

In the following, all data obtained within the course of this research, will be illustrated and explained in detail.

Members of the S&P 100 Index: The "S&P 100 Index" is a stock market index, containing the 100 leading stocks from the United States. The respective companies of these stocks tend to be the 100 largest and most established companies in America. These 100 American companies serve as research object, for this study and will be investigated regarding their employer branding strategy and their financial performance on the market. The relevant company data is obtained from Bloomberg, since the data base offers all kind of information about the companies included in the S&P 100 index. As a first step at the 31st of July 2017 all members of the S&P 100 Index are identified. The decision timing is chosen one month before the observation period of the financial performance begins. These members are then classified as the relevant companies for this research and work as the data base for the research question.

Last prices S&P 100: To be able to calculate the annual returns realized by each company of the S&P 100, the last traded stock prices of the months August 2017 and August 2018 are obtained using Bloomberg.

Industries: Additionally, for each of the 100 companies, the respective industry sector the company belongs to, is extracted from Bloomberg. In total, the 100 companies, are spread over eleven different industry sectors: Industrials, Health Care, Information Technology, Financials, Communication Service, Consumer Staples, Consumer Discretionary, Energy, Utilities, Materials and Real Estate.

Members of the S&P global 1200 Index: Analog to the index explained above, the "S&P global 1200 Index" is a free-float weighted stock market index, with the difference that this index does not only contain the 100 leading stocks in the United states, but rather the 1200 biggest companies in the world. Whereas world, in this case means 31 countries, which cover around 71% of the global stock market capitalization. For this research, the S&P global 1200 index serves as an approximation for the global market. The members of the S&P global 1200 Index are obtained from Bloomberg. The relevant decision date is again the 31st of July 2017, right before the observation period begins.

Last prices S&P global 1200: Analog to above the last traded stock prices for each member of the S&P global 1200 index are identified for the months August 2017 and August 2018, in order to be able to calculate the annual returns realized by each company.

Risk free rate: Due to the fact, that a global risk-free rate is only a conceptual thought but cannot be found in praxis, the risk-free rate of the United States (U.S.) (short-term government bonds) is used as a proxy. This approximation is not perfect, but solid enough especially when considering that the U.S. market is the most relevant one for the used sample. The risk-free rate is retrieved from Bloomberg as well.

Number of employees: Using Bloomberg the number of employees for each of the S&P 100 members is obtained as of August 2018.

Number of LinkedIn followers: To identify employer related social media attention LinkedIn as the biggest business and employment related social media platform, serves as an appropriate data source. Retrieved is the number of followers each of the 100 relevant companies has on LinkedIn as of August 2018.

Best employer rankings: Lastly, several "Best employer rankings" or also called "Best places to work for rankings" of the United States are examined regarding the number of nominations of the researched companies. As already described in the literature part, best employer studies are an important measure of successful employer branding and therefore are a solid proxy for the attractivity of the company as an employer. Five rankings, classified as the most popular and highly regarded ones, are chosen for this research. Namely, the Business Insider´s "The 50 best companies to work for in America", the Glassdoor ranking of "Best places to work for – 2016 Employees' choice", CNBC´s "The 25 best companies to work for in America", Indeed´s "The 50 best companies to work for in America 2016" and finally, Forbes´ "10 best places to work in America 2016". All rankings considered are from the year 2016. The data is lagged, as

the financial performance will only change in the future, if needed talent is recruited in the presence. For this research a time lag of one and a half to two years seems reasonable to see a first effect of the employer rankings on the financial performance.

3.2 Variable constructions

By the help of the gathered data, explained in 3.1, the following variables were built.

3.2.1 Employer branding

The purpose of the employer branding variable (SPSS: Employer_branding), is to represent a company´s employer branding success. As mentioned above, the component employer rankings score does measure both employer branding success but also employer branding activity. But the introduced time lag converts the employer branding activity into employer branding success well enough to use the variable for an employer branding success proxy alone. Employer_branding serves as the independent variable, or also called predictor variable, of this research. The final goal is to examine the variables influence on the financial performance of a company. In order to construct the variable Employer_branding, various intermediate steps are necessary.

First, an employer ranking score ($C_{employer\ rankings}$) is built, by counting, in how many of the five "Best employer rankings of 2016" the S&P 100 members are ranked. This means that the resulting score for each firm can lay between 0 (mentioned in none of the five rankings) to 5 (mentioned in all of the five rankings), whereas 0 mentions indicate a very low employer branding success, caused by low employer branding activity and or low efficiency of the employer branding efforts, and 5 standing for a very successful employer branding of the respective company.

$$C_{employer\ rankings} = \#\ of\ nominations\ in\ employer\ rankings \qquad (1)$$

Second, a social media attention score ($C_{social\ media\ attention}$) is created, as a second measure of employer branding success, by obtaining the number of LinkedIn followers of August 2018, for each of the 100 companies. As we assume, that more or less all employees of a company do follow their employer on LinkedIn, each follower number is divided by the number of workers,

the respective company employs. This needs to be done, in order to prevent potential distortions tracked back to the different company sizes.

$$C_{social\ media\ attention} = \frac{\#\ LinkedIn\ follower}{\#\ employees} \qquad (2)$$

The results yield scores between 0.43 and 123.22. In order to not vanish the other variable in the final mix score a standardization is executed. Additionally, to avoid negative scoring introduced by the standardization process a constant of two and a half is added to the equation. The standardization of the score ($Z_{social\ media\ attention}$) is done as shown in the following.

$$Z_{social\ media\ attention} = \frac{x-\mu}{\sigma} + 2.5 \qquad (3)$$

After the standardization we retain values between 1.78 and 7.19.

Finally, both scores, namely, the employer ranking score and the social media attention score are used to design a mix score ($Employer\_branding$), which combines both scores in one. By the accumulation of the two different scores, a more meaningful and significant one compared to the individual ones is achieved. This in turn means, that the mix score indicates the employer branding success of a company more comprehensive and precise. Therefore, this mix score is an adequate score to build the independent variable of this research, "Employer_branding". When building the mix score, the employer ranking score and the social media attention score are both weighted with 50%, as literature may lead one to the assumption, that both are equally important indicators for the employer branding success of a company, or at least there is no theory proving the contrary.

$$Employer\_branding = 0.5 * C_{employer\ rankings} + 0.5 * C_{social\ media\ attention} \qquad (4)$$

3.2.2 Financial performance

This research aims to investigate the relationship of the above explained independent variable Employer_branding and the financial performance of a company. Therefore, financial performance is defined as the dependent variable, also referred to as outcome variable. Due to different business models and other factors, the financial performance of companies is quite though to compare with each other. The two approaches used within this research tempt to make the financial performance more comparable. But since both concepts still are imperfect, the two concepts are used in separate regressions to control for these imperfections of each other and as a result, lead to more meaningful findings. However, the correlation of these concepts is a

first positive sign, as it shows that the two variables Alpha_CAPM and Alpha_industry_averages have similar results. The construction of both variables is explained in the following.

3.2.2.1 Alpha of CAPM

In order to create the dependent variable Alpha_CAPM, the annual returns (r_i) from August 2017 to August 2018 are calculated for each constituent of the S&P 100 index. This is done using the last stock prices ($l_{x,t,i}$) of the respective months.

$$r_i = \frac{l_{x,2018,i} - l_{x,2017,i}}{l_{x,2017,i}} \qquad (5)$$

After calculating the returns, we introduce the "Capital Asset Pricing Model", as defined in the literature review, in order to get an idea of the risk adjusted performance of each company. A true market portfolio is not available, as it would contain all traded stocks of the universe. Therefore, the "S&P global 1200 Index" is used as an approximation of the market portfolio. The market return (r_m) is calculated in two steps: First, the returns (r_i) for each member of the S&P global 1200, are calculated analog to the method explained earlier. Second, the average of the returns of all these 1200 stocks, is identified. This average represents the market return.

$$r_m = \frac{1}{1200} * \Sigma_1^{1200} r_i \qquad (6)$$

As a next step, the market risk premium (p_m) is built by subtracting the risk-free rate (r_f) from the market return (r_m). Whereas the risk-free rate is obtained by the U.S. risk-free rate, as a global risk-free rate is not available and due to the fact, that the U.S. are the biggest market and the most relevant market for this research.

$$p_m = r_m - r_f \qquad (7)$$

Other needed fractions of the CAPM equation are the betas (β_i) of the stocks which are constructed by dividing the covariance of the returns of respective stock (i) with the market portfolio's returns (S&P global 1200) by the variance of the market portfolio returns. Both calculated over a five years window. Betas then show the co-movements of each stock with the market and built our measure of risk.

$$\beta_i = \frac{cov(r_i, r_m)}{var(r_m)} \quad (8)$$

Next, the forecasted return (ER_i) for each stock /each of the 100 companies, is received, by the CAPM formula.

$$ER_i = \beta_i(r_m - r_f) + r_f \quad (9)$$

Finally, the alpha ($\alpha_{i,CAPM}$) of the CAPM, for each company, is obtained by subtracting the forecasted return (ER_i) from the actual return (r_i). Alpha indicates the difference between the actual return of a company and the expected return, based on the Capital Asset Pricing Model.

$$\alpha_{i,CAPM} = r_i - ER_i \quad (10)$$

$$\alpha_{i,CAPM} > 0 \ \ the\ company\ is\ overperforming\ the\ market$$

$$\alpha_{i,CAPM} < 0 \ \ the\ company\ is\ underperforming\ the\ market$$

The alphas of each stock are now used as a proxy for how well a company is financially performing. They build the dependent variable "Alpha_CAPM", whose relation to the independent variable "Employer_branding" can now be examined.

3.2.2.2 Alpha of industry averages

In order to create the dependent variable Alpha_industry_averages, as a first step, the 100 companies must be grouped regarding the industry they belong to. This grouping is done based on the industry sectors defined in Bloomberg.

$$ind =$$

$$\{Industrials, Health\ Care, Information\ Technology, Financials, Communication\ Service,$$

$$Consumer\ Staples, Consumer\ Discretionary, Energy, Utilities, Materials, Real\ Estate\}$$

(11)

As a second step, the average returns for each of these eleven industries is calculated ($r_{ind.av}$).

$$r_{ind.av} = \frac{1}{n} \sum r_{i,ind.} \quad (12)$$

Next, in order to obtain alpha ($\alpha_{i,ind.av.}$) , which indicates the abnormal return of a company, or in other words the difference between a firm´s actual return and the average return of the

respective industry, the average return of the particular industry ($r_{ind.av.}$) is subtracted from the return (r_i) of the company.

$$\alpha_{i,ind.av.} = r_i - r_{ind.av.} \qquad (13)$$

$$\alpha_{i,ind.av.} > 0 \;\; the\ company\ is\ overperforming\ the\ industry$$

$$\alpha_{i,ind.av.} < 0 \;\; the\ company\ is\ underperforming\ the\ industry$$

The alphas of each stock are now used as a proxy for how well a company is financially performing. They build the dependent variable "Alpha_industry_averages**"**, whose relation to the independent variable "Employer_branding" can now be examined.

3.3 Regression Analysis

To test the hypotheses, two simple linear regression analyses are run, one for each dependent variable. The first regression is between the independent variable "Employer_branding" and dependent variable "Alpha_CAPM", whereas the second regression has the same independent variable, but a different dependent variable, namely "Alpha_industry_averages". As already explained in 3.3.2, the two measurements of financial performance (α CAPM and α industry) are correlated with each other, but we still decided to not combine them to one variable, but rather keep them as the two separate variables, stated above. Reason for this decision is that having two separate dependent variables, means being able to run two simple linear regressions, which is very helpful as the second variable serves as a backup variable or review variable, in order to control for imperfections in both models. Thus, the advantage of running two separate simple linear regressions is that thereby it can be checked whether or not the regressions come to the same conclusion. This gives a higher information value to the findings. The general equation of a simple linear regression is as follows.

$$Y = \alpha + \beta * X + \varepsilon \qquad (14)$$

Y stands for the dependent variable, in this work either Alpha_CAPM or Alpha_industry_averages. X represents the independent variable, Employer_branding. α is the constant or in other words the value of Y when X is zero. β indicates the slope of the line and finally ε represents the disturbance or random error and is defined as the random component of the equation, whereas $\alpha + \beta * X$, is the deterministic component.

However, before running a simple linear regression, six assumptions must be tested for each regression. By this the validity of the model for the respective data set is tested, in order to prevent statistical interferences. Only if all assumptions are verified, a simple linear regression can be run. Whether or not this is the case will be tested in the following section.

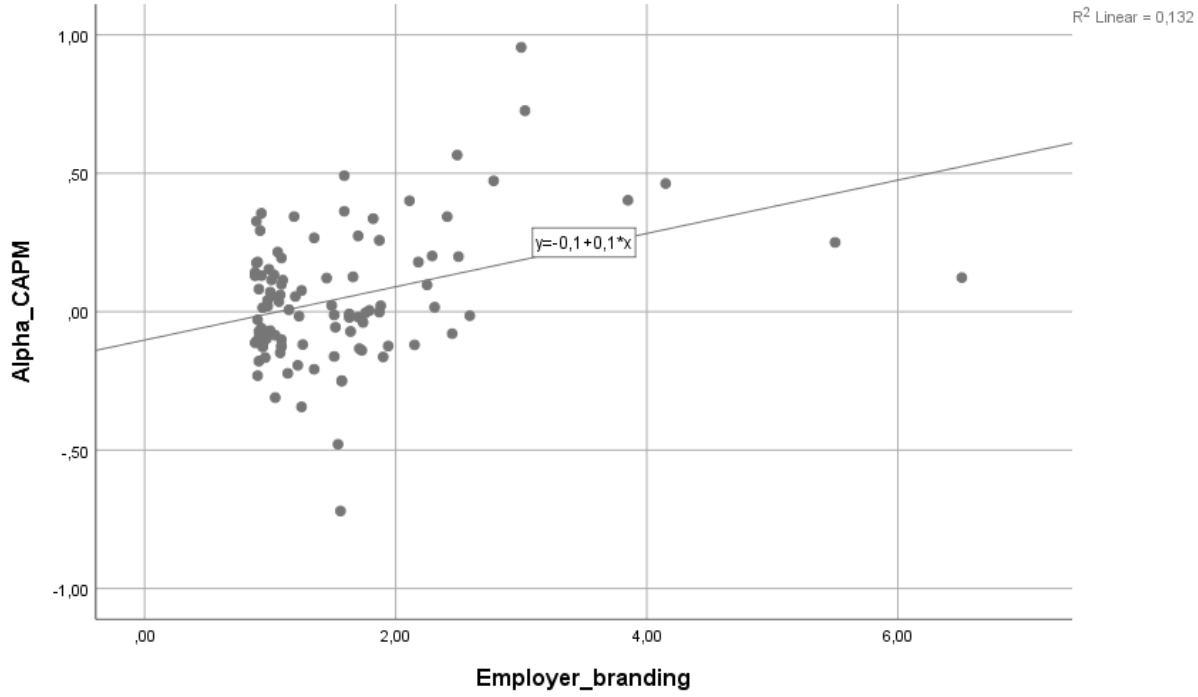
Beforehand, because regression analyses are used, one must consider the role outliers play. The scatterplot shows some companies are very detached from the overall and could be outliers. A box plot test, that shows all cases which are two or three standard deviations away from the mean, identifies three companies as outliers concerning employer branding. Namely, Alphabet, Facebook and Microsoft. After recognizing this issue several tests were made in order to decide how to handle this topic.

By excluding the outliers, which means removing the three companies from the data set the beta increases substantially. This means that the explained variance would increase as well, which would improve this research through stronger results. By this it also got clear that we do not face the problem of a type 1 error, what would mean showing significant correlation when there is none. Actually, the fact that we still end up with a significant positive correlation, although the outliers diminish true effects and work against the hypothesis, helps sustaining the robustness of the results.

It was decided to not exclude the three companies from the data set, as for completeness sake it is important to work with all data. Alphabet, Facebook and Microsoft are amongst the most important global players and simply removing them would lead to a significant loss in the representativeness of the results.

3.3.1 Validation of simple linear regression - CAPM

1. Linearity of the relationship between variables



The Scatterplot demonstrates, that the linear relationship between the variables is properly specified and has a random component. Therefore, assumption one is verified.

Theoretical model:

$$Alpha\_CAPM = \alpha + \beta * Employer\_branding + \varepsilon \qquad (15)$$

2. The mean of the residuals is constant

Residuals Statistics[a]

	Minimum	*Maximum*	*Mean*	*Std. Dev.*	*N*
Predicted Value	-.0177	.5246	.0488	.08745	100
Residual	-.76783	.76851	**.00000**	.22400	100
Std. Predicted Value	-.760	5.441	.000	1.000	100
Std. Residual	-3.411	3.414	.000	.995	100

a. Dependent Variable: Alpha_CAPM

The mean of the residual is 0. When we include the constant in the model, this assumption is verified.

$$E(\varepsilon) = 0 \quad (16)$$

3. The independent variable is not correlated with the residuals

Correlations

		Employer_branding	*Unstand. Resid.*
Employer_branding	*Pearson Correlation*	1	**.000**
	Sig. (2-tailed)	-	1.000
	N	100	100
Unstandardized Residual	*Pearson Correlation*	**.000**	1
	Sig. (2-tailed)	1.000	-
	N	100	100

Pearson's Correlation Coefficient has the value 0.000, which indicates that the independent variable "Employer_branding" is not correlated with the residuals. This means, that there is no linear relationship between "Employer_branding" and the residuals and therefore, the estimate of the regression coefficient for "Employer_branding" will be unbiased. By this, assumption three is verified.

4. No correlation among the residuals

Model Summary

Model	*R*	*R Square*	*Adjusted R Square*	*Std. Error of the Estimate*	*Durbin-Watson*
1	.364	.132	.123	.22514	**1.923**

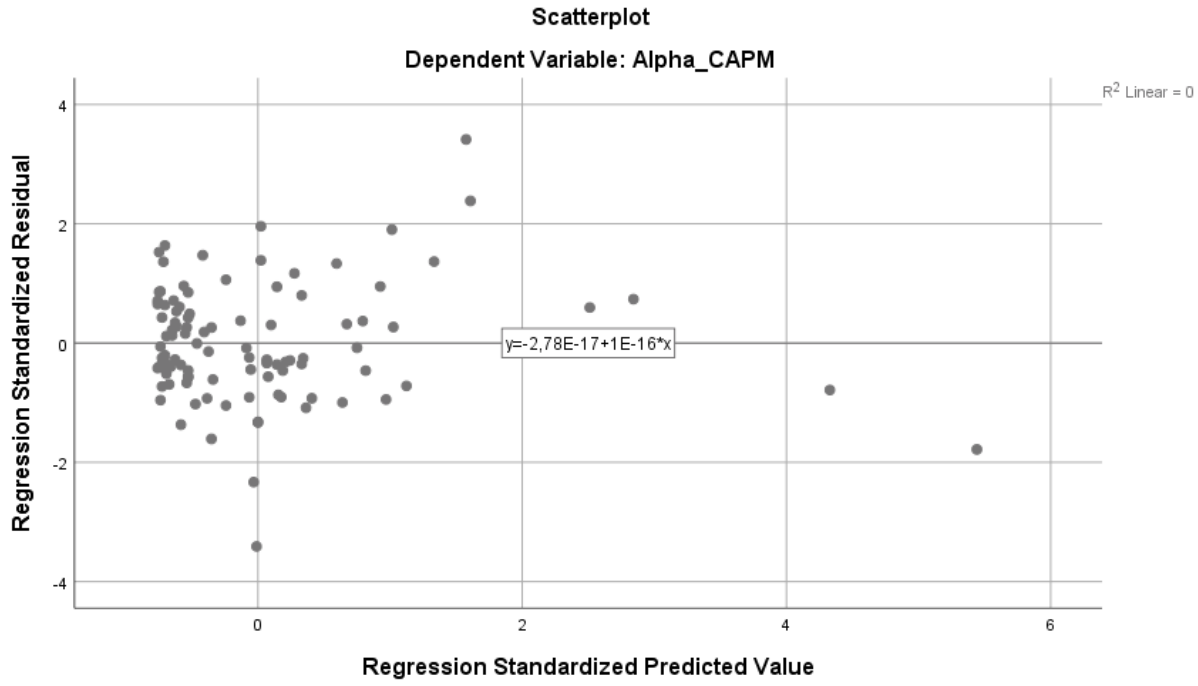
a. Predictors: (Constant), Employer_branding

b. Dependent Variable: Alpha_CAPM

The Durbin Watson test is a measure of autocorrelation in residuals. By analyzing its test result, we can check whether or not the residuals are independent from each other. Nonindependence of residuals is problematic, as it affects the standard errors, what leads to underestimates of the standard error. This in turn may cause us to think independent variables are significant, when they are not. The independence of residuals can be assumed when the Durbin-Watson test value

is between 1.5 and 2.5. As in this case the value lies by 1.923, independence among the residuals can be assumed and thus, assumption four is verified.

5. Homoscedasticity: The variance of the residuals is constant



Assumption number five tests if the variance of the residuals is constant, in order to prevent incorrect significance tests. Variance homogeneity is given, if the residuals are approximately randomly distributed at the same distance from the zero line. As this is the case in this Scatterplot, the assumption of Homoscedasticity can be verified.

6. Normality of residuals

Tests of Normality

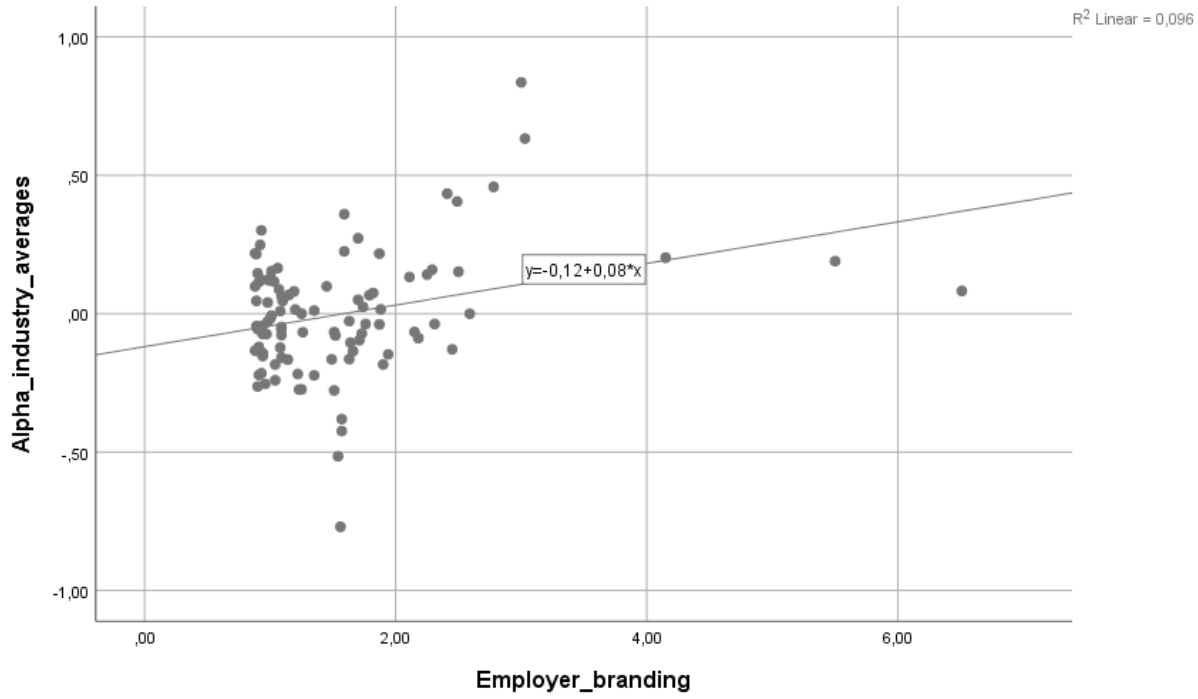
	Kolmogorov-Smirnov[a]			*Shapiro-Wilk*		
	Statistic	*df*	*Sig.*	*Statistic*	*df*	*Sig.*
Unstandardized Residual	.087	100	.062	.975	100	.054
Standardized Residual	.087	100	**.062**	.975	100	.054

a. Lilliefors Significance Correction

Finally, it is important to test, the normal distribution of residuals. As we have a sample size of n=100, for this the appropriate test to use is the Kolmogorov-Smirnov test, which is used for sample sizes with n>=50. By comparing the Sig to the α, it is decided whether H0 can be assumed or not, whereas H0 implies a normal distribution of residuals and H1 would indicate, that the residuals are not normally distributed. As our test value Sig is 0.062, which is bigger than α with 0.05, we can keep the H0 and therefore verify the assumption.

3.3.2 Validation of simple linear regression – Industry averages

1. Linearity of the relationship between variables



The Scatterplot demonstrates, that the linear relationship between the variables is properly specified and has a random component. Therefore, assumption one is verified.

Theoretical model:

$$Alpha\_industry\_averages = \alpha + \beta * Employer\_branding + \varepsilon \quad (17)$$

2. The mean of the residuals is constant

Residuals Statistics[a]

	Minimum	*Maximum*	*Mean*	*Std. Dev.*	*N*
Predicted Value	-.0530	.3701	-.0012	.06824	100
Residual	-.76807	.72946	**.00000**	.20986	100
Std. Predicted Value	-.760	5.441	.000	1.000	100
Std. Residual	-3.641	3.458	.000	.995	100

a. Dependent Variable: Alpha_industry_averages

The mean of the residual is 0. When we include the constant in the model, this assumption is verified.

$$E(\varepsilon_1) = 0 \qquad (18)$$

3. The independent variable is not correlated with the residuals

Correlations

		Employer_branding	*Unstand. Resid.*
Employer_branding	*Pearson Correlation*	1	.000
	Sig. (2-tailed)	-	1.000
	N	100	100
Unstandardized Residual	*Pearson Correlation*	.000	1
	Sig. (2-tailed)	1.000	-
	N	100	100

Pearson's Correlation Coefficient has the value 0.000, which indicates that the independent variable "Employer_branding" is not correlated with the residuals. This means, that there is no linear relationship between "Employer_branding" and the residuals and therefore, the estimate of the regression coefficient for "Employer_branding" will be unbiased. By this assumption three is verified.

4. No correlation among the residuals

Model Summary

Model	*R*	*R Square*	*Adjusted R Square*	*Std. Error of the Estimate*	*Durbin-Watson*

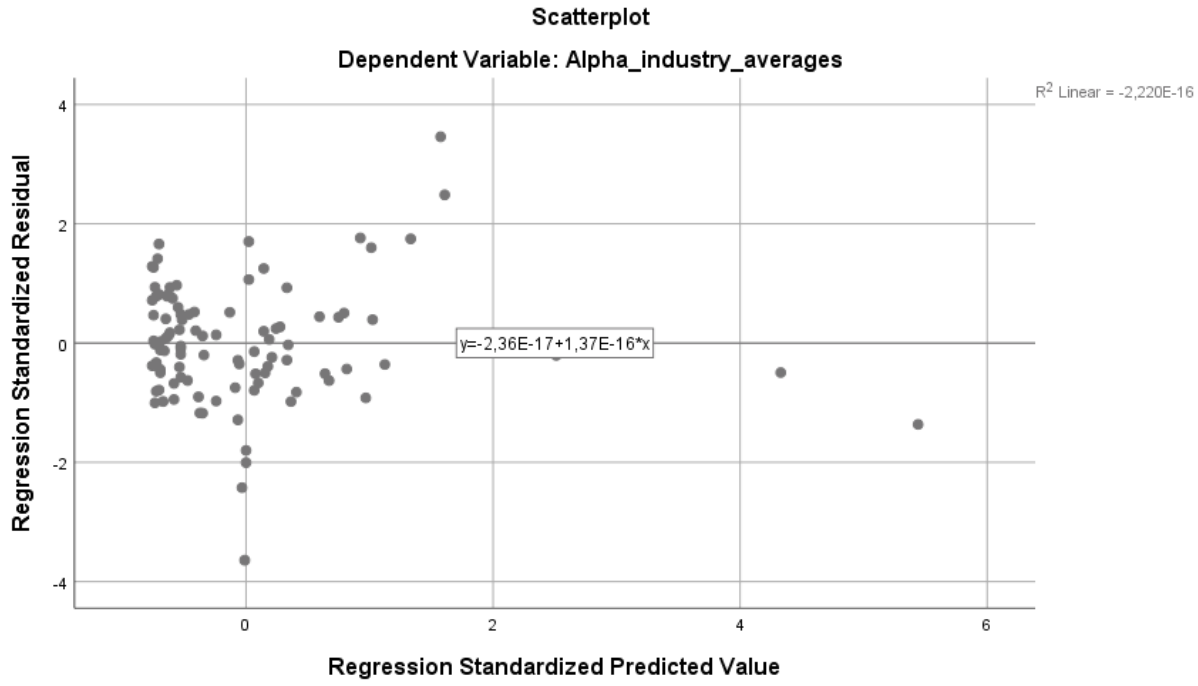
1	.309	.096	.086	.21093	**1.731**

a. Predictors: (Constant), Employer_branding

b. Dependent Variable: Alpha_industry_averages

The Durbin Watson test is a measure of autocorrelation in residuals. By analyzing its test result, we can check whether or not the residuals are independent from each other. Nonindependence of residuals is problematic, as it affects the standard errors, what leads to underestimates of the standard error. This in turn may cause us to think independent variables are significant, when they are not. The independence of residuals can be assumed when the Durbin-Watson test value is between 1.5 and 2.5. As in this case the value lies by 1.731, independence among the residuals can be assumed and thus, assumption four can be verified.

5. Homoscedasticity: The variance of the residuals is constant



Assumption number five tests if the variance of the residuals is constant, in order to prevent incorrect significance tests. Variance homogeneity is given, if the residuals are approximately randomly distributed at the same distance from the zero line. As this is the case in this Scatterplot, the assumption of Homoscedasticity is verified.

6. Normality of residuals

Tests of Normality

	Kolmogorov-Smirnov[a]			*Shapiro-Wilk*		
	Statistic	*df*	*Sig.*	*Statistic*	*df*	*Sig.*
Unstandardized Residual	.077	100	.154	.968	100	.016
Standardized Residual	.077	100	**.154**	.968	100	.016

a. Lilliefors Significance Correction

Finally, it is important to test, the normal distribution of residuals. As we have a sample size of n=100, for this the appropriate test to use is the Kolmogorov-Smirnov test, which is used for sample sizes with n>=50. By comparing the Sig to the α, it is decided whether H0 can be assumed or not, whereas H0 implies a normal distribution of residuals and H1 would indicate, that the residuals are not normally distributed. As our test value Sig is 0.154, which is bigger than α with 0.05, we can keep the H0 and therefore verify the assumption.

Subsequently, it can be concluded, that all six assumptions for both simple linear regressions could be verified. This indicates the absence of statistical interference and the validity of the model. Therefore, the simple linear regressions can be executed without problems and their results can be used for further interpretation. In the following chapter "Results", both regressions will be presented and analyzed, in a neutral way. Later, in the "Conclusion" section, they will be further interpreted and discusses in relation to the research question.

3.4 Hypotheses

Hypotheses define the statements, which are to be tested, in order to answer the research question. In the following the specific Hypotheses, investigating the relationship of employer branding ("Employer_branding") and financial performance ("Alpha_CAPM", "Alpha_industry_averages"), will be stated.

Regression – CAPM:

H0= The financial performance of a company, in terms of the difference between the actual return and the expected return (α of CAPM), is not affected by the company´s employer branding

H1= The financial performance of a company, in terms of the difference between the actual return and the expected return of a company (α of CAPM), is positively associated with the company's employer branding

Regression – Industry averages:

H0= The financial performance of a company, in terms of the difference between a company´s return and the average return of the respective industry (alpha of industry averages), is not affected by the company's employer branding

H1= The financial performance of a company, in terms of the difference between a company´s return and the average return of the respective industry (alpha of industry averages), is positively associated with the company's employer branding.

4. Results

In this chapter the SPSS results are shown and neutrally described. Chapter 4.1 presents some descriptive statistics, in order to give an overview over the three variables of this research. Chapter 4.2 presents the results of the simple linear regressions.

4.1 Descriptive statistics

The table of descriptive statistics of the three variables relevant for this research, namely, the independent variable "Employer_branding", and the two dependent variables "Alpha_CAPM" and "Alpha_industry_averages", can be found in the Annex (Table 1: Descriptive statistics of the three variables).

4.2 Results of the simple linear regressions

In the following, the SPPS outputs of the simple linear regressions are demonstrated. As already described in the Method chapter, in this research two simple linear regressions are executed. The first regression examines the relationship of the independent variable "Employer_branding" and the dependent variable "Alpha_CAPM" and the second regression investigates the relation between the independent variable "Employer_branding" and the dependent variable "Alpha_industry_averages".

For each regression the same structure is followed. First, the correlation and directionality of the data is tested and second, the simple linear regression model is estimated by the Ordinary Least Square Method.

4.2.1 Simple linear regression - CAPM

4.2.1.1 Analyzing the correlation and directionality of the data

Correlation Matrix:

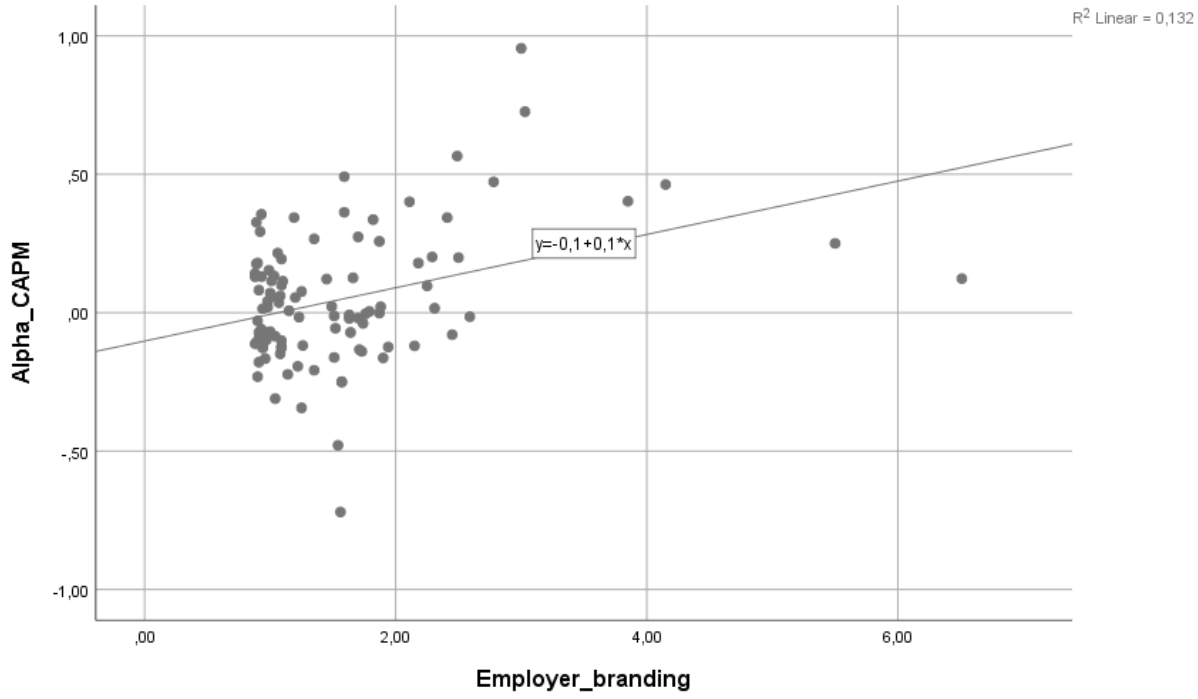
Correlations

		Alpha_CAPM	*Employer_branding*
Alpha_CAPM	*Pearson Correlation*	1	**.364****
	Sig. (2-tailed)	-	.000
	N	100	100
Employer_branding	*Pearson Correlation*	**.364****	1
	Sig. (2-tailed)	.000	-
	N	100	100

***. Correlation is significant at the 0.01 level (2-tailed).*

By the analysis of Pearson´s Correlation Coefficient ($r_{x,y}$), the strength and directionality of the linear association between the two quantitative variables of this regression, namely, the independent variable "Employer_branding" and the dependent variable "Alpha_CAPM" is examined. Whereby the value 1 indicates a very strong positive linear correlation, -1 describes a very strong negative correlation and 0 states, that there is no linear correlation between the two variables and therefore it would not be useful to run a linear regression. When correlating "Employer_branding" and "Alpha_CAPM", the result $r_{x,y}$= 0.364**, indicates a significant moderate positive correlation between the two variables. The two stars show, that the association would be significant even at a 99% confidence interval.

Scatterplot:



The scatterplot supports the findings of the correlation matrix and shows a weak to moderate positive linear association between the two variables.

4.2.1.2 Estimating the simple linear regression by the OLS Method

Variables Entered/Removed[a]

Model	*Variables Entered*	*Variables Removed*	*Method*
1	Employer_branding[b]	.	Enter

a. Dependent Variable: Alpha_CAPM

b. All requested variables entered.

The equation of this simple linear regression is as follows:

$$Alpha\_CAPM = \alpha + \beta * Employer\_branding + \varepsilon \qquad (19)$$

Model goodness of fit:

Model Summary[b]

Model	*R*	*R Square*	*Adjusted R Square*	*Std. Error of the Estimate*	*Durbin-Watson*
1	.364[a]	**.132**	.123	.22514	1.923

a. Predictors: (Constant), Employer_branding

b. Dependent Variable: Alpha_CAPM

The Determination Coefficient (R^2), represents the proportion of variation in the Y variable that is explained by the estimated regression line, or in other words, expresses the confidence placed on the regression equation as a forecasting tool. In this case the R^2 has a value of 0.132. This means that the model has a relatively weak goodness of fit, as only 13.2% of the variance of the dependent variable "Alpha_CAPM" can be explained by the independent variable "Employer_branding".

Model Validity:

ANOVA[a]

Model		*Sum of Squares*	*df*	*Mean Square*	*F*	*Sig.*
1	*Regression*	.757	1	.757	14.936	**.000[b]**
	Residual	4.967	98	.051		
	Total	5.724	99			

a. Dependent Variable: Alpha_CAPM

b. Predictors: (Constant), Employer_branding

To check the validity of the model and to check whether the regression model significantly predicts the dependent variable or not, an ANOVA is run. In the case of this data set there is only one regression coefficient (β), which represents the regression model, namely the independent variable "Employer_branding" and as it is a simple linear regression, there is only one dependent variable tested here, namely "Alpha_CAPM".

In order to test the validity of the model, following hypotheses are phrased:

H0= β =0

(There is no regression coefficient, that is significantly different from zero and thus, the independent variable does not help to explain the dependent variable)

H1= $\beta \neq 0$

(There is at least one regression coefficient, that is significantly different from zero and thus, helps to explain the dependent variable)

The following results are obtained:

14.936 (99) = 0.001

Sig. (0.001) < α (0.05)

The value of the test statistic (F) is 14.936, the degrees of freedom (df) are 99 and the p-value (Sig.) is 0.001. As the p-value (Sig.) is smaller than the confidence interval (α), the H0 can be rejected and H1 is assumed, what in turn means that there exists at least one coefficient that is significantly different from zero and thus helps to explain the dependent variable. Translated to this data set is means that the independent variable "Employer_branding" helps to explain the dependent variable "Alpha_CAPM" and that consequently the model is valid.

Explanatory capacity of the independent variable:

Coefficients

Model		*Unstandardized Coefficients*		*Standardized Coefficient*	*t*	*Sig.*
		B	Std. Error			
1	*(Constant)*	**-.102**	.045		-2.269	.025
	Employer_branding	**.096**	.025	**.364**	**3.865**	**.000**

a. Dependent Variable: Alpha_CAPM

As already mentioned, the equation of a simple linear regression model, looks as follows:

$$Y = \alpha + \beta * X \quad (20)$$

The Constant (α) is -0.102 and stands for a stable value in the equation of the model. This means that, if the average value of the independent variable "Employer_branding", was equal to zero, the estimated value for the "Alpha_CAPM" would be -0.102. Including the value of α in the equation, we get the following:

$$Y = -0.102 + \beta * Employer\_branding \qquad (21)$$

Next, the Unstandardized Coefficient B of "Employer_branding" (β), with the value of 0,096, is the estimated coefficient of the regression equation or also called, the slope for the regression line. It indicates, that the dependent variable "Alpha_CAPM" will increase 0,096 units, if the dependent variable "Employer_branding" increases 1 unit and all other components stay constant. Expressed by the equation this means:

$$Y = \alpha + 0.096 * Employer\_branding \qquad (22)$$

After interpreting these values, the estimated regression model can be built, by including the specific α, as well as the specific β in the equation:

$$Y = -0.102 + 0.096 * Employer\_branding \qquad (23)$$

The value of the test statistic for β is 3.865 and the hypotheses of the T test are:
H0 = $\beta = 0$
(There is no relationship between the independent variable X "Employer_branding" and the dependent variable Y "Alpha_CAPM")
H1 = $\beta \neq 0$
(There is a relationship between the independent variable X "Employer_branding" and the dependent variable Y "Alpha_CAPM")

The p-value (Sig.) with a value of 0.001 is smaller than the significance level (α) with a value of 0.05. Therefore, the H0 is rejected and the H1 is assumed, what means, that "Employer_branding" contributes to explain the variance of "Alpha_CAPM".
The Standardized Coefficient, in a linear regression, is always Pearson's correlation coefficient. This value, as already explained, allows us to compare the relative strength of the independent variable on the dependent variable. Here the value of B is 0.364, what represents a moderate explanatory power of "Employer_branding" for "Alpha_CAPM".

To summarize the results of this first simple linear regression, between the independent variable "Employer_branding" and the dependent variable "Alpha_CAPM", one can state, that, as the H0 could be rejected and consequently H1 is assumed, "Alpha_CAPM" is affected by "Employer_branding". As, "Alpha_CAPM" is a representative variable for a company´s financial performance, it can be said that, the financial performance of a company, in terms of the difference between the expected return and the actual return (Alpha CAPM) is positively influenced by its successful employer branding.

4.2.2 Simple linear regression – Industry averages

4.2.2.1 Analyzing the correlation and directionality of the data

Correlation Matrix:

Correlations

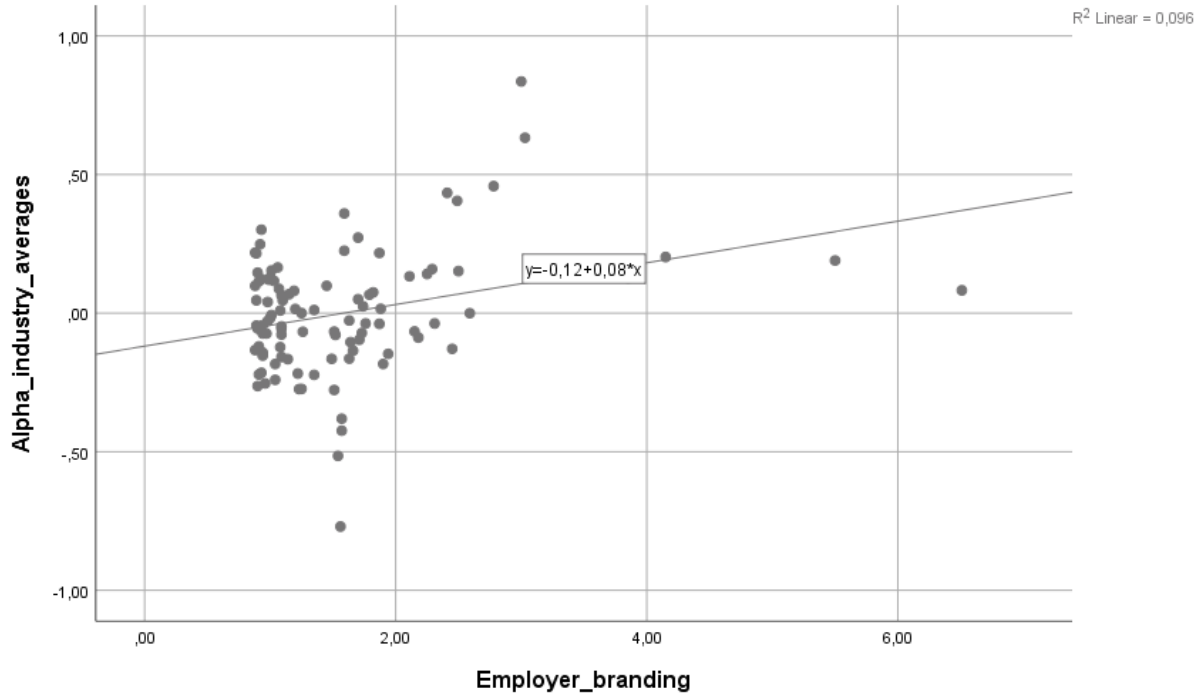
		Alpha_industry_averages	*Employer_branding*
Alpha_industry_averages	Pearson Correlation	1	**.309****
	Sig. (2-tailed)	-	.002
	N	100	100
Employer_branding	Pearson Correlation	**.309****	1
	Sig. (2-tailed)	.002	-
	N	100	100

**. Correlation is significant at the 0.01 level (2-tailed).

By the analyzation of Pearson´s Correlation Coefficient ($r_{x,y}$), the strength and directionality of the linear association between the two quantitative variables of this regression, namely, the independent variable "Employer_branding" and the dependent variable "Alpha_industry_averages" is examined. Whereby the value 1 indicates a very strong positive linear correlation, describes a very strong negative correlation and 0 states, that there is no linear correlation between the two variables and therefore it would not be useful to run a linear regression.

When correlating "Employer_branding" and "Alpha_industry_averages", the result $r_{x,y}$ = 0.309**, indicates a significant moderate positive correlation between the two variables. The two stars show, that the association would be significant even at a 99% confidence interval.

Scatterplot:



The scatterplot supports the findings of the correlation matrix and shows a weak to moderate positive linear association between the two variables.

4.2.2 2 Estimating the simple linear regression by the OLS Method

Variables Entered/Removed[a]

Model	*Variables Entered*	*Variables Removed*	*Method*
1	Employer_branding[b]	.	Enter

a. Dependent Variable: Alpha_industry_averages

b. All requested variables entered.

The equation of this simple linear regression is as follows:

$$Alpha\_industry\_averages = \alpha + \beta * Employer\_branding + \varepsilon \qquad (24)$$

Model goodness of fit:

Model Summary[b]

Model	*R*	*R Square*	*Adjusted R Square*	*Std. Error of the Estimate*	*Durbin-Watson*
1	.309[a]	**.096**	.086	.21093	1.731

a. Predictors: (Constant), Employer_branding

b. Dependent Variable: Alpha_industry_averages

The Determination Coefficient (R^2), represents the proportion of variation in the Y variable that is explained by the estimated regression line, or in other words, expresses the confidence placed on the regression equation as a forecasting tool. In this case the R^2 has a value of 0.096. This means that the model has a relatively weak goodness of fit, as only 9.6% of the variance of the dependent variable "Alpha_industry_averages" can be explained by the independent variable "Employer_branding".

Model Validity:

ANOVA[a]

Model		*Sum of Squares*	*df*	*Mean Square*	*F*	*Sig.*
1	*Regression*	.461	1	.461	**10.362**	**.002[b]**
	Residual	4.360	98	.044		
	Total	4.821	**99**			

a. Dependent Variable: Alpha_industry_averages

b. Predictors: (Constant), Employer_branding

To check the validity of the model and to check whether the regression model significantly predicts the dependent variable or nor not, an ANOVA is run. In the case of this data set there is only one regression coefficient (β), which represents the regression model, namely the independent variable "Employer_branding" and as it is a simple linear regression, there is only one dependent variable tested here, namely "Alpha_industry_averages".

In order to test the validity of the model, following hypotheses are phrased:

H0= β =0

(There is no regression coefficient, that is significantly different from zero and thus, the independent variable does not help to explain the dependent variable)

H1= $\beta \neq 0$

(There is at least one regression coefficient, that is significantly different from zero and thus, helps to explain the dependent variable)

The following results are obtained:

10.362 (99) = 0.002

Sig. (0.002) < α (0.05)

The value of the test statistic (F) is 10.362, the degrees of freedom (df) are 99 and the p-value (Sig) is 0.002. As the p-value (Sig.) is smaller than the confidence interval (α), the H0 can be rejected and H1 is assumed, what in turn means that there exists at least one coefficient that is significantly different from zero and thus helps to explain the dependent variable.

Translated to this data set is means that the independent variable "Employer_branding" helps to explain the dependent variable "Alpha_industry_averages" and that consequently the model is valid.

Explanatory capacity of the independent variable:

Coefficients

Model		*Unstandardized Coefficients*		*Standardized Coefficient*	*t*	*Sig.*
		B	Std. Error			
1	*(Constant)*	**-.119**	.042		-2.818	.006
	Employer_branding	**.075**	.023	**.309**	**3.219**	**.002**

a. Dependent Variable: Alpha_industry_averages

As already explained, the equation of a simple linear regression model, looks as follows:

$$Y=\alpha+\beta*X \quad (25)$$

The Constant (α) is -0.119 and stands for a stable value in the equation of the model. This means that, if the average value of the independent variable "Employer_branding", was equal

to zero, the estimated value for the "Alpha_industry_averages" would be -0,119. Including the value of α in the equation, we get the following:

$$Y = -0.119 + \beta * Employer\_branding \qquad (26)$$

Next, the Unstandardized Coefficient B of "Employer_branding" (β), with the value of 0.075, is the estimated coefficient of the regression equation or also called, the slope for the regression line. It indicates, that the dependent variable "Alpha_industry_averages" will increase 0.075 units, if the dependent variable "Employer_branding" increases 1 unit and all other components stay constant. Expressed by the equation this means:

$$Y = \alpha + 0.075 * Employer\_branding \qquad (27)$$

After interpreting these values, the estimated regression model can be built, by including the specific α, as well as the specific β in the equation:

$$Y = -0.119 + 0.075 * Employer\_branding \qquad (28)$$

The value of the test statistic for β is 3.219 and the hypotheses of the T test are:
H0 = $\beta = 0$
(There is no relationship between the independent variable X "Employer_branding" and the dependent variable Y "Alpha_industry_averages")
H1 = $\beta \neq 0$
(There is a relationship between the independent variable X "Employer_branding" and the dependent variable Y "Alpha_industry_averages")

The p-value (Sig.) with a value of 0,002 is smaller than the significance level (α) with a value of 0.05. Therefore, the H0 is rejected and the H1 is assumed, what means, that "Employer_branding" contributes to explain the variance of "Alpha_industry_averages".
The Standardized Coefficient, in a linear regression, is always Pearson's correlation coefficient. This value, as already explained, allows us to compare the relative strength of the independent variable on the dependent variable. Here the value of B is 0.309, what represents a moderate explanatory power of "Employer_branding" for "Alpha_industry_averages".

To summarize the results of the second simple linear regression, between the independent variable "Employer_branding" and the dependent variable "Alpha_industry_averages", one can state, that, as the H0 could be rejected and consequently H1 is assumed, "Alpha_industry_averages" is affected by "Employer_branding".

As, "Alpha_industry_averages" is a representative variable for a company´s financial performance, it can be said that, the financial performance of a company, in terms of the difference between the actual return of the firm and the average return of the respective industry (Alpha of industry averages), is positively influenced by its successful employer branding.

5. Discussion and Conclusion

Looking at the results above this work gives significant verifications on a positive effect of employer branding on the financial performance of a company in line with previous propositions and research (Fishman 1998; Fulmer *et al*., 2003; Backhaus & Tikoo, 2004; Lievens, 2007; Saini *et al.*, 2014). As explained above, in this research, financial performance is represented by two separate variables, the CAPM alpha and the industry averages alpha. The positive correlation of these two variables, demonstrates a first solidity of the concept. Further, the two performed regressions have come to the same final result and document a significant positive relation between employer branding and the financial performance of a company. Since each regression confirms the results of the other regression the introduced control mechanism has no restrictions of the significant results and can be seen as another reinforcement of the causal relationship.

The portions of the variance in financial performance that can be explained by the predictor variable employer branding slightly differ and both seem to be relatively small at a first impression. However, even the weak explanatory power of around ten percent still has large consequences for the affected firms as tiny changes in returns represent high volumes of dollars in market capitalization. As a result, the obtained results can work as a justification for millions and millions of dollars spend for employer branding. Both models show that saving money and not investing in a good employer brand can be far more costly at the end of the day.

As already explained in the methods part, the portions of variance in financial performance that can be explained by employer branding would have been higher when excluding the three companies Alphabet, Facebook, and Microsoft. But as already stated, it was decided to keep them in the data set for completeness sake, as these companies are global players and the market consist of all players not only of the ones convenient for the data set. This means, that by excluding these companies, the results would be seeming better, as the explained variance would be higher, but at the same time the results would be failing in relevance without all market players being included in the regressions. Therefore, and because we see no risk of increasing Type 1 error, we opted to preserve the full sample.

The proof of the positive influence of employer branding on financial performance has an important implication for the decision makers in the respective firms and for the academics researching employer branding. Bringing statistical proof to the theoretical reflections and

justifications of the importance of employer branding was the main goal of this research and has been achieved.

On a final note this work encourages firms to carefully design and implement employer branding strategies. By this, a proactive approach is recommended as hesitation may lead to a competitive disadvantage regarding human capital and this disadvantage likely has a high negative impact on the financial performance of a company. For firms which missed this opportunity, it is a very costly venture to catch up with firms that strategically positioned their employer brand early on.

Since employer branding and financial performance are both constructs with an enormous complexity it comes without surprise that this work has to overcome some complications. As mentioned in the literature review both models, representing financial performance, show imperfections. But by using them as separate dependent variables, the models function as review variables and thus by supporting each other's findings, they achieve a higher level of credibility. Another complication is found in the structures of the listed members in the S&P 100. As many firms only function as holdings and have far more popular subsidiaries it is quite important to take the employer brand of the subsidiaries also into account, when collecting data. One clear example occurs in the case of the LinkedIn followers, as some holdings record follower numbers, which only represent a very small fraction of the followers, compared to an owned subsidiary (e.g. Alphabet and its subsidiary Google). Next, the employer rankings may not be completely accurate, as they are on a voluntary basis and only registered companies are ranked. This may bias the findings a bit as the employer brands of unregistered companies are underestimated.

In terms of further research, it would therefore be interesting to either identify the companies, which did not register for the study and exclude them from the sample, or to provide an own ranking which does not rely on registration. A next valuable step could be to see how the effect of employer branding on financial performance behaves over a longer time horizon. Also, enlargements of the sample size would be very interesting. Research in other markets outside the United States of America or even the Western World could investigate cultural differences on the importance of employer branding. Further, it would be nice to break down employer branding in smaller parts to see which tools effectively boost the financial performance of a company. Lastly, it is most valuable for both scholars and practitioners to explore variables linking employer branding to financial performance rather than just accept its correlation. Future research might benefit from testing mediating effects, e.g. public awareness due to

advertise effects of rankings (Theurer et al., 2018) or higher talent attractiveness as suggested by Küpper, Klein and Völckner (2019). In the case of the last one, a time lag research would add much to the understanding of delayed effects from hiring talents. Likewise, because skilled workforce shortage is more strongly felt in fast growing economies with an investment in high technology intensive production, it might be interesting to test for the interaction effect with GDP growth or a given Hi-Tech ranking (e.g. Bloomberg Innovation Index or credited similar).

This work dares an outlook into the future by concluding that human capital is becoming more and more a scarce and important source that determines the success of a company. It is expected, that the effect employer branding will have on financial performance will constantly increase over the next decades to come. Additionally, as stated by Backhaus et al. (2002: 292), *"[t]he evolving needs and values of today's workers make employee recruitment more challenging"*. To conclude, it can be said that the importance of employer branding is higher than ever and that failing to listen to this trend and only reacting after time instead of acting right now is a high danger for today's companies.

6. Bibliography

Periodicals

Backhaus, K. B., Stone, B. A. & Heiner, K. 2002. Exploring the Relationship Between Corporate Social Performance and Employer Attractiveness. ***Business and Society***, *41* (3): 292-318.

Backhaus, K. B., & Tikoo, S. 2004. Conceptualizing and researching employer branding. ***Development International***, *9* (4/5): 501-5017.

Banz, R. W. 1981. The relationship between return and market value of common stocks. ***Journal of Financial Economics,*** *9*: 3-18.

Beechler, S. & Woodward, I.C. 2009. The global "war for talent". ***Journal of International Management,*** *15*(3): 273-285.

Biswas, M. K., & Suar, D. 2014. Antecedents and Consequences of Employer Branding. ***Journal of Business Ethics,*** *136*(1): 57–72.

Boon, C., Eckardt, R., Lepak, D.P. & Boselie, P. 2018. Integrating strategic human capital and strategic human resource management. ***The International Journal of Human Resource Management,*** *29*(1): 34-67.

Collins, C. J. & Kanar, A. M. 2013. Employer brand equity and recruitment research. ***The Oxford Handbook of Recruiting***: 284-297.

Carvalho, A. & Areal, N. 2016. Great places to work: Resilience in times of crisis. ***Human Resource Management***, *55*: 479–478.

Caselli, F. & Ciccone, A. 2019. The human capital stock: a generalized approach: comment. ***American Economic Review***, *109*(3): 1155-74.

Fama, E. F. & French, K. R. 2004. The capital asset pricing model: Theory and evidence. ***Journal of Economic Perspectives,*** *18*(3): 25-46.

Fulmer, I.S., Gerhart, B. & Scott, K.S. 2003. Are the 100 best better? An empirical investigation of the relationship between being a 'great place to work' and firm performance. ***Personnel Psychology***, *56*: 965–993.

Güntürkün, P., Haumann, T., Koch, H. & Lukasczyk, A. 2012. Ein monetärer Ansatz zur ganzheitlichen Erfassung des Employer Brandings. ***Personal Quarterly Wissenschaftsjournal für die Personalpraxis***, *64*: 40-46.

Kashyap, V. & Verma, N. 2018. Linking dimensions of employer branding and turnover intentions. ***International Journal of Organizational Analysis***, *26*(2): 282-295.

Küpper, D.M., Klein, K. & Völckner, F. 2019. Gamifying employer branding: An integrating framework and research propositions for a new HRM approach in the digitized economy. ***Human Resource Management Review.*** https://doi.org/10.1016/j.hrmr.2019.04.002

Lievens, F. 2007. Employer branding in the Belgian army: the importance of instrumental and symbolic beliefs for potential applicants, actual applicants, and military employees. ***Human Resource Management***, *46*: 51–69.

Lievens, F. & Slaughter, J. E. 2016. Employer image and employer branding: What we know and what we need to know. ***The Annual Review of Organizational Psychology and Organizational Behavior***, 3: 407-440.

Mihalcea, A. 2017. Employer branding and talent management in the digital age. ***Management Dynamics in the Knowledge Economy,*** *5*(2): 289-306.

Moroko, L., Uncles, M. D. 2008. Characteristics of successful employer brands. ***Journal of Brand Management,*** *16*: 160-175.

Richard, P.J., Devinney, T.M., Yip, G.S. & Johnson, G. 2009. Measuring organizational performance: Towards methodological best practice. ***Journal of Management,*** *35*(3): 718-804.

Rossi, M. 2016. The capital asset pricing model: a critical literature review. ***Global Business and Economics Review,*** *18*(5): 604-617.

Saini, G.K., Rai, P. & Chaudhary, M.K. 2014. What do best employer surveys reveal about employer branding and intention to apply? ***Journal of Brand Management***, *21*: 95–111.

Sharpe, W. F. 1964. A theory of market Equilibrium under conditions of risk. ***The Journal of Finance***, *19* (3): 425-442.

Theurer, C.P., Tumasjan, A., Welpe, I.M. & Lievens, F. 2018. Employer branding: A brand equity-based literature review and research agenda. ***International Journal of Management Reviews***, *20*: 155-179.

Tom, V. 1971. The role of personality and organizational images in the recruiting process. ***Organizational Behavior and Human Performance***, *6*: 573-592.

Torre, M. & Llorente, A. 2019. Winning the War for Talent: An Experimental Evaluation of Online Recruitment Campaigns Using Twitter. ***Business and Management Studies,*** *5*(1): 10-24.

Ulrich, D. 2015. From war for talent to victory through organization. ***Strategic HR Review***, *14*(1/2): 8-12.

Wang, T. & Zatzick, C.D., 2019. Human Capital Acquisition and Organizational Innovation: A Temporal Perspective. ***Academy of Management Journal***, 62(1): 99-116.

Electronic documents

Fishman, C., The war for talent;
http://www.fastcompany.com/magazine/16/mckinsey.html; 09.12.2018.

Investopedia; Definition of Human Capital;
https://www.investopedia.com/terms/h/humancapital.asp; 12.04.2019.

Jagerson, J., What is the Capital Asset Pricing Mode*l – CAPM;*
https://www.investopedia.com/terms/c/capm.asp; 05.10.2018.

OECD Insights; Human Capital: The Value of people;
https://www.oecd.org/insights/37967294.pdf; 25.01.2019.

Data sources of best employer rankings

Business Insider; The 50 best companies to work for in America;
https://www.businessinsider.com/payscale-best-companies-to-work-for-in-america-2016-4#1-google-50; 12.11.2018.

CNBC; The 25 best companies to work for in America;
https://www.cnbc.com/2016/12/07/the-25-best-companies-to-work-for-in-america.html; 12.11.2018.

Forbes; 10 best places to work in America 2016;
https://www.forbes.com/sites/kathryndill/2016/03/23/americas-best-employers-2016/#33edeb725767; 18.11.2018.

Glassdoor; Best places to work for – 2016 Employees' choice; https://www.glassdoor.com/Award/Best-Places-to-Work-2016-LST_KQ0,24.htm; accessed 18.11.2018.

Indeed; The 50 best companies to work for in America 2016; http://blog.indeed.com/2016/05/05/fortune-500-top-companies-to-work-for/; 13.11 2018.

Data source of financial data and employee numbers

Bloomberg, July-December 2018.

Data source of the number of LinkedIn follower

LinkedIn; https://www.linkedin.com/feed/; August 2018.

7. Annex

Table 1: Descriptive statistics of the three variables

Descriptives

			Statistic	Std. Error
Employer_branding	*Mean*		1.5698	.09080
	95% Confidence Interval for Mean	*Lower Bound*	1.3896	
		Upper Bound	1.7500	
	5% Trimmed Mean		1.4391	
	Median		1.2500	
	Variance		.824	
	Std. Deviation		.90795	
	Minimum		.88	
	Maximum		6.51	
	Range		5.63	
	Interquartile Range		.80	
	Skewness		2.948	.241
	Kurtosis		11.550	.478
Alpha_CAPM	*Mean*		.0488	.02405
	95% Confidence Interval for Mean	*Lower Bound*	.0011	
		Upper Bound	.0965	
	5% Trimmed Mean		.0419	
	Median		.0152	
	Variance		.058	
	Std. Deviation		.24046	
	Minimum		-.72	
	Maximum		.96	
	Range		1.68	
	Interquartile Range		.29	
	Skewness		.582	.241
	Kurtosis		2.286	.478

Alpha_industry_averages	*Mean*		-.0012	.02207
	95% Confidence Interval for Mean	*Lower Bound*	-.0450	
		Upper Bound	.0426	
	5% Trimmed Mean		-.0058	
	Median		-.0222	
	Variance		.049	
	Std. Deviation		.22068	
	Minimum		-.77	
	Maximum		.84	
	Range		1.61	
	Interquartile Range		.25	
	Skewness		.353	.241
	Kurtosis		2.929	.478