

Employer Branding: A Strategic Tool to Attract Potential Recruits

Surbhi Malhotra

Assistant Professor,
RDIAS, Rohini

Parul

Student,
RDIAS

Abstract

With the recent accretions in the economy and the labor market, the relationship of power between employers and the job applicants have brought the concept of employer branding to lights. The organizations used marketing and branding practices to propagate fidelity in customers and they are intensifying this activity to make them attractive from an employee perspective. Thus, Employer Branding is concerned with the building a distinctive image in the minds of potential and existing employees, that an organization is a great place to work with, above all others. This study is focused on understanding in depth, how potential recruits respond to 'the employer brands'. The paper identifies the significant factors which attract the post graduates towards potential employer. Data has primarily been collected through a structured questionnaire from MBA students. The results from the paper statistically signify that the Employer Branding has positive influence on students' decision to apply in an organization.

Keywords: Employers, Employer Branding, Potential Recruits

Introduction

The term brand has been explained as a name, term, sign, symbol, or design, or a combination of them which is intended to identify certain goods and services of one seller or group of sellers, so that they can be differentiated from goods and services of their competitors (American Marketing Association). Traditionally, the term brand was used by organizations only as a tool for marketing with the purpose to promote the offerings of a company to their customers, give an identity to their products and services in order to differentiate them from their competitors. But now the concept of brand has evolved into signs, symbols, words or satisfaction which is concerned with the overall identity and reputation of an organization (Brostrom, 2012).

Branding is generally used as tool by organizations to create and strengthen their corporate brands. The overall process of branding includes an organization's efforts to create a unique name and image for their product or service in the minds of a consumer with the help of their rigorous advertising campaigns, having a consistent theme (Business Dictionary, 2013). Branding includes all the practical measures to build a brand within a market which is suitable to make an offer that stand out from the offers with similar quality and to enable an accurate allocation of an offer to a particular brand (Esch F., 2010).

In recent years the same principles have been applied in human resource management, under the concept 'employer branding' (Backhaus and Tikoo, 2004). Tim Ambler and Simon Barrow were the first who coined the term "employer brand" in London Business School, 1996 as a research discipline, in which they conducted an explorative study to investigate how relevant is the application of brand management techniques to human resource management among the companies of United Kingdom (Aggerholm, Andersen & Thomsen, 2011).

From the last few years the competition has increased significantly which has affected the processes related to attracting, recruiting and retaining the best possible and suitable employees (Berthon, 2005). Collins (2002) in his study 'Good to Great' mentioned that getting the people on a bus before figuring out where to drive is of less importance as compared to getting the right people in the bus. In a

competitive environment, an organization is assessed in many areas. Now-a-days, apart from the analysis of products and services of an organization, there is a simultaneous concern for their reputation as an employer, identity in the market and brand management. For businesses of all sizes, this is both an opportunity and a challenge. Branding is concerned with establishing a compelling, symbolic and differentiated presence in the market to attract and retain not only the loyal customers but also the trusted employees for the organization.

Employer branding is an art to manage the awareness and perceptions of the employees, potential employees and related stakeholders with regard to a particular firm. It may also be referred as a philosophy which is concerned with the building of a distinctive image in the minds of potential and existing employees, that an organization is a great place to work with, above all others.

Table1: Contribution of Researchers

Name of the author (Year)	Definition/Statement of Employer Branding
Ambler & Barrow (1996)	The package of functional, economic and psychological benefits provided by employment, and identified with the employing company
Llyod (2002)	The sum of a company's efforts to communicate to existing and prospective staff that it is a desirable place to work
Sullivan (2004)	A targeted, long-term strategy to manage the awareness and perceptions of employees, potential employees, and related stakeholders with regards to a particular firm. The strategy can be tuned to drive recruitment, retention, and productivity management efforts
Davies (2007)	Employer brand is about creating an identity and distinction in the perception of the target population, where the product is employment
Edwards (2010)	Employer branding refers to activities where marketing theories, primarily the "science of branding", are applied to human resource activities in relation to potential and current employees

Importance of Employer Branding

In the current war of talents, the term employer branding has become a vital tool. Internal to an organization, employer branding tries to ensure that they attract talented employees and retain key employees. External to an organization, the employer branding tries to ensure that they not only attract employees to their organization but they also create some

positive associations for them so that their overall corporate image enhances (Eshoj, 2012). According to Mortensen, 2010 an effective and efficient employer brand identity is significant for an organization for the following reasons:

- Reduction in recruitment costs - If employer brand of an organization is weak, then they need to get a number of applications from the job seekers, without knowing

whether they want to work with them or not. This not only wastes their precious time but also their cost involved in the processes.

- Increased levels of employee commitment - Employees who value the work and brand image of an organization are expected to work at their maximum levels of potential and with strong feeling of dedication for the company.
- Enhancement of marketing and communication - A strong and effective brand image of an employer contributes in bridging the gap between an organization and all its audiences outside the organization.
- Increase in profits - After the adoption of relevant practices of employer branding, the right set of talent helps an organization in pooling the profits through its operations.

Employer branding offers conventional benefits such as functional, economic and psychological benefits to the current and prospective potential employees by positioning it in the same way as product brand (Ambler et al., 1996). Through effective employer branding, a job applicant can have an overall perception of identity and image of the organization. This helps them to refer what an organization is and what it wants to be. It will help a potential recruit to know the kind of working environment and work practices adopted by the recruiters (Nigel Wright Recruitment, 2008).

Employer branding helps in making an applicant aware of whether an organization takes care of the needs and interests of their employees, whether they will invest for their professional development and whether they observe and respond to the trends time to time in the changing labor markets (Figurska&Matuska, 2013). Employer branding will also help a job applicant to understand the flexibility at workplace, and the kind of treatment given in an organization through respect and recognition of their employee's contribution in the overall success of organization (Menor, 2010). The effective preview of an organization, either directly or indirectly helps a potential recruit to build higher levels of trust, faith and loyalty for the recruiters. As now they will be more aware of that organization's culture and workplace behavior (Sullivan, 2004).

As per the recent researches, now the companies have started realizing the importance of attracting the right set of employees and using employer branding as a strategy, which will not only contribute to the company's brand but will also distinguish them from others in the market as an attractive employer (Backhaus & Tikoo, 2004; Gaddam, 2008; Foster, Punjaisri and Cheng, 2010; Barrow, 2008).

Employer attractiveness refers to a series of imaginary and envisioned benefits which a potential employee sees or

expects in working for a specific organization (Berthon et al., 2005). The more attractive an employer is perceived by a potential employee, the stronger employer branding that organization has.

Today the organizations need to gain an insight in the factors which leads to employer attractiveness in order to attract new employees and to retain the existing ones. When organizations will start recognizing the value of employer attractiveness and integrate its crucial factors into their employer brand, then that means they are ready to participate in the global war for talent (Berthon et al., 2005).

There are a series of studies which reveals that employer attractiveness has various dimensions. A study conducted by Ambler et al., 1996 identified three dimensions of employer attractiveness that defined employer branding: psychological, functional and economic.

Berthon et al., 2005 used the 25 items EmpAt (employer attractiveness) scale in their study, which had five dimensions of employer attractiveness: social value, development value, application value, interest value and economic value.

In a study Arachchige et al., 2013 stated that there are eight dimensions of employer attractiveness: job structure, social commitment, social environment, relationships, personal growth, organizational dynamism, enjoyment, and corporate environment.

Overview Of The Past Researches

Jonze et al., 2013 in their thesis investigated three firms for why they have strong value as employer brands. The analysis of their findings outlined certain characteristics of strong employer brands, on the basis of their functional benefits such as salaries, bonuses, insurance schemes, pension schemes; and symbolic benefits such as the quality of operations, desire to innovate, cooperate, opportunities for personal and professional development, etc.

Eronen, 2012 in his study showed that the job seekers undergo a decision making process while applying for a job. The future career possibilities, opportunities at a company and the economic factors play a crucial role in determining the expectations and demands of an applicant.

Sokro, 2012 aimed to investigate, how the employer branding influences the attraction and retention of employees in the banking sector of Ghana. The analysis of the results indicated that brand name and good will of an organization influences the decision of respondents while opting for their employers.

Archchige et al., 2011 surveyed 221 final year students of business course from a Sri Lankan university to identify the attributes which were most significant in attracting the graduate students of Sri Lanka to seek employment. Various

factors that may influence the perceptions of a job seeker are: reputation variables, personal characteristics and academic background.

Mortensen, 2010 examined graduate students by asking them to describe and then rank their interests with pre formulated instruments, presented in a matrix. The survey showed that the better a company is in maintaining its brand image and relationships by using a right set of tools with right segment, the more likely a graduate student would apply for a job in that company. It also suggested that talent relationship management acts as a crucial corner stone while building a good employer brand.

Nigel Wright Recruitment, 2008 conducted an online survey which showed that the construct of an employer brand consists of five key values to the potential applicants: interest value, social value, economic value, development value and application value. The results suggested that building both, the employer brand and general prestige of an organization is essential as social factors are most influential.

Stahl et al., 2007 investigated how leading organizations are building and sustaining their talent pipeline. They found that the companies around the world have marked employer branding activities at relatively higher degree. Such activities are not only effective rather they help an organization to maintain its unique culture while achieving key business goals and customer responsiveness.

Sovina et al., 2003 in their empirical research tried to imply that the organizational brand equity serves as a mediator for their effects on the applicant's perceptions and intentions to apply for the job. The organizations with strong brand image are more likely to generate larger pool of applicants.

Ambler et al., 1996 in their study compared the commitment levels of employees and customers in different industries and sectors. Their findings showed that managing employer branding as an integrated process of human resources is a politically delicate issue. Most of the respondents associated the concept of employer branding with the concept of corporate organizational culture. They identified awareness as a crucial factor that impacts the performance, market position, reputation and brand of an organization.

Objectives Of The Study

- To study the students preference for employer brands with that of gender.
- To identify the attributes which are significant for a job applicant while applying for the job.

Hypothesis Of Study

HN1: There is no significant relationship between student preferences for employer brands with that of gender

HA1: There is a significant relationship between student preferences for employer brands with that of gender

HN2: There is no significant relationship between employer branding and applicant's intention to apply for a job.

HA2: There is significant relationship between employer branding and applicant's intention to apply for a job.

Research Methodology

To satisfy and to meet the objectives of the study both qualitative methodology and quantitative techniques have been used. This study is focused on understanding in depth, how potential recruits respond to 'the employer brands'.

Data Collection Method: Data is collected from primary as well as secondary sources. Data collection method used for this study is Survey Method because it is used to gather information about individuals. The survey instrument in this study is a structured questionnaire. Part A of the questionnaire sought personal details of the respondents such as age, gender and educational background of the students. Part B of the questionnaire contained 32 items to measure aspects of employer attractiveness, 25 of which were drawn from the EmpAt scale developed by Berthon, Ewing and Hah (2005) on the basis of a study conducted in Australia and 7 items from a modified scale developed by Arachchige and Robertson (2011) on the basis of a study conducted in Sri Lanka.

Selection of Sample: Non-Probabilistic Sampling - Convenience and snowball sampling techniques are applied. The Sample Size was determined from an article on "Determining Sample Size" by Glenn D. Israel from University of Florida, Reviewed June 2013. Sample Size for $\pm 10\%$ Precision Levels where Confidence Level is 95%. In order to obtain the information required to meet the objectives of the study, a sample of 180 MBA from six affiliated institutes from Delhi state university are surveyed.

Design of Questionnaire: The 32 statements were measured on five point Likert's scale, in which, 1 indicated "not important", 2 indicated "slightly important", 3 indicated "moderately important", 4 indicated "important" and 5 indicated "very important". The statements were later reduced to 5 factors by using the statistical technique of factor analysis.

Data Analysis And Interpretation

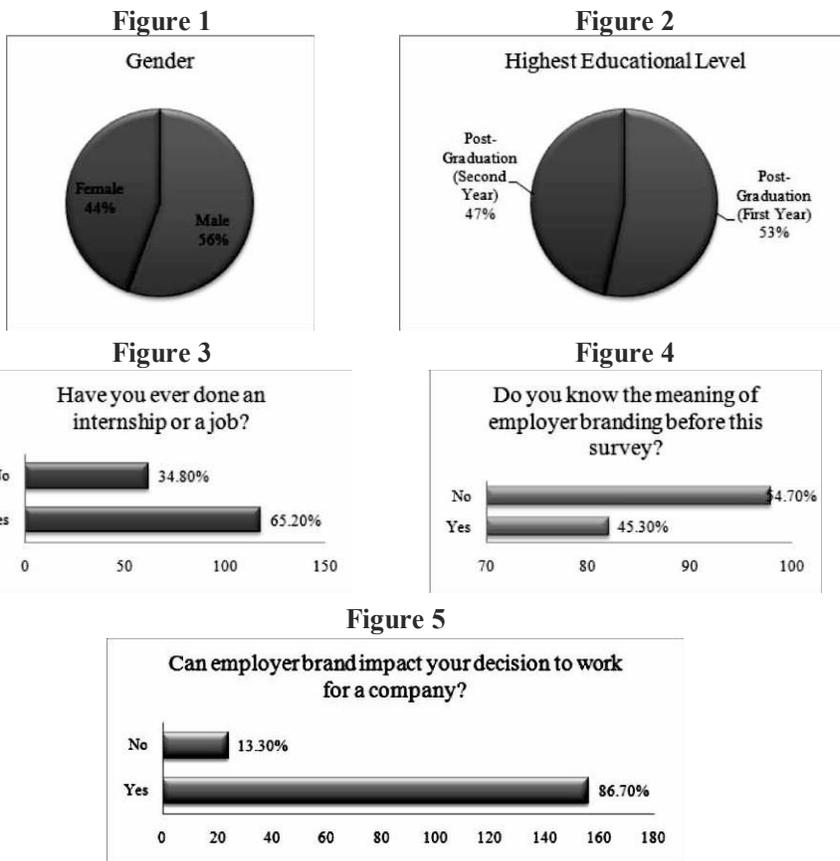
The primary data collected has been sorted, classified and tabulated in a format and analyzed by using SPSS. An appropriate statistical procedure like Chi square test for factor, Cronbach's alpha for reliability was calculated, KMO and Bartlett's Test was conducted for sample adequacy. The factor analysis is done which identifies the significant factors which attract the post graduates towards potential employer.

Table 2 : Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.972	.972	32

In order to measure the reliability of our scale, we have used an internal consistency measure called Cronbach's Alpha. In table 2, since the value of Cronbach's Alpha is greater than 0.6, it means that our items have relatively high internal consistency with coefficient of alpha 0.972.

PartA - Demographic Profile Charts



Part B - EmpAt Scale

HN1: There is no significant relationship between student preferences for employer brands with that of gender

HA1: There is a significant relationship between student preferences for employer brands with that of gender

Table 3 : Can employer brand impact your decision to work for a company? * Gender

		Gender		Total	
		Male	Female		
Can employer brand impact your decision to work for a company?	Yes	Count	89	67	156
		% of Total	49.4%	37.2%	86.7%
	No	Count	10	14	24
		% of Total	5.6%	7.8%	13.3%
Total	Count	99	81	180	
	% of Total	55.0%	45.0%	100.0%	

Table 3 depicts the observed frequencies for each possible combination of the two variables.

Table 4: Chi-Square Test

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.989 ^a	1	.158	.189	.117
Continuity Correction ^b	1.416	1	.234		
Likelihood Ratio	1.980	1	.159		
Fisher's Exact Test					
Linear-by-Linear Association	1.978	1	.160		
N of Valid Cases	180				

The Chi Square test has been applied to determine whether there is a significant association between the impact of employer branding on a potential recruit's decision to work for a company with that of gender. As shown in the table, the value of Pearson Chi Square is 0.158 (the p value) which is greater than 0.05 (the pre-set value). This means that with 1 degree of freedom and 15.80% of estimated significance level, we accept null hypothesis that there is no significant relationship between student preferences for employer brands with that of gender.

HN2: There is no significant relationship between employer branding and applicant's intention to apply for a job.

HA2: There is significant relationship between employer branding and applicant's intention to apply for a job.

Factor Analysis Data reduction technique has been used to find out the major factors that contribute towards the employer branding decision of a potential recruit or a job applicant. We have measured the adequacy of our sample by KMO & Bartlett's Test of Sphericity.

Table 5 : KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.927
Bartlett's Test of Sphericity	Approx. Chi-Square	5483.033
	Df	46
	Sig.	.000

(Table 5)

As per Table 5, the Kaiser-Meyer-Olkin (KMO) value is 0.927 which is more than acceptable value 0.60 and the value of Bartlett's test of Sphericity is 0.000 which is less than 0.05. Thus, this shows that the data is adequate to apply factor analysis. In fact it can be said that the strength of relationship among variables is very strong because KMO values close to 1 are very good.

Table 6 : Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	17.261	53.941	53.941	17.261	53.941	53.941	7.600	23.749	23.749
2	2.575	8.046	61.987	2.575	8.046	61.987	5.809	18.154	41.903
3	1.442	4.507	66.494	1.442	4.507	66.494	4.270	13.345	55.248
4	1.138	3.555	70.050	1.138	3.555	70.050	3.164	9.889	65.137
5	1.051	3.286	73.335	1.051	3.286	73.335	2.624	8.198	73.335
6	.956	2.986	76.321						
7	.674	2.107	78.429						

8	.656	2.049	80.478						
9	.591	1.845	82.323						
10	.540	1.686	84.009						
11	.483	1.511	85.520						
12	.468	1.461	86.981						
13	.431	1.348	88.329						
14	.410	1.280	89.609						
15	.356	1.113	90.722						
16	.324	1.012	91.734						
17	.302	.943	92.677						
18	.281	.879	93.556						
19	.262	.818	94.374						
20	.238	.744	95.118						
21	.214	.668	95.786						
22	.200	.625	96.410						
23	.179	.560	96.970						
24	.149	.465	97.435						
25	.146	.456	97.892						
26	.129	.403	98.295						
27	.115	.358	98.653						
28	.104	.326	98.979						
29	.097	.304	99.283						
30	.085	.264	99.548						
31	.083	.258	99.806						
32	.062	.194	100.000						

(Table 6)

Table 6 shows the actual factors that have been extracted along with the Eigen values of 5 components before extraction, after extraction and after rotation shown in the columns Initial Eigen values, Extraction Sums of Squared Loadings and Rotation Sums of Squared Loadings, respectively. The % of variance column tells how much of the total variability (in all the variables together) can be accounted for by all the factors. Like after rotation, factor 1

accounts for 23.749% of the variability in all the 32 variables, factor 2 accounts for 18.154% and so on. The cumulative % column depicts the cumulative percentage of variance being accounted for by the current factor and all the preceding factors. For example, the fifth row before extraction shows a value of 73.335% which means that the first five factors account for 73.335% of the total variance together.

Table 7 : Rotated Component Matrix

	Component				
	1	2	3	4	5
Gaining experience that will help your career	.819				
An above average basic salary	.790				
An attractive overall compensation package	.782				

Job security within the organization	.713				
Feeling more self -confident as a result of working for the organization	.677				
Having a good relationship with your superiors	.673				
Happy work environment	.659				
Good promotion opportunities within the organization	.643				
Feeling good about yourself as a result of working for the organization	.635				
Innovative employer-new work practices and ideas	.626				
Working in an exciting environment		.750			
Supportive and encouraging colleagues		.748			
The organization produces high quality products and services		.701			
Having a good relationship with your colleagues		.693			
The organization produces innovative products and services		.616			
A large company					
A very profitable organization					
The organization values and makes use of your creativity					
Can gain experience in a range of departments					
The organization is customer-oriented					
The type of product and/or service produced by the organization			.770		
Company is well -known through advertising and media exposure			.739		
The organization is known for its honesty and fairness			.663		
The quality of the management			.638		
Giving you greater respect from family and friends					
Opportunity to teach others what you have learned at university				.670	

Opportunity to apply what was learned at university				.625	
Socially responsible organization				.615	
Acceptance and belonging					
Recognition/appreciation from management					.754
Provides opportunity for better jobs in the future					
A fun working environment					

(Table 7)

From Table 7, the 32 variables have been condensed into five factors. This table not only represents how the variables have been weighed for each factor, but it also depicts the correlation between a factor and their several variables. Then we have named these five factors as per their component variables such as Personal Development Traits, Quality Product & Work-life, Organizational Image,

Learning & Social Responsibility and Management Initiative for Appreciation. This rejects null hypothesis that there is no significant relationship between employer branding and applicant's intention to apply for a job. But, there are nine variables having zero or negligible factor loadings, which signifies that they do not impact the decision of a job applicant while they apply for a job.

<u>Factor 1</u> Personal Development Traits	<u>Factor 2</u> Quality Product & Work-life	<u>Factor 3</u> Organizational Image	<u>Factor 4</u> Learning & Social Responsibility	<u>Factor 5</u> Management Initiative for Appreciation
Gaining experience that will help your career	Working in an exciting environment	The type of product and/or service produced by the organization	Opportunity to teach others what you have learned at university	Recognition/appreciation from management
An above average basic salary	Supportive and encouraging colleagues	Company is well known through advertising and media exposure	Opportunity to apply what was learned at university	
An attractive overall compensation package	The organization produces high quality products and services	The organization is known for its honesty and fairness	Socially responsible organization	
Job security within the organization	Having a good relationship with your colleagues	The quality of the management		
Feeling more self-confident as a result of working for the organization	The organization produces innovative products and services			

Having a good relationship with your superiors				
Happy work environment				
Good promotion opportunities within the organization				
Feeling good about yourself as a result of				
working for the organization				
Innovative employer - new work practices and ideas				

(Table 8)

Limitations of the Study - The study represents only a small percentage of the students and therefore not truly indicative of the majority of job-seekers. In addition, all of the post graduate student respondents were from one university from North Delhi Region,

Conclusion

According to the study, it can be concluded that employer branding is an important tool which helps to attract potential recruits towards the organizations. It is concluded that there is no association of impact of employer branding with that of gender, but there are 23 items which impact the intention of potential recruits to apply for a job. The five major factors are Personal Development Traits, Quality Product & Work-life, Organizational Image, Learning & Social Responsibility and Management Initiative for Appreciation. The findings of our study exhibits that the potential recruits perceive Personal Development Traits as the most influential construct in determining their decision to work for a company. The study will help the organizations to work on the items which have an impact on the decision of potential recruits. It can be further scaled down according to the sector of the organizations i.e. services and manufacturing sector.

References

- Ambler, T., Barrow, S. (1996). The employer brand. *Journal of Brand Management*, 4(3), pp. 185-206.
- Arachchige, B., J., H., Robertson, A. (2011). Business Student Perceptions of a Preferred Employer: A Study Identifying Determinants of Employer Branding. *The IUP Journal of Brand Management*, Vol. VIII, No. 3.
- Arachchige, B., J., H., Robertson, A. (2013). Employer Attractiveness: Comparative Perceptions of Undergraduate and Postgraduate Students. *Sri Lankan Journal of Human Resource Management*, Vol.4, No.1, 2013.
- Backhaus, K., Tikoo, S. (2004). Conceptualizing and Researching Employer Branding. *Career Development International*, 9(5):501-17.
- Berthon, P., Ewing, M., Hah, L. (2005). Captivating company: dimensions of attractiveness in employer branding. *International Journal of Advertising*, 24(2), pp. 151-172.
- Brostrom, T., Farahvashi, V. (2012). Developing an employer branding index within the real estate industry. Unpublished master's thesis, Department of Real Estate and Construction Management, Royal Institute of Technology.
- Chartered Institute of Personnel and Development, (2007). Employer branding-the latest fad or the future of HR. Retrieved from Chartered Institute of Personnel and Development's website: www.cipd.co.uk.
- Collins, C., J. Stevens, C., K. (2002). The Relationship between Early Recruitment-related Activities and the Application Decisions of New Labor Market Entrants: A brand equity approach to recruitment. *Journal of Applied Psychology*, Vol. 87, No. 6, pp. 1121-1133.

- Cronbach, L., J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16(3), pp. 297-333.
- Duc, N., T. (2013). Employer Branding for SMEs: Attracting Graduating Students in IT Industry. Unpublished master's thesis, School of Business, Kajaani University of Applied Sciences, Finland & Heilbronn University of Applied Sciences, Germany.
- Eronen, L. (2012). How should companies use employer branding in order to attract student and graduate applications? Unpublished bachelor's thesis, Helsinki Metropolia University of Applied Sciences, University of Lincoln, European Management.
- Eshoj, P., A., N. (2012). The Impact of Employer Branding on The Formation of The Psychological Contract. Unpublished master's thesis, Aarhus School of Business and Social Sciences, Aarhus University.
- Figurska, I., Matuska, E. (2013). Employer branding as a human resources management strategy. *Human Resources Management & Ergonomics*, Vol. 7, 35-51.
- Jonze, J., Oster, H. (2013). Employer branding in human resources management. Unpublished thesis, Business Administration, Uppsala University.
- Lloyd, S. (2002). Branding from the inside out. *BRW*, 24(10), pp. 64-66.
- Mortensen, R., M. (2010). Employer branding & talent relationship management. Unpublished master's thesis, Aarhus School of Business, Aarhus University.
- Nigel Wright Recruitment, (2008). Employer branding survey. Retrieved from Nigel Wright Recruitment's website: www.nigelwright.com.
- Sokro, E. (2012). Impact of Employer Branding on Employee Attraction and Retention. *European Journal of Business and Management*, ISSN 2222-1905 (Paper) ISSN 2222-2839 (Online) Vol 4, No.18, 2012.
- Sovina, J., Collins, C., J. (2003). The Effects of Organizational Brand Equity on Employment Brand Equity and Recruitment Outcomes. Academy of Management Best Conference Paper 2003 HR. Retrieved from DigitalCommons@ILR: <http://digitalcommons.ilr.cornell.edu/conference>.
- Stahl, J., K., Bjorkman, I., Farndale, E., Morris, S., S., Paauwe, J., Stiles, P., Trevor, J., Wright, P., M. (2007). Global Talent Management: How Leading Multinationals Build and Sustain their Talent Pipeline. Faculty & Research Working Paper. Retrieved from Insead: www.insead.edu.
- Wallace, M., Lings, I., Cameron, R., Sheldon, N. (2014). Attracting and Retaining Staff: The Role of Branding and Industry Image. Retrieved from Springer's website: <http://www.springer.com/978-981-4560-57-3>.
- Yuksel, M. (2015). Employer branding and reputation from a strategic human resource management perspective. *Communications of the IBIMA*, DOI: 10.5171/2015.794545.