

Relationship Between Transformational Leadership, R&D Performance and Employee Based Brand Equity*

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ABSTRACT

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Purpose – Brand value, leadership and innovation subjects are vital for companies and organizations in order to be successful and competitive. Therefore, aim of this study is investigating relationship between transformational leadership, R&D performance and employee based brand equity and what role R&D performance has.

Design/methodology/approach – This study is carried out by collecting survey data from 135 managers or manager candidates who in R&D department of several defence companies. In the survey Bass and Avolio's Multiple Leadership Questionnaire (MLQ), Hirst's R&D performance model and Kwon's Employee Based Brand Equity scale were used. In order to test hypotheses, reliability analysis, frequency analysis, Pearson correlation analysis and linear analysis was done using IBM SPSS software.

Findings – The results of the analysis show that there is a statistically positive and meaningful relationship between transformational leadership, R&D performance and employee based brand equity. In addition, R&D performance has partial mediating effect on relationship between transformational leadership and employee based brand equity.

Discussion – According to this study, transformational leadership affect R&D performance and employee based brand equity significantly. In order to increase R&D organization's performance and employee based brand equity throughout an organization, manager selection should be made according to their transformational leadership traits. Since, employee based brand equity is a precursor of consumer based brand equity and consumer based brand equity is precursor of financial brand equity, companies should focus on increasing level of employee based brand equity inside their organizations as it is affected positively by R&D performance and transformational leadership while R&D performance is a mediator between transformational leadership and employee based brand equity.

1. INTRODUCTION

Branding is a powerful asset for a company to have a competitive and sustainable advantage in the market (Hasni et al, 2018; Shocker and Aaker, 1993). In the past, branding was associated with products and services of the company but recently its importance from human resources perspective has become important (King and Grace, 2010). According to Interbrand (2007), brands are assets which create financial value for organizations when they keep their promise to customers. Higher brand equity is a key element for a company to be sustainable and branding can be considered as multi dimensional subject; however it is called internal branding when it is focused on employees (Hasni et al, 2018). According to Huang and Sarigöllü (2014) company's brand value is effected positively when employees efficiently keep brand promise towards customers. Therefore, employee based brand equity has become more important in the literature as there are increasing number of studies in the literature. King and Grace (2009), argued that investment in employee based brand equity is also an investment in consumer based brand equity and investment in consumer based brand equity is also an investment in financial brand equity.

In modern business environment, organizational structures are mostly focused on teams rather than individuals, so they need leader to motivate and lead (Chen et al., 2007). There are some difficulties in managing teams such as leading members towards objectives with a shared vision, using resources efficiently, creating an supportive and trustworthy environment, assigning jobs and sharing information (Zaccaro et al.,

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2001). Since old fashioned leadership concepts became insufficient, modern leadership concepts called transactional and transformational leadership have been put forward. The most popular leadership subject, transformational leadership, is related to objectives and results of the groups and individuals (Braun et al., 2013). According to Eisenbeiss et al. (2008), employees' perception of their managers' transformational leadership is positively related to innovative performance of teams at research and development (R&D) organizations. Research indicate that employees perform better when they think their managers have transformational leadership traits. Transformational leaders creates a shared vision throughout the organization (Wang and Howell, 2010). They have effective communication with team members in order to increase organization's capability to meet their objectives (Schaubroeck et al, 2007). According to these information, perception of transformational leadership in company is an important asset which boosts organization's performance.

Innovation has become vital in current competitive market, as a result of this research and development (R&D) is becoming more important. Because of this, performance and efficiency of R&D organizations, which require high level of sector specific information and expertise, has gained importance. Kerssens-van Drongelen and Cook (1997), suggested that organizations wants to measure R&D performance to motivate researchers, specify, assign activities and processes to them.

As King and Grace (2009), stated that increase in employee based brand equity increases consumer based brand equity and increase in consumer based brand equity increases financial brand equity, it is important to have high employee based brand equity. Therefore, aspects which effect employee based brand equity becomes more important. In literature, there are some studies regarding leadership's effect on employee based brand equity and leadership's effect on innovation, R&D or firm performance. In order to analyze, how employee based brand equity is effected, this study's focus is on relationship between transformational leadership, R&D performance and employee based brand equity. The relationship between mentioned aspects has been analyzed in more detail.

2. LITERATURE REVIEW

In order to understand relationship between transformational leadership, R&D performance and employee based brand equity in a more efficient way, it is important to have knowledge regarding mentioned subjects. Therefore, literature information about transformational leadership, R&D performance and employee based brand equity is given in following sections.

2.1. Transformational Leadership

Transformation is, changing existing behaviors and structures radically or prepare them in order to handle future situations and embracing necessary applications for these future situations (Serinkan and Erdis, 2014: 7). Collins claimed that many companies were considered as good organizations but only some of them completed their transformation to be perfect organization. In his research, Collins studied common characteristics of the companies which transformed successfully. He suggested that the most important common characteristic was the leadership (Collins, 2004: 12).

Transformation is the reason for transformational leaders to emerge. Transformational leaders are representatives of change. They organize companies in a way that changes can be done easily (Kocak, 2009: 28). Transformational leaders are mainly focused on future and they have ability to create new opportunities and strategies (Yavuz, 2008: 47). Transformational leadership can be assessed as a subject which mainly focusses on common aims beyond personnels' needs. According to employees' mental needs, rewards are defined together with both management and employees (Durali, 2007: 9).

Transformational leaders define what is expected from employees plainly and strive to direct them towards organization's shared vision. Their focus are mainly on employees' abilities and they want to improve employees' self confidence for them to increase their performance. Because of this, employees understand how important their work is and they make effort towards organization's interests. As a result, innovation is encouraged throughout the company and a common culture appears. If leaders care about new culture and behaviors, their charisma is effected in a positive way (Keegan and Hartog, 2004).

In his 1978 study, Burns described transformational leadership as; directing and motivating employees towards mutually formed or independent objectives by using values, political or economic power, enhancing their moral values by realizing their potentials and effective communication (Krishnan, 2001, Barnett and McCormick, 2004). Transformational leadership's aim is to make sure that employees perform beyond expectations by modifying their feelings, ideas, beliefs and values (Rafferty and Griffin, 2004).

Bass modified Burns' transformational leadership definition into a more clear and measurable definition in his 1985 study. Bass has developed Multi-Factor Leadership Questionnaire (MLQ) to be able to investigate leadership from all its aspects (Brestrich, 2000: 101). Bass suggested that transformational leaders improve employees' needs to self-actualization level at Maslow's Hierarchy of Needs (Cumaguliyev, 2010: 25). MLQ's reliability has been tested and it is being used by various organizations such as armies, law enforcement, educational institutions, local authorities, companies and health organizations (Yilmaz, 2010: 30).

2.2.R&D Performance

Research and experimental development (R&D) is defined as creative studies which is done in order to enhance knowledge of humanity and improving these knowledge to create and develop new applications (OECD, 2002).

Recently, it is accepted that R&D has reached to fifth generation and it has been highly developed. In first generation or R&D which is during 1950s to 1965s, all produced products could meet people's needs and they were all demanded. In second generation, which was during 1960s to early 1970s, supply and demand were in balance. Because of the increase in the competition, sales were also tried to be increased, R&D's importance was considered in short term. In order to manage R&D activities Project management techniques have been started to be used. In third generation of R&D which was during 1970s to 1980s, focus was on decreasing the costs because of high inflation rates and low demand for products. During fourth generation of R&D which were during 1980s to mid 1990s, companies focused on developing new products and they developed processes in order to reduce the time of development. In the latest generation of R&D, competition at global level and high technological development speed have forced companies' borders to become larger. As a result of this, R&D has become a function which also interacts with outside of the organization (Nobelius, 2004). Since R&D changes too fast, companies struggle to make profit. As a result of this, R&D structures which interact with outside of the companies are required (Ozsoy, 2012: 5).

For organizations, R&D activities differ from other activities. In order R&D to perform better, certain information is necessary. R&D is thought as isolated from other functions and managing R&D systematically is difficult. Companies preferred providing a specific resource to R&D and wait for it to have good results in the long term. With new organizational structures' appearance, R&D management was also changed and measuring its performance has become crucial. Generally, R&D performance was considered as return of investment and this investment on R&D has been compared to other investments throughout the companies. As a result, efficient and reliable R&D performance measurement techniques and tools were become necessary (Ojanen and Voula, 2006).

In his 1999 study, Giles Hirst developed a R&D Performance Questionnaire which consist of R&D performance metrics. Hirst's questionnaire includes R&D performance's aspects like project's success and its quality with its benefits to the company, whether right procedures were used to meet objectives, whether it has met its short and long term objectives, its benefits to the company's development, convenience of company strategies, competitive operation development ability, new knowledge gathering and financial performance. He divided these aspects in to five scales which consist of, team performance, project quality, organizational development, competitive process/product development ability and total project satisfaction.

Team Performance: In order to measure different aspects of teams which make complex decisions in R&D organizations, team performance scale has been developed. This scale consist of four items, two of them covers if teams had chosen right strategies and procedures, other two covers if teams have reached objectives.

Project Quality: Technical quality of the project and activities are included in project quality scale. In his study, which he created R&D Performance Questionnaire, Hirst referred to eight quality aspects which were listed in Garvin's 1983 study. These aspects consist of; performance, reliability, durability, aesthetics, servicability,

features, conformance and perceived quality. Since these aspects emphasize on products' specifications, these aspects are related to product development of R&D.

Organizational Development: In his study, Hirst referred to studies of Tacheuchi and Nonaka (1986) which is about an organization's new knowledge acquisition and awareness, how organizations use these knowledge in important innovation capability related applications. Improvements of these abilities depend on company's past. Low level or lack of expertise development can affect development of technical capabilities negatively. Investing in talent improvement can support research development (Cohen and Levinthal, 1990). Therefore, in order to measure project's contribution to the development in the company, this scale was developed. This item is used for measuring project's success in new knowledge acquisition and organizational development.

Competitive Process/Product Development Capability: The amount of R&D investment and its decision are determined by considering projects' market share gain or new market creation and taking technology development capability into consideration. Hirst developed this scale in order to measure projects' competitive product/process development capability. This scale consist of aspects which are related to organization's financial objective achievements.

Total Project Satisfaction: Hirst developed this scale in order to measure leader, team and Project performance (Hirst, 1999). Since measuring satisfaction is considered as a poor measurement, this scale includes difficulty and effectiveness of activities along with probability of achieving objectives.

2.3. Employee Based Brand Equity

Brand value has been a subject of interest in many academic study and application. Brand value or brand equity is one of the most valuable assets if the company (Keller and Lehmann, 2006). Brand is used for defining source of a product, assign responsibility to manufacturer, decrease consumer product search and cost risk, create a promise, emphasize quality and create a symbolic bond (Keller, 1998). Together with this owner of the brands, which keep their promise, benefit financially. Because of this, brands are assets which create value for companies (Interbrand, 2007).

Brands make promises to fulfill consumers' expectations. Therefore, brands must have a certain value in order to create a good perception. Not only the physical elements but also the unique value that is identified with the brand itself is referred to as brand equity (Başı and Ok, 2022).

According to King and Grace (2009), successful brands are successful because they have high brand value creation capabilities. Pappasolomou and Vrontis (2006) suggested that companies which have high brand value also have high brand loyalty, name awareness, perceived quality, strong brand association and reliability characteristics. Generally, there are two brand value concepts which are financial or customer based (Kim et al., 2003). Financial brand value can be considered as monetary evaluation of the brand (King and Grace, 2009). On the other hand, customer based brand value reflects brand value from customers angle (Keller, 1998; 45).

In their (1994) study Heskett et al. have developed a service-profit chain model in order to demonstrate relationship between customer, employees and profit. This model indicates a chain reaction starts with high quality internal support and policies, continues with employee satisfaction and loyalty and finally ends with company's profitability and growth (Heskett et al., 1994). Therefore, it can be understood from service-profit chain that employee satisfaction, loyalty and productivity is important for company's profitability. Good behavior towards employees have positive financial effects in addition to its good to have characteristics (King and Grace, 2009).

In line with service-profit chain model, expansion of brand value approach is needed. Benefits which derived from internal brand management are defined as employee based brand equity. Investment in employee based brand equity effects customer based brand equity in a positive way and customer based brand equity has positive effect on financial brand equity (King and Grace, 2009).

According to Ambler (2003), first customer of the company has been its employees. Various academicians and practitioners argued that in order to create and develop a brand value, companies must have good employees (Ambler, 2003; Keller, 1998; King and Grace, 2009; Mitchell, 2002). Howard Schultz, head of Starbucks board, argued that in order to exceed customer expectations, it is necessary to build trust between employees and company. If employees are aware of their roles and duties inside the organization, brand can keep its promise

to its customers (Kwon, 2013: 47). In order to keep brand promise, employees are needed (Harris and de Charnatony, 2001).

Internal branding is becoming more important each day in both academic and industrial environment. Companies, develop internal branding or internal marketing in order to enhance employee based brand equity (Burmam et. Al, 2009; Keller, 1998; Pappasolomou and Vrontis, 2006). Health management is a good example for this. According to Berry (1981), internal branding throughout company is considered as assuming employees as internal customers, considering work done in company as products which meets the needs and requests of internal customers by taking company's objective into account. Kotler and Armstrong (1991) described internal branding as training employees in customer relations and support towards customer (Kotler and Armstrong, 1991; 607).

In their (2009, 2010) study, King and Grace examined differentiating effect of company's brand and brand orientation. They have gathered information in the interviews they made about companies which have high brand knowledge and keep brand promise. Their study showed that high brand knowledge level is coherent with internal and external communication. In his study which he adapted from King and Grace (2009, 2010) and Aaker (1991), Kwon (2013) argued that employee based brand equity consisted of three dimensions. These dimensions are brand knowledge, role clarity and brand commitment.

Brand Knowledge: According to Keller (1998), brand knowledge is a function which is related to consumer's perception and association of brand and its image. Peter and Olson (2001) suggested that since brand knowledge is related to cognitive reflection of the brand, its importance should be considered in same way in internal brand management. Keller (1993)'s cognitive customer based brand value approach and employee brand knowledge is defined according to human cognitive activities (Kwon, 2013: 59). King and Grace (2009) suggests that employees' brand identity should be interpreted according to what brand means to them and how they do their jobs. In literature, most accepted aspect in employee based brand equity is awareness level of brand vision throughout employees (Ambler, 2003; Kwon, 2013; 61).

Role Clarity: Employees can comprehend what is expected from them clearly when they comprehend their roles/duties inside the organization (Kwon, 2013; 62). Employees' feelings towards uncertainty of their roles and behaviors has negative effect on satisfaction, loyalty, general work relation, organizational performance and organizational effectiveness (Babin and Boles, 1996; Geersbro and Ritter, 2010; House and Rizzo, 1972; Brief and Aldag, 1976). Employees who comprehend their roles clearly performs better and they feel like they belong to company they are working for (Mukherjee and Malhotra, 2006).

Brand Commitment: Burmann and Zeplin (2005) defined brand commitment as employees' psychological attachment which makes them perform with extra effort willingly in order to achieve brand's objectives. Empirical evidence from studies show that brand commitment affect employee satisfaction, brand citizenship behavior and desire to stay in organization in a positive way (King and Grace, 2010; Bloemer and Odekerken-Schröder, 2006; Burmann et al., 2009; Moorman et al., 1993; Meyer and Allen, 1991; Steers, 1977). Ambler (2003), argued that brand commitment is the most important variable in brand equity in internal brand management. In internal branding process, commitment increases employees' behavioral loyalty, attitudinal commitment and tendency to stay at job. Therefore, it is a key parameter in employee based brand equity.

Current market requires companies to maximize their financial brand equity. In order to achieve that, customer based brand equity which is affects brand equity directly and employee based brand equity which affects customer based brand equity directly gains importance. (King and Grace, 2009) There are some studies in literature regarding relationship between leadership and employee based brand equity. In addition, there are several studies about relationship between leadership and innovation, relationship between R&D performance and companies' performance. Wei (2022) suggested that brand oriented leadership affects employee based brand equity in a positive way. Li et al. (2019) suggested there is positive relationship between leadership and innovative behavior. In order to bring leadership, R&D performance and employee based brand equity together and investigate their relationships, the focus of this study is relationship between transformational leadership, R&D performance and employee based brand equity.

3. RESEARCH METHODOLOGY and HYPHOTHESES

Aim of this research is measuring relationship between transformational leadership, R&D performance and employee based brand equity together with examining mediating effect of R&D performance on the relationship between transformational leadership and employee based brand equity.

In this research, transformational leadership, R&D performance and employee based brand equity of managers and manager candidates aimed to be measured. Afterwards, relationship between transformational leadership and R&D performance is measured at first. Secondly, relationship between R&D performance is measured and third, mediating role of R&D performance on the relationship between transformational leadership and employee based brand equity were measured in order to comprehend how variables effect each other. Therefore following hyphoteses are developed;

H1: Transformational leadership has a relationship with R&D performance.

H2: R&D performance has a relationship with employee based brand equity.

H3: Transformational leadership has a relationship with employee based brand equity.

H4: R&D performance has mediating effect on relationship between transformational leadership and employee based brand equity.

This research was conducted by collecting data from 135 R&D department employees who work as managers or manager candidates at largest defence company in Ankara which is capital city of Turkish Republic and the place where most of the defence companies are located. Survey method was used to collect data from participants. The survey consisted of four sections. First section was about demographic information, second section included questions regarding transformational leadership traits of participants, third section of the survey consisted of question about R&D performance and forth section included questions regarding employee based brand equity. In order to measure transformational leadership traits, Multi-Factor Leadership Questionnaire (MLQ) which was develope by Bass and Avolio. R&D performance was measured using Hirst's R&d performance questionnaire. Employee based brand equity was measured using Kwon's Employee Based Brand Equity scale. Transformational leadership, R&D performance and employee based brand equity questions were consisted of 5 point Likert scale questions. Statistical data was analyzed using SPSS (Statistical Packages for Social Sciences) for Windows. Using SPSS and the date, frequency, validity, reliability, Pearson correlation and regression analysis were applied.

Theoretical model of the study is given in Fig-1.

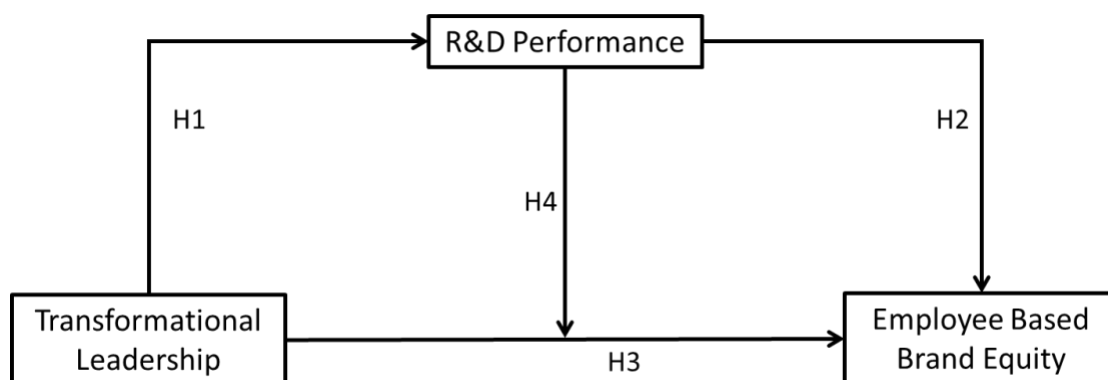


Fig-1 Theoretical Model of the Study

4. FINDINGS

In order to test if sample size is sufficient, Kaiser-Meyer-Olkin (KMO) test and Bartlett sphericity test was applied. In addition, reliability test was applied to test if scales are statistically reliable. Validity and reliability test results are given in Table-1.

Table-1 Reliability and Validity Test Results

Variable	Cronbach's Alpha Value
Transformational Leadership	0,839
R&D Performance	0,927
Employee Based Brand Equity	0,927
KMO Test	0,851
Bartlett Test	Chi-Square: 4449,234 Sig. :0.000

According to Table-1, Cronbach's Alpha coefficients of values are, 0.0839 for Transformational Leadership, 0.927 for R&D Performance and 0.927 for Employee Based Brand Equity. These results indicate that measurements are reliable statistically. Validity results show that sample size is meritorious.

Participants' frequency distribution of the demographic characteristics are given in Table-2.

Table-2 Demographic Characteristics of the participants

		N	Frequency (%)
Gender	Female	25	18.5
	Male	110	81.5
Age	Less than 25 years	1	0.7
	Between 26-30 years	29	21.5
	Between 31-35 years	34	25.2
	Between 36-40 years	19	14.1
	More than 41 years	52	38.5
Job Experience	Less than 5 years	21	15.6
	Between 6-10 years	32	23.7
	Between 11-15 years	23	17.0
	Between 16-20 years	14	10.4
	More than 21 years	45	33.3
Marital Status	Married	94	69.9
	Single	41	30.1
Total		135	100

%81.5 of the participants are male (N=110), %18.5 are females (N=25). Most of the participants are male. According to the data, number of male employees are more than number of female employees in Turkish defence sector. %0,7 of the participants (N=1) are younger than 25 years, %21.5 of the participants (N=29) are between 26-30 years old, %25.2 of the participants (N=34) are between 31 and 35 years old, %14.1 of the participants (N=19) are between 36 and 40 years old and %38.5 of the participants (N=52) are older than 40 years. Job experience frequencies of the participants are distributed as %15,6 less than 5 years (N=21), %23.7 are between 6 and 10 years (N=32), %17.0 are between 11 and 15 years (N=17), %10.4 are between 16 and 20 years (N=14) and %33.3 are more than 21 years (N=45). %69.9 of the participants (N=94) are married and %30.1 of the participants (N=41) are single.

Mean value, and Pearson correlation coefficients of transformational leadership, R&D performance and employee based brand equity are given in Table-3.

Table-3. Mean and Pearson Correlation Coefficients

	Mean	S.D.	1	2	3
1. Transformational Leadership	3.854	0.43	1	-	-
2. R&D Performance	3.761	0.55	0.514**	1	-
3. Employee Based Brand Equity	4.09	0.47	0.508**	0.564**	1
**p<0.01; S.D.:Standard Deviation					

As indicated in the Table-3, Pearson correlation analysis show that; there is a positive and meaningful relationship between transformational leadership and R&D performance ($r=0.514$, $p<0.01$). R&D performance and employee based brand equity are also positively related and relationship is meaningful ($r=0.564$, $p<0.01$). The relationship between transformational leadership and employee based brand equity is also positive and meaningful ($r=0.508$, $p<0.01$).

In order to test suggested effect of transformational leadership on R&D performance and employee based brand equity, three simple linear regression analysis models have been formed. Model 1 is used for testing relationship between transformational leadership and R&D performance which is asserted as H1, Model 2 is used for testing relationship between R&D performance and employee based brand equity which is asserted as H2, Model 3 is used for testing relationship between transformational leadership and employee based brand equity which is asserted as H3. Multiple regression analysis model (Model 4) has been formed in order to measure mediating effect of R&D performance on relationship between transformational leadership and employee based brand equity which is asserted has H4. Results of simple linear regression analysis are given in Table-4.

Table-4. Results of Regression Model 1 and Model 2

Model	Regression Coefficients			Model Statistics
	B	Std. Error	β	
Model 1 I.V.: Transformational Leadership D.V.: R&D Performance	0.655	0.095	0.514	$R^2 = 0.264$ $F = 47.699$ $p = 0.000$
Model 2 I.V.: R&D Performance D.V.: Employee Based Brand Equity	0.484	0.061	0.564	$R^2 = 0.318$ $F = 62.035$ $p = 0.000$
Model 3 I.V.: Transformational Leadership D.V.: Employee Based Brand Equity	0.556	0.082	0.508	$R^2 = 0.258$ $F = 46.288$ $p = 0.000$
Model 4 I.V.1: Transformational Leadership I.V.2: R&D Performance D.V.: Employee Based Brand Equity	0.324 0.353	0.087 0.068	0.297 0.412	$R^2 = 0.383$ $F = 40.943$ $p = 0.000$
I.V. : Independent Variable; D.V.: Dependent Variable $p = 0.000$ Sobel Test: 4,147 Std. Hata:0,056 p-değeri: 0.000				

According to Table-4, transformational leadership's effect on R&D performance is statistically meaningful and positive ($\beta: 0.514$; $p<0.01$). Transformational leadership explains %26.4 of the change in R&D performance as R^2 is equal to 0.264. Basic linear regression analysis show that transformational leadership has a positive and meaningful effect on R&D performance, as a result of this "H1: Transformational leadership has a relationship with R&D performance." is supported. Results also show that R&D performance's effect on employee based brand equity is statistically meaningful and positive ($\beta: 0.564$; $p<0.01$). R&D performance explains %31.8 of the

change in employee based brand equity as R^2 is 0.318. Analysis show that “H2: R&D performance has a relationship with employee based brand equity.” is supported. Effect of transformational leadership and employee based brand equity is statistically meaningful and positive (β : 0.508; $p < 0.01$). Transformational leadership explains %25.8 of the change in the employee based brand equity since R^2 is 0.258, therefore “H3: Transformational leadership has a relationship with employee based brand equity.” is supported.

When transformational leadership’s and R&D performance’s effect on employee based brand equity was examined together using multiple linear regression analysis, both variables have statistically meaningful and positive relationship (β : 0.297; $p < 0.01$ and β : 0.412; $p < 0.01$ respectively). After R&D performance is added to regression model, transformational leadership’s effect on employee based brand equity decreases as (β : 0.514; $p < 0.01$) decreases to (β : 0.297; $p < 0.01$). Sobel test also shows that mediating effect is meaningful. These results shows that R&D performance has partial mediating effect on the relationship between transformational leadership and employee based brand equity, therefore “H4” is supported.

5. CONCLUSIONS AND DISCUSSION

Branding is an essential aspect for companies to compete in current dynamic market (Huang and Tsai, 2013). In this volatile environment, companies desire to build brand equity, in order to build their brands companies’ strategies plays an important role (Wei, 2022). One of the first and primary issues you need to pay attention to in order to brand in the age we are in is to create a corporate identity. One of the most important elements of an association, business or brand is to create a corporate identity. Corporate identity and branding is a process that should be followed closely (Ok and Başı, 2021).

Scholars accepted that employees have a significant role in building companies’ brands (Boukis and Christodoulides, 2020; Liu et. al., 2020). In order to build financial brand equity, companies need to build customer based brand equity and to build customer based brand equity, companies need to build employee based brand equity (King and Grace, 2009). When considered within the scope of marketing management, brand; It is of critical importance for businesses, consumers, intermediaries and the country. In the current period, businesses are making great efforts to build a strong brand and they understand the importance of the strategic brand management process. In this context, studies are carried out on the concept of brand personality as an element that differentiates and highlights the brand against its competitors (Ok and Başı, 2019). Because of this, employee based brand equity is main focus of this study.

R&D is related to innovation of companies and innovation is a vital element for a company to have competitive advantage in the market. Employees have to be managed effectively in a company as teams in order to achieve objectives of both company and R&D departments, therefore leadership can be considered as a key element. Since market always changes and innovation is a key element in changing environment, in this study relationship between transformational leadership, R&D performance and employee based brand equity is examined.

Results of this study have provided information regarding relationship between transformational leadership, R&D performance and employee based brand equity. This study includes data gathered from R&D managers and manager candidates from multiple companies that operate in defence sector because R&D is one of the most important departments in that sector. Employee based brand equity, R&D performance and transformational leadership traits of the managers and manager candidates have been measured using their own evaluation. Employee based brand equity, R&D performance and transformational leadership trait values are considered objective since data have been collected from different organizations, questionnaires are verified measurement models and reliability tests also provide good results.

Results show that, R&D performance is positively and meaningfully affected by transformational leadership. This shows that choosing managers, who have high transformational leadership traits, for R&D organizations is advantageous as Braun et. al. (2013) and Keller (2006) suggested. For companies to sustain themselves, they need to be innovative in current changing market. It can be said that, in order to have high R&D performance and innovation, in other words to have a competitive advantage in the market, having transformational leaders in the company is critical.

As Wei (2022) indicates that brand oriented leadership positively effect employee based brand equity, this study also shows that transformational leadership has positive and meaningful effect on employee based brand equity. Choosing managers who have high transformational leadership traits are also advantageous for employee based brand equity. Since companies desire to build brand value and employee based brand equity is an important part of it, this study's results show that transformational leadership should be also an important aspect in a company that desires to be sustainable and successful.

R&D performance has positive and meaningful effect on employee based brand equity and it also has partial mediating effect on relationship between transformational leadership and brand equity. This result show that, transformational leadership may not directly main influencer for employee based brand equity but it can affect it through the mediation of R&D performance. Therefore, companies need to be innovative and have high R&D performance in order to build their brands through employee based brand equity.

A limitation of the study is that demographic differences' effect on transformational leadership, R&D performance and employee based brand equity could not be measured due to limited participation. For example, 25 of the participants female and 110 of them are male. For future study, larger and balanced gender sample can be used by having data collected from more companies and more participants to check if demographic differences has an effect on variables so R&D managers can be chosen accordingly. With wider and more balanced participation, relationship between tranformational leadership, R&D performance and employee based brand equity can be understood with a more clear manner.

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