

**T.C.
BAHÇEŞEHİR ÜNİVERSİTESİ**

**GRADUATE SCHOOL OF SOCIAL SCIENCES
BUSINESS ADMINISTRATION PHD PROGRAM**

**MULTI DIMENSIONAL FACTORS ON
PRESCRIPTION BEHAVIOR AND THEIR
IMPACT ON PRESCRIPTION BEHAVIOR**

PhD Thesis

İ.BUĞRA DOĞANCI

**Thesis Supervisor: ASST. PROF. DR. GÜLBERK GÜLTEKİN
SALMAN**

İSTANBUL, 2015



**REPUBLIC OF TURKEY
BAHÇEŞEHİR UNIVERSITY
GRADUATE SCHOOL OF SOCIAL
SCIENCE INSTITUTE**

09/06/2015

We hereby recommend that the dissertation prepared under our supervision by **İbrahim Buğra DOĞANCI** entitled **“Multi Dimensional Factors on Prescription Behavior and Their Impact on Prescription Behavior”** be accepted in partial fulfillment of the requirements for the Degree of Doctor of Business Administration.

Assist. Prof. Dr. Gülberk GÜLTEKİN SALMAN
Thesis Supervisor

Recommendation concurred in:

Committee Members

Prof. Dr. Elif ÇEPNİ

Assoc. Prof. Dr. İpek ALTINBAŞAK FARINA

Assoc. Prof. Dr. Figen YILDIRIM

Assist. Prof. Dr. Zeynep B. ŞAHİNOĞLU

Approved:

Prof. Dr. Ümit EROL
Program Coordinator

Assist. Prof. Dr. Burak KÜNTAY
Director of Graduate School of Social Sciences

ÖNSÖZ

İşletme alanında doktora yapmak gibi zorlu bir sürece dahil olurken daha önce yapmış olduğum işletme lisansı ve işletme yüksek lisansının beni en çok etkileyen faktörlerin olduğunu düşünürdüm. Ancak sürece dahil olduktan sonra, en çok etkileyen faktörlerin günlük hayatımda pazarlamacı olan birisi olarak teoride ve pratikte edinmiş olduğum bilgilerin aslında daha derinsel boyutlarda sorgulanması olduğunu farkettim. Doktora süresince edinilmiş olan ve derinlemesine sorgulanabilinen bilgiler günlük uygulamalarda çok daha anlamlı bir düzeyde değerlendirilebiliyor. Tabi ki bunu sağlayan en önemli etkenlerden birisi de, bu ortamı sağlayan kişilerin bilimsel ve vizyonel seviyeleri oldu. Öncelikle bu programa dahil olmam noktasında bana güvenerek bu ortamı sağlama kişi olan Prof.Dr.Selime SEZGİN'e sonsuz teşekkürlerimi sunarım. Yine bu programa başlamamda beni her zaman destekleyen ve mesai saati sorgulanmaksızın derslerimi takip etmemi sağlayan, vizyonuna inandığım eski yöneticim Dr.Kürşad KOÇ'a şükranlarımı sunarım. Yine aynı şekilde çalışmalarım süresince beni her zaman destekleyen, yeterlilik çalışmalarım süresince destek olan eski yöneticim Uzm.Dr.Orkan KARACA'ya teşekkürlerimi sunarım. Bununla birlikte çalışmalarım süresince her konuda destek olan, görüşlerini bildiren ve motivasyonumu yükselten saygıdeğer hocalarım Doç.Dr.İpek ALTINBAŞAK ve Prof.Dr.Serdar PİRTİNİ'ye teşekkürlerimi sunarım. Çalışmalarım boyunca da beni sabırla dinleyen, destek olan, kendisinin de doktora başlaması ile beni daha da iyi anlayan canım eşim Müge Doğancı'ya çok teşekkür ederim. Öte yandan bugünlere gelmem de büyük pay sahibi olan ve öğretmenliği boyunca bize hep okumayı sevdiren sevgili annem Şükriye DOĞANCI ve yaşına rağmen hayata tutunmayı öğreten sevgili babam Mehmet DOĞANCI'ya saygı ve şükranlarımı sunuyorum. Son olarak, tez çalışmalarım süresince bana liderlik eden, yönlendiren, en sıkıcı zamanlarda motive edici sözleri ile çalışmalarına hızlı şekilde dönmemi sağlayan değerli hocam ve danışmanım Yrd. Doç. Dr. Gülberk Gültekin SALMAN'a çok teşekkür ederim.

İstanbul, 2015

Buğra DOĞANCI

ABSTRACT

MULTI DIMENSIONAL FACTORS ON PRESCRIPTION BEHAVIOR AND THEIR IMPACT ON PRESCRIPTION BEHAVIOR

İ.Buğra Doğancı

PhD in Marketing

Thesis Supervisor: Asst. Prof. Gülberk Gültekin Salman

May 2015, 162

The purpose of this study is to present a model presenting the impact factors in the pharmaceutical industry and their impact on brand satisfaction and brand loyalty, which are also impacting factors of prescription behavior. There are three main constructs in the study, which are company linked factors, product linked factors and prescriber linked factors. Company linked factors have three dimensions as corporate reputation, pharmaceutical sales representative and advertising/promotion. Product linked factors have three dimensions such as brand awareness, brand personality and perceived drug quality. Finally prescriber linked factors are classified as specialty, experience of prescriber, daily patient visits and type of institution. In testing the model company linked factors and product linked factors impact are used and relations have been defined.

This study is done with 331 physicians from various locations of Turkey. Mainly family practitioners, ENT specialists, pediatricians and general surgeons participated to the study. There are also participants from the other specialties. In study, one of the most commonly used and prescribed product in the pharmaceutical industry has been chosen. This product's awareness is very high and it has been in the market for more than 20 years in Turkey and worldwide. Company linked factors and product linked factors impact on prescription behavior model is validated. However some relations of sub dimensions have not been meaningful in the study to impact brand satisfaction and brand loyalty.

Keywords: Company Linked Factors, Product Linked Factors, Prescriber Linked Factors, Brand Satisfaction and Brand Loyalty

ÖZET

REÇETELEME DAVRANIŞLARINI ETKİLEYEN ÇOK BOYUTLU FAKTÖRLER VE BU FAKTÖRLERİN REÇETELEME DAVRANIŞI ÜZERİNDEKİ ETKİLERİ

İ.Buğra Doğancı

PhD in Marketing

Tez Danışmanı: Yrd. Doç. Dr. Gülberk Gültekin Salman

Mayıs 2015, 162

Bu çalışmanın amacı hekimlerin ürün reçetelemesine etki eden çok boyutlu faktörleri tanımlamak ve bu faktörlerin ürün tatmini ve ürün bağlılığı, dolayısıyla reçeteleme davranışları üzerindeki etkilerini araştırmaktır. Bu çalışmada şirket ile ilgili faktörler, ürün ile ilgili faktörler ve reçeteleyen kişinin faktörleri olmak üzere üç ana faktör incelenmiştir. Aynı zamanda bu faktörlerin farklı alt boyutları da bulunmaktadır. Örneğin şirket faktörlerinin alt boyutları şirket itibarı, tıbbi satış temsilcisi ve ürün pazarlama faaliyetleridir. Ürün faktörlerinin alt boyutları marka farkındalığı, marka kişiliği ve ürün kalitesidir. Reçeteleyicinin alt faktörleri uzmanlık, görev yaptığı ünite tipi, günlük hasta sayısı ve hekimlik tecrübe süresidir. Çalışma modeli test edilirken şirket faktörleri ve ürün faktörleri dikkate alınmıştır. Bununla birlikte faktörlerde yer alan alt boyutların da reçeteleme davranışları üzerindeki etkisi incelenmiştir.

Çalışmaya Türkiye'nin farklı bölgelerinden ve uzmanlıklarından 331 kişi katılmıştır. Ağırlıklı olarak aile hekimleri, kulak burun boğaz uzmanları, pediatristler ve genel cerrahlar çalışmaya dahil edilmiştir. Çalışmada ürün olarak dünya ve Türkiye genelinde 20 yıldan uzun zamandan beri reçetelenen ve kullanılan ürün referans alınmıştır. Şirket faktörleri ve ürün faktörleri ile kurulan model kabul edilmiş ve ürün tatmini ile ürün bağlılığı üzerinde anlamlı etkiler bulunmuştur. Bununla birlikte yapılan analizlerde bazı alt boyutlar ile bağımlı değişken arasında anlamlı ilişkiler bulunmamıştır.

Anahtar Kelimeler: Şirket Faktörleri, Ürün Faktörleri, Hekim Faktörleri, Marka Tatmini ve Marka Bağlılığı

CONTENTS

TABLES	ix
FIGURES	xi
ABBREVIATIONS	xii
SYMBOLS	xiv
1. INTRODUCTION.....	1
2. LITERATURE REVIEW.....	3
2.1 FACTORS LINKED TO THE COMPANIES.....	3
2.1.1 Corporate Reputation.....	3
2.1.2 Pharmaceutical Sales Representative.....	8
2.1.2.1 Pharmaceutical sales representative professional value	8
2.1.2.2 Characteristics of the relationship	10
2.1.3 Factors Linked to Advertising/Promotion Activities	12
2.1.3.1 Detailing.....	14
2.1.3.2 Tangible rewards	17
2.1.3.2.1 Gifts.....	18
2.1.3.2.2 Sampling	20
2.1.3.2.3 Sponsorship	21
2.2 FACTORS LINKED TO THE PRODUCTS	22
2.2.1 Branding Concept	23
2.2.2 Brand Personality.....	33
2.2.3 Brand Awareness.....	40
2.2.4 Perceived Quality	43
2.3 FACTORS LINKED TO PRESCRIBER.....	44
2.4 PRESCRIPTION BEHAVIOR	46
2.4.1 Brand Satisfaction.....	51
2.4.2 Brand Loyalty	53
3. METHODOLOGY.....	57
3.1 CONCEPTUAL FRAMEWORK.....	57
3.1.1 Aim of the study.....	57
3.1.2 Research Questions	60
3.1.3 Measurement Scales.....	62

3.1.4 The Model and the Hypotheses	69
3.2 QUALITATIVE RESEARCH	75
3.2.1 In-depth Interviews	75
3.2.1.1 In-depth interview	75
3.3 QUANTITATIVE RESEARCH.....	79
3.3.1 Pilot Study	79
3.3.2 Data Collection Method and Design	80
3.3.3 Target Population and Sampling Method.....	80
3.3.4 Data Analysis Methods	83
3.3.4.1 Preliminary data analysis.....	83
3.3.4.2 Exploratory factor analysis.....	83
3.3.4.3 Confirmatory factor analysis.....	86
3.3.4.4 Structural equation modeling (SEM).....	87
3.3.4.4.1 Evaluation of model fit.....	89
3.3.4.4.2 Path analysis.....	92
3.3.4.5 Regression analysis	93
3.3.4.5.1 Terminologies of regression analysis	94
3.3.4.5.2 Types of multiple regressions	95
3.3.4.6 Correlation analysis.....	96
3.3.4.7 Independent samples t-test.....	97
3.3.5 Multicollinearity	97
3.3.6 Validity and Reliability	98
3.3.6.1. Validity.....	98
3.3.6.1.1 Convergent validity.....	98
3.3.6.1.2 Content (face) validity	99
3.3.6.1.3 Discriminant validity.....	99
3.3.6.2 Reliability.....	99
3.4 DATA ANALYSIS AND RESULTS.....	101
3.4.1 Pilot Study.....	101
3.4.2 Main Study.....	102
3.4.2.1 Examining the data.....	102
3.4.2.1.1 Missing data.....	102
3.4.2.1.2 Assessment of normality.....	103
3.4.2.2 Sample characteristics.....	104

3.4.2.3 Factor analysis	108
3.4.2.3.1 <i>Exploratory Factor Analysis</i>	108
3.4.2.4 Reliability of constructs.....	114
3.4.2.5 Validity of constructs.....	115
3.4.2.6 Confirmatory factor analysis.....	119
3.4.2.6.1 <i>CFA for factors</i>	119
3.4.2.7 SEM and path Analysis.....	128
3.4.2.8 Correlation analysis.....	135
3.4.2.9 Regression analysis results.....	137
3.4.2.9.1 <i>Company linked factor relations with</i> <i>brand satisfaction</i>	137
3.4.2.9.2 <i>Company linked factor relations with brand</i> <i>loyalty</i>	139
3.4.2.9.3 <i>Product linked factor relations with brand</i> <i>satisfaction</i>	141
3.4.2.10 Multicollinearity	143
3.4.2.11 ANOVA tests for demographic variable.....	144
3.4.2.11.1 <i>ANOVA test for specialty</i>	144
3.4.2.11.2 <i>ANOVA test types of institutions</i>	145
3.4.2.11.3 <i>ANOVA test for patient number per day</i>	146
3.4.2.11.4 <i>ANOVA test for physicians' experience</i>	147
3.4.3 Final Model of the Study	149
4. CONCLUSION.....	150
4.1 DISCUSSION AND RECOMMENDATIONS	151
4.2 CONTRIBUTIONS OF THE STUDY.....	159
4.3 LIMITATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH	160
REFERENCES	163
APPENDICES	189
Appendix 1 Interview Questions.....	190
Appendix 2 Main Study Questionnaire in Turkish.....	192
Appendix 3 Main Study Questionnaire in English	197
Appendix 4 Measures of the Constructs and Descriptive Statistic.....	202

TABLES

Table 2.1: Discipline and Categorization of Reputation.....	7
Table 2.2: Physicians' expectations of gift	19
Table 2.3: Positioning map of Pharmaceutical Product.....	26
Table 2.4: Benefits of Branded Pharmaceuticals	27
Table 2.5: The Importance of Factors in Remembering the Names of the Brands.....	42
Table 3.1: The Reputation Quotient.....	63
Table 3.2: Variable in the Model	68
Table 3.3: Factors of Influence on the Behavior of Prescription of the Drugs	69
Table 3.4: Objectives of Exploratory Factor Analysis.....	83
Table 3.5: CFA steps for analysis	86
Table 3.6: Recommended Fit Indices.....	92
Table 3.7: The Pearson Correlation Coefficient	96
Table 3.8: Pearson Correlation Coefficient and Strength of Relationship.....	96
Table 3.9: Reliability of the Variables in the Pilot Study	102
Table 3.10: Prescribing figures per week.....	104
Table 3.11: Specialty of the respondents	105
Table 3.12: Profile of the respondents	106
Table 3.13: Location of respondents.....	107
Table 3.14: Exploratory Factor Analysis (EFA) Results	108
Table 3.15: Exploratory factor analysis for corporate reputation	109
Table 3.16: Exploratory Factor Analysis for PSR	110
Table 3.17: Exploratory Factor Analysis for Advertising and Promotion	111
Table 3.18: Exploratory Factor Analysis for Brand Awareness	111
Table 3.19: Exploratory Factor Analysis for Brand Personality.....	112
Table 3.20: Exploratory Factor Analysis for Perceived Quality.....	113
Table 3.21: Brand Satisfaction and Their Description.....	113
Table 3.22: Brand Loyalty and Their Description	114
Table 3.23: Reliability of constructs	115
Table 3.24: Convergent validities of constructs.....	116
Table 3.25: AVE and squared correlation of corporate reputation construct	116
Table 3.26: Squared correlation of corporate reputation	117
Table 3.27: AVE values of PSR construct.....	117
Table 3.28: Squared correlation of pharmaceutical sales representatives.....	117

Table 3.29: Discriminant validities of brand personality.....	118
Table 3.30: Squared correlation of brand personality.....	118
Table 3.31: Discriminant validities of drug perceived quality.....	118
Table 3.32: Squared correlation drug perceived quality	119
Table 3.33: Summary of CFA.....	128
Table 3.34: Summary of proposed model relations	130
Table 3.35: Model fit indicators for the proposed model.....	130
Table 3.36: Model fit indicators for the final model.....	132
Table 3.37: Summary of proposed model relations	134
Table 3.38: Comparison of proposed model and final model.....	134
Table 3.39: Correlation Analysis	136
Table 3.40: Regression analysis of company linked factors and brand satisfaction.....	138
Table 3.41: Company linked factors and brand satisfaction regression coefficients....	138
Table 3.42: Hypothesis list for company linked factors on brand satisfaction	138
Table 3.43: Regression analysis of company linked factors and brand loyalty	140
Table 3.44: Company linked factors and brand loyalty regression coefficients.....	140
Table 3.45: Hypothesis list for company linked factors on brand loyalty	141
Table 3.46: Regression analysis of product linked factors and brand satisfaction	142
Table 3.47: Product linked factors and brand satisfaction regression coefficients.....	142
Table 3.48: Hypothesis list for company linked factors on brand satisfaction	143
Table 3.49: VIF and Tolerance Values	144
Table 3.50: ANOVA Test for specialty	145
Table 3.51: Hypothesis for specialty.....	145
Table 3.52: ANOVA test for types of institution.....	146
Table 3.53: Hypothesis for types of institutions	146
Table 3.54: ANOVA test for patient number per day.....	147
Table 3.55: Hypothesis for patient number per day	147
Table 3.56: ANOVA test for physicians' experience	148
Table 3.57: Bonferroni test of physicians' experience.....	148
Table 3.58: Hypothesis for prescriber's experience.....	148

FIGURES

Figure 2.1: Comparison of Pharma and FMCG Brands Life	28
Figure 2.2: A Brand's Distinctive Characteristics as Being More Than a Product.....	32
Figure 2.3: Brand Identity Categories.....	34
Figure 2.4: Brand Personality Dimensions	37
Figure 2.5: The Model of Mehrabian-Russell.....	48
Figure 3.1: Corporate Reputation Quotient Index.....	63
Figure 3.2: Brand Personality Dimensions	66
Figure 3.3: Model of the Study	72
Figure 3.4: Total Pharmaceutical Market.....	82
Figure 3.5: Pharmaceutical Consumption in Volume Terms by.....	82
Figure 3.6: The 5-step exploratory factor analysis protocol	84
Figure 3.7: CFA for Corporate Reputation	120
Figure 3.8: CFA for Pharmaceutical Sales Representatives	121
Figure 3.9: CFA for Advertising Promotion.....	122
Figure 3.10: CFA for Brand Awareness	122
Figure 3.11: CFA for Brand Personality.....	124
Figure 3.12: CFA for Drug Perceived Quality.....	125
Figure 3.13: CFA for Brand Satisfaction	126
Figure 3.14: CFA for Brand Loyalty.....	127
Figure 3.15: Proposed SEM Model.....	129
Figure 3.16: Final SEM Model	131
Figure 3.17: Final Model of the Study.....	149

ABBREVIATON

AGFI	:	Adjusted goodness-of-fit index
AMA	:	Alternative Models Approach
AMOS	:	Analysis of moment structures
AVE	:	Average variance extracted
CFA	:	Confirmatory factor analysis
CFI	:	Comparative fit index
CME	:	Continuous Medical Education
CR	:	Construct reliability
EFA	:	Exploratory factor analysis
EIS	:	Ethnic identity scale
EIU	:	Economist Intelligence
ENT	:	Ear nose and throat specialist
FMCG	:	Fast Moving Consumer Goods
GFI	:	Goodness-of-fit index
ICU	:	Intensive Care Unit
KMO	:	Kaiser-Meyer-Olkin
LISREL	:	Linear structural relations
LOY	:	Loyalty
MGA	:	Model Generating Approach
NFI	:	Normed fit index
NNFI	:	Non-normed fit index
PAF	:	Principal Axis Factoring
PCA	:	Principal Component Analysis
PGFI	:	Parsimony goodness-of-fit index
PNFI	:	Parsimony normed fit index
PSR	:	Pharmaceutical Sales Representative
R&D	:	Research and Development
RMSEA	:	Root means square error of approximation
SRMR	:	Standardized Root Mean Square Residuals
SCA	:	Strictly Confirmatory Approach

SEM	:	Structural equation modeling
SPSS	:	Statistical package for social sciences
TLI	:	Tucker-Lewis index
TR	:	Turkey
VIF	:	Variance inflation factor

SYMBOLS

Chi square	:	χ^2
Coefficient alpha	:	α
United States Dollars	:	\$
Euro	:	€

1. INTRODUCTION

Today's economic environment is becoming more competitive and challenging while product research and development facilities become advanced and new brands are introduced in the pharmaceutical market. The pharmaceutical companies find it more precise to advertise promote their products, so they are obliged to find solutions to keep or increase their brand awareness and success (Lee, Lee and Wu, 2011). Like in the other industries, through with the medico marketing activities, main aim is to increase profitability and provide effective business for the companies. In different industries rather than pharmaceutical market, it is much easier for the customer to make the choice to which brand to be obtained in order to fulfill their necessities via the prescription of the physician (Shamimulhaq, Raheem, Nawaz, Khoso and Vishnu, 2014). On the other hand, “pharmaceutical marketing mix is a set of pharmaceutical promotional tactics used for marketing and selling of product” (Ahmed, 2014, p.8). Therefore, today, global economic market forces most of the pharmaceutical companies to keep their competitive advantage by keeping their brand successes through both strengthening their product research and development facilities and interacting with the physicians (doctors) who are the prescriber of the medical products.

It can clearly be said that, in pharmaceutical market, physicians' prescription behaviors have a very big economic importance to the companies since the approach and prescription choice of the physicians can enable a company to charge a premium for its products, create loyalty to the brand or increase its market value. The objective of pharmaceutical marketing tactics “with respect to customers i.e. prescribing physicians, retail chemists & purchasing consumer i.e. patients” (Shamimulhaq et al. 2014, p.30), the sales promotion activities and sale people's efforts are highly considered for launching the marketing strategy and promoting the pharmaceutical products. In addition, it has been argued that pharmaceutical marketing mix is developed for better understanding of different promotional activities and tactics such as sampling and sales force promotion (Ahmed, Parmar and Ahmed, 2012). Thus, the importance of physicians' prescription choices of the products requires the companies to prioritize brand building facilities, close relationships with sale people, forming attachment through promotions, gift, academic sponsorships, etc.

With all these considerations, it is very important notion for the pharmaceutical companies to understand physician prescription behavior and its underlying reasons. Due to that case, the companies advertising processes are developed and executed on the premise of the physician prescription behavior towards the product. In addition, to make the physician prescription behavior towards the company's brands the sales peoples' contacts and persuasive relations become more important.

The sales people have value as they give more detailed information about the products directly to the physicians while constituting brand awareness and building company image. Besides these issues, there are different factors, which influence the physician prescription behavior. Fundamentally, it has been indicated that the prescription behavior of the physicians "on the new product prescription, branded (generic) product, sponsorships to conferences, promotional tools and free drug samples, to impact the prescription choice and response" (e.g., Iizuka and Jin, 2005; Bednarik, 2005, Goyal and Pareek, 2013; Shamimulhaq et al. 2014).

In the current study, after studying the background literature on the topic, the study is based on the key factors of prescription behavior including branding of the product, sales and promotion activities, promotional tools, company related factors, sales person related factors, prescriber related factors, etc. As a conclusion, the aim of this study is to understand the multidimensional impacting factors on prescription behavior and find out their interactions on prescription behavior with measuring the impact on brand satisfaction and brand loyalty. The study is constructed with the two main parts. In the initial part, the literature review and preliminary explanations on the main concepts of the study are given. In this part mainly the factors linked to prescription behavior are highlighted and the each of the concept is described by discussing the previous studies' implications and findings. After this, the concept of prescription behavior is explained and the factors related to prescription behavior are evaluated. Thus, the conceptual framework and research propositions of the study are presented. In the second part of the study, the research methodology that is used in order to test the propositions of the study is described. Finally, the research procedure and the finding of the statistical analysis are presented and the results are discussed.

2. LITERATURE REVIEW

In this part of the study, “the factors related with prescription behavior” is highlighted and presented. These factors in our study are company-linked factors, product linked factors and prescriber linked factors. In addition, the definitions of these concepts, their various dimensions, how these factors or concepts took place in the literature and impacts for physicians' prescribing behaviors are examined in this part. Finally, brand satisfaction and brand loyalty concepts are presented to understand the probable impact of these factors.

2.1 FACTORS LINKED TO THE COMPANIES

Company linked factors are consisted of three different dimensions in this study which can have impact on prescribing behavior. These dimensions are corporate reputation, sales representatives and advertising/promotion. Each dimension also has sub dimensions in the literature and it is presented in the review.

2.1.1 Corporate Reputation

Corporate reputation is the rising curiosity of companies as intangible assets that provide firms with a competitive advantage in the marketplace (Ponzi et al. 2011). In last decade, intangible assets became more important in general. Today it is crucial to have valuable intangible assets for entering new markets, fostering customer retention and to be advantageous in the competition area. Creating and exploiting them allows companies to drive markets, rather than to be market driven (Schwaiger, 2004).

Corporate reputation is explicitly the holistic approach for the companies and it is the notion that many company managers would like to inaugurate in their organizations. However it is not easy to generate it in the short term and it is also difficult to protect it in the long term. It distinguishes the company from the others and it manages the customer's perception. In different studies, authors concluded that companies which have good reputation, will have competitive advantage. Also they can attract the more customers rather than the others (Ponzi et al. 2011; Schwaiger, 2004; Gardberg et al. 2006).

There are different approaches about what the corporate reputation concept mean in the literature and still there is no an ambiguous generally accepted definition for the term corporate reputation (Gotsi and Wilson, 2001). Also corporate reputation is still relatively new as an academic subject.

As Gotsi and Wilson (2001) emphasized in his study, this notion has been affected from different disciplinary perspectives. They analyzed the economists', accounting researchers', sociologists' and strategists' approaches about the corporate reputation concept and they concluded that following characteristics can be assigned to the concept of corporate reputation (Gotsi and Wilson, 2001, p.28)

“It is a dynamic concept and it takes time to build and manage. Also there is a bilateral relationship between the concepts of corporate reputation and corporate image. It crystallizes a company's perceived ranking in a field of other rivals, different stakeholders may have different reputations of the same company based on their own economic, social and personal background”.

In the initial stage, studies of this corporate reputation area, authors generally focused on the corporate image rather than corporate reputation. Most of the authors in this period (Bernays, 1977; Boorstin, 1961; Boulding, 1973; Budd, 1969; Crissy, 1971; Enis, 1967; Gates and McDaniel, 1972; Kennedy, 1977; Martineau, 1958; Schafhauser, 1967) which are also representative of the analogous school of thought, define the term corporate image “in a way that appears synonymous with corporate reputation” (Gotsi and Wilson, 2001, p.27). Kennedy (1977), one of the most influential writers in this area, emphasized that corporate image is perceived as synonymous with corporate reputation. She notes in her study that “an image, whether of a product or company, takes many years to cultivate” (Kennedy, 1977, p. 124).

Moreover corporate image studies were very fashionable area in the 1960s and 1970s, while the corporate reputation concept was not very commonly studied in the marketing literature at that period. Therefore, it is crucial to examine the corporate image to understand corporate reputation.

From a broad view, image is defined as the view of the company held by stakeholders especially by customers. Image focuses on the outsiders' perceptions rather than the insiders (Davies, Chun, Vinhas and Roper 2001). Company image is the way how the social stakeholder perceives the identity of organization and how it responds to it

(Sakman, 2003). The company image is described as “the consumer’s response to the total offering and is defined as the sum of beliefs, ideas, and impressions that a public has of an organization” (Weiwei, 2007, p.58). Thus, company image “is the result of a process by which customers compare and contrast the various attributes of organizations” (Weiwei, 2007, p.58). Wolf (2010) implied that company image is the selectively perceived mental picture of an organization and the sum total of these perceived characteristic of the company is what people refer to as the company image. It has been debated that the image or the reputation of the pharmaceutical company is an important factor for the physicians to have their intention for prescribing a certain product (Ion, 2013).

Considering corporate image, corporate reputation is a collective term referring to all the stakeholders’ views. As corporate image reflects the outsiders’ view, it also helps to form the corporate reputation of a company, which is necessary for the success of company and the selection decision of the physician regarding the prescription of the drug (Ion, 2013)

Perceived corporate reputation is defined in many different ways by authors in the literature. Some of them defined perceived corporate reputation as outsiders beliefs about what distinguishes an organization from others (Carmeli and Freund 2002; Çiftçioğlu, 2010) and differentiate it from constructed external image or external prestige perception based on insiders and outsiders interpretation of organizational information whereas sometimes insiders organizational prestige perception closed aligned outsider perception (Çiftçioğlu, 2010).

Even within marketing and management literature the term “reputation” is used in different contexts Fombrun (2001). Schwaiger (2004, p.48) has characterized company reputation as:

- i. The result of a corporate branding in the area of marketing
- ii. A signal about future actions and behavior, a pledge that justifies and promotes expectations of a principal about the actions of the agent in the field of principle agent theory
- iii. A kind of goodwill in accounting

- iv. The manifestation of a company identity in the field of organization theory
- v. A potential market entry barrier in the field of management

Inglis, Morley and Sammut (2006,p.1) indicated that reputation is “an important asset which could be used as a competitive advantage and a source of financial performance.” Carmeli and Freund (2002) addressed that reputation is a strategic resource and having a positive reputation means being more attractive than others in the eyes of a company's stakeholders. Roberts and Dowling (2002) told that corporate reputation reflects the extent to which external stakeholders see the firm as good and not bad. Grützmacher (2011, p.24) asserted that "corporate reputation is a stakeholder’s overall evaluation of a company over a period of time and the evaluation is shaped depending on the stakeholder’s direct experiences with the company, any other form of communication and symbolism that provides information about the firm’s actions and a comparison with the actions of other leading rivals".

Fombrun (1997) who is the creator of corporate reputation quotient and who is also accepted as the opinion leader of differentiated school of thought, he provided new corporate reputation dimension. Fombrun (1997) emphasizes that corporate reputation is a cognitive feature of an industry that crystallizes a company’s perceived ranking in a field of other rivals. Fombrun (1997) in his article of corporate landscape, focused on the interaction of the different disciplines and he initiated the mostly used measurement scale of corporate reputation through with the definition of six different disciplines. Corporate reputation quotient is also consisted of six dimensions and can be concluded that it can be linked to these six disciplines’ definition. He views corporate reputation as a crossroads of converging disciplines as showed in table 2.1.

Table 2.1: Discipline and categorization of reputation

Discipline	Categorization of reputation
Accountancy	Reputation seen as an intangible asset and one that can or should be given financial worth.
Economics	Reputation viewed as traits or signals. Perception held of the organization by an organization's external stakeholders.
Marketing	Viewed from the customer or end-user's perspective and concentrating on the manner in which reputations are formed.
Organizational Behaviour	Viewed as the sense-making experiences of employees or the perception of the organization held by an organization's internal stakeholders.
Sociology	Viewed as an aggregate assessment of a firm's performance relative to expectation and norms in an institutional context.
Strategy	Reputation viewed as assets and mobility barriers. Since reputations are based on perception, they are difficult to manage.

Source: Chun, Rosa., 2005. Corporate reputation: Meaning and measurement. *International Journal of Management Reviews*. 7 (2), pp. 91-109.

Additionally, it is stated that the reputation of a company “is created through consistent communication towards the company's stakeholders, including advertising, public relations, websites, logos, media works, sponsorships and other tools of modern company communications”. (Grützmacher, 2011, p.24). Flatt and Kowalczyk (2006) viewed company reputation as a multidimensional construct, where a company's reputation emerges from customers, investors, employees, and the general public and their interactions with each other. According to Ljubojevic and Ljubojevic (2008) corporate reputation is a collective presentation of all participants image, built through the time and based on programs of company identity, its performance and perceptions of its behavior. In addition, the academics (Ljubojevic and Ljubojevic 2008) add that corporate reputation is a part of company's assets along with tangible property, in balance sheet, workforce, social property (relations with suppliers, relations with consumers, local community and regulative institutions), and environmental. Botha, Sanders and Viljoen (2009) implied that company reputation is customer's overall evaluation of a firm based on their own reactions to the firm's goods, services, communication activities, interactions with the firm and its representatives.

In sum, Karaköse (2006) postulated that company reputation is composed of the sum of the perceptions of inside and outside stakeholders and the main components of company reputation are perception and truth. Perception is about how a company is perceived by the stakeholders and how the company's aims and objectives are seen by the external environment people (Karaköse, 2006).

Ljubojevic and Ljubojevic (2008,p.14) implied that “company reputation helps the companies to get good employees, attract consumers, and increase consumers’ loyalty with its four characteristics of credibility, reliability, responsibility and trustworthiness”.

Some of the companies in the pharmaceutical industry have high corporate reputation level with their strong product portfolio (Moss, 2001). Pharmaceutical companies like Sanoofi, Novartis, AstraZeneca etc., have high level of corporate reputation through with their marketing communications (Moss, 2001). Additionally, Wright and Lundstrom (2004) concluded that high level of corporate reputation perception impact the perceptions of pharmaceutical sales representative (PSR). According to studies, if the physicians’ corporate reputation is high and well deserved for the pharmaceutical company, they have tendency to prescribe this company’s drugs, which is also based on the company’s history (Waheed et al. 2011).

2.1.2 Pharmaceutical Sales Representative

In this part, pharmaceutical sales representatives’ functions in the organizations in general and their impact on prescribing behavior in the pharmaceutical industry are examined in various dimensions. There are different dimensions in the literature and dimensions included in this study are professional value, characteristics of the relationship, frequent contact and frequent social contact (Doney and Cannon, 1997).

2.1.2.1 Pharmaceutical sales representative professional value

It is mentioned that research based pharmaceutical companies have always relied on strong R&D, aggressive defense of patents and powerful sales force as the dominant promotional tool as being the three important ways to ensure their long term performance and success (Moss and Schuiling, 2003). On the other side, it has been argued that sales push was preferred to marketing pull, thus, the sales force related costs represented about 50% of all marketing expenditures (Bednarik, 2005). Hermanek (2002) stated that well trained and high qualified pharmaceutical sales representatives is the most important marketing tool for the pharmaceutical companies to influence the prescription. Additionally, studies revealed that there is a positive correlation between the market share and sales for size in the industry (Bednarik, 2005).

Singhapakdi and Vitell (1993, p. 528) define professional values as “values relating to one’s professional conduct that are commonly shared by the members of a particular profession”. Also Wright and Lundstrom (2004) study examined PSR professional value as honesty, trustworthy and ethical as perceived by physicians.

Roman and Ruiz (2005) emphasized that ethical behavior of the sales person is crucial especially for the welfare of customer. Nevertheless, Román and Munuera (2005, p.479) defined ethical sales behavior “as fair and honest actions that enable the salesperson to foster long-term relationships with customers based on customer satisfaction and trust”.

It is possible that salesperson or sales representative would have personal relations or interactions with the customers and their behavior to customers may have deep impact on the company perception (Mantel, 2005).

According to Lagece et al. (1991), ethical sales behavior is designed on intangible origin and it is a progressive concept, moreover it is a reactive and it is sensitive to circumstances of the situation. Customers think that it is the short-run term conduct of salesperson to gain the customers with behaviors such as lying about the product specialties or benefits, not giving the right answer about the products, lying about the competition, convincing the customers that people do not really need the products and inducing the field force by the company for giving manipulative messages (Cooper and Frank 2002). However, in the long term it can cause negative impact on customer loyalty and satisfaction. In their study, Dubinsky et al. (1992 p.38,) stated that “unethical salesperson behaviors can result in customer dissatisfaction, poor word-of-mouth, lost customers, reduced sales and profits”

The other dimension is trust in the professional value of sales person. In the literature, trust mentioned as a key factor to build long-term relations with the customers or business partners, trust is also one of the key mediators to enhance business relations (Berry, 1995). Cater and Zabkar (2008,p.786) defined trust as “belief, feeling or expectation about an exchange partner which can be judged from the partner's expertise, reliability and intentions”.

One of the key factors in the process of decision making of a drug is the professional behavior of pharmaceutical sales representative, which is the primary stage of the process (Ion, 2013). Ion (2013, p.36) indicated that “the scientific information presented by the medical representatives must be described in terms of learning opportunities and

opportunities of improvement of the process of solving the problems so that all participants in the medical process can be advantaged – physician, patients and sales force”.

Wazana (2000) concluded that in his study, PSRs have an important role in decision making in the pharmaceutical industry. Unless physicians have positive manner for certain PSR especially in terms of professional values, they do not trust that PSR and not prescribe of the related company’s drug. If the physician has positive perception or believes that PSR has high professional values, it enhances the PSR professional value and this value turns into continuous prescription of company’s drugs (Doney and Cannon, 1997).

2.1.2.2 Characteristics of the relationship

There are four distinctive characteristics of the relationship between sales people and customer according to Doney and Cannon (1997). These characteristics are classified as likeability, similarity, frequent social contact and frequent business contact. Rotter defined likeability as buyer’s assessment that finds the salesperson friendly, nice and pleasant to be around. Different studies in psychology find a positive correlation between person’s likeability and the extent to which the person is trusted by others (Rotter, 1980). In another study, it is found that buyers are more confident about someone they like. Likeability is separate dimension of trust in the sales person and trust is positively related to liking (Swan et al. 1985).

The other characteristic is similarity and it assesses the buyer's belief that the salesperson shares common interests and values with people in the buying firm. (Johnson and Johnson 1972). Therefore, similarity can activate the intentionality and prediction process (Teven, 2005). Buyers who see salespeople to be similar to them could expect such salespeople to hold common beliefs about what behaviors, goals, and policies are appropriate. On the other hand, trust is also fostered by similarity because customer able to feel better with assessing the sales person’s intention. Understanding, predicting sales persons’ behaviors and motivations make easier to build long term relation (Doney and Cannon, 1997).

Weilbaker (1990) studied on three specific groups which are consisted of buyers, sales managers and salespeople., concluded that buyers (i.e., physicians) in this group, gave the maximum rate on the salespersons' likeability, "suggesting that those sales representatives who are friendly, courteous, and helpful are more likely to cultivate more positive affect than their non-immediate counterparts". Weilbaker (1990, p.47)

There are series of studies about the relations between sales person and customer group and it is stated that salespeople can play an important role in any marketing, sales, promotion, or communication process and cause social influence on other parties (Sharma, 2001). They can help people to find the desired products and stimulate product interest. Sales representative also build product awareness because they often make recommendations on new arrivals and in addition, sales representative facilitate the consumer search process (Zhang, 2011).

Depending on the implications of Argo, Dahl and Manchanda (2005), unlike non-interactive influence, interactive social influence directly involves or engages a physician. Zhang (2011) also stated the importance of the communication and two way feedback in the selection decision of any product that was offered. With this respect, the physician may participate in decision making by providing feedback, making recommendations, or discussing on a drug within the relationship formed between the sales representative and the physician (Zhang, 2011). A recent study, which was conducted in Bangladesh, has indicated that the interaction quality between the physician and the sales representative was an important factor affecting the prescription behavior (Hossain, Kawsar, Tanmy and Yousuf, 2013).

For the other characteristic, which is the frequent contact, it is implied that the regular visits of the pharmaceutical sales representatives is the most appropriate promotion for the pharmaceutical companies (Ion, 2013). Moreover, meetings and special personal interviews are stated as being the key factors of forming effective contact between the sales representative and the physician. Therefore, pharmaceutical companies organize meetings to provide saleable addition continuously. It is told that generally, a professor or key opinion leader makes speech about the drugs of company or share experiences about the updates in the treatment. With these kinds of meeting, participants are able to have new information about the treatment or clinical trials (Ion, 2013).

2.1.3 Factors Linked to Advertising/Promotion Activities

It has been explained that the sales force of the pharmaceutical companies is one of the most important marketing tool in the above part. However, it is indicated that in some circumstances, sales effort of pharmaceutical sales representatives can reach a saturation level and their effort may not provide additional value or outcome for the promoted products (Moss and Schuiling, 2003). Since the pharmaceutical industry is highly capital and technology intensive, the survival of companies in this industry is highly dependent on their research and development competence, as well as the ability to sell products, where remaining within national boundaries is not a sustainable strategy (Vasiljev and Pantelic, 2010). The development potential of the pharmaceutical industry, the pace of change, high competition levels and forthcoming restructuring leave enough space for thinking about the specific aspects of pharmaceutical product marketing. Aitken (2007) implied that the pharmaceutical market would continue to change and adapt to the new economic challenges by emphasizing the following statement:

“In which growth is shifting from mature markets to emerging ones; new product adoption is not keeping pace with the loss of patent protection by established products; specialty and niche products are playing a larger role; and regulators, payers and consumers are more carefully weighing the risk/benefit factors of pharmaceutical”.

Similary, Viitanen (2004) mentioned the mandatory changes in business strategies from traditional pharmaceutical business to 21st century business and emphasized the importance of more modern ways of sales and promotions of the products in the industry. Moreover, Bates and Bailey (2003) also argued that the distribution is usually standardized companies focus mainly on promotion and the pharmaceutical companies used “communication mix” rather than “marketing mix” which is used in marketing literature. Thus, it is evident that medical companies' marketing facilities and objectives may differ from the usual companies' marketing facilities or tools.

Moreover, for implying the importance of product positioning and promotion, Kumar and Srivastava (2013, p.640) have stated that “establishing the pharmaceutical brand position the advantageous location that a product owns in the mind of physician was the challenging component of marketing campaign development”. They added that “at present the traditional approach to pharmaceutical brand, positioning involves customers essentially reacting to statements developed by the marketing organizations”. (Kumar Srivastava, 2013, p.640).

There are various definitions of positioning in the marketing literature. The main aim of positioning is to create a conceptual framework and certain position in the consumer mind with influencing their purchasing decision. Marketers use this strategy to differentiate their products or services from the competition. Also with this strategy, they are able to communicate the desired positions (Boone and Kurz, 2001). Etzel, Walker and Stanton (1997) described positioning as to management's ability to bring attention to a product and to differentiate (position) in its favorable way from similar products. Kotler (2006) defined the positioning as the act of designing the companies offer. Therefore, it occupies distinct and valued position in the consumers relative to competition products.

The purpose of positioning (Bhat et al. 1998, p.33) is "to create a unique and favorable image in the minds of target customers". Positioning is creating a specific marketing tools or messages, which influence the potential customers with the company's services, product lines or brands (Lamb, Hair and Mc Daniel, 2004).

In sum, the position of a product is physician's perception of the product's attribute relative to the attributes the competitive products. The brand helps customers (prescribers) to make choices by delineating the unique qualities and value that the product or services provided to the customer (Van Auken, 2010). Brand may assist prescriber to make prescription decisions "in increasingly cluttered pharmaceutical environments, providing useful clue as to product quality, attributes and personality" (Aaker, 1997; Kumar and Srivastava, 2013, p.645). Therefore, positioning and promotion are suggested to be the "natural conclusion to the sequence of activities that constitute a core part of the marketing strategy of the pharmaceutical company" (Kumar and Srivastava, 2013).

In this context, it is seen that pharmaceutical industry in particular employs an unusual combination of marketing effort, namely, personal detailing, free samples, congress sponsorship and promotional materials within advertising and promotion activities (Gönül et al 2001). Particularly with the compelling factors in the healthcare procedures, pharmaceutical marketing differs from the other types of marketing establishments For example, it is forbidden to make direct promotion activities to the patients who is the consumer of the product and also the person who will get the products' benefits. Hence, from marketing point of view it appears impractical but the

reality is grounded on this idea (Klemenc et al. 2012). Marketing activities are strictly controlled by the related authorities and there is only one intermediary to reach the end user. It is the doctor who makes the decision on behalf of the patient. Physicians (Doctors) are the only person who can recognize the need of patients and recommend medications for them. Therefore, the relation between the physician and pharmaceutical companies can create a conflict between the ethical professional interest of a doctor and his/her financial interest. It is the result of why these relations have received significant attention by the government, which is also the payer of the all-healthcare expenditure in the system (Meenaghan, 2001). Because physicians' prescriptions directly influence the cost of healthcare spending, ministry of health investigates the pharmaceutical industry and physicians' relations (Orlowski et al. 1992). At this point, Bednarik (2005, p.639) indicated that:

“The role of medical marketing has historically been to prepare sales messages and detail aids that would enable the sales force to get the marketing messages across to targeted physicians and this was accompanied by traditional tools like advertising, publications in medical journals or opinion leaders' management”.

Accordingly, in the next section, detailing and tangible awards which are specific concepts for the pharmaceutical industry are examined.

2.1.3.1 Detailing

Personnel selling involve interaction between people. Compared with other parts of the promotion mix, a personnel selling is more human, flexible and dynamic. The sales people can tailor the communication to fit the prospective customer's need, expression and overall behavior (McCarthy and Perrault, 1987). In some industry, notably in the pharmaceutical industry, the sales force task is not to close the sale but to persuade the consumers to specify the seller's products. For instance, the doctor does not buy drugs personally, but prescribes for patients (David Lobber and Geoff Lancaster, 2005)

Conventionally, pharmaceutical companies using their marketing tools at doctors who are able to prescribe a pharmaceutical drug. This strategic tool mostly is implemented through the pharmaceutical sales representatives, also known as detailers or drug reps (Wright and Lundstrom 2003). This marketing implementation briefly refers to face-to-face promotional activities and sales representative details the product. Detailing is a presentation of a product in which the detail man tells about its indications and

contraindications and discusses its effectiveness in the treatment of the particular disease for which it is recommended (Manchanda and Honka 2005).

During the detailing period, sales representative tells of the cost and sometimes gives the doctor one or more samples. He contacts this doctor several times during the year, so it behooves him to make his presentation factual and truthful. The pharmaceutical industry expects that he not exaggerate what the product will do for patients (Jeremy A, 2004). It is interesting to note that the pharmaceutical industry allocates more funds on detailing than on any other marketing tools (Manchanda and Honka 2005). Similar to the effect of advertising, the impact of detailing expenditures spills over beyond the current period (Gönül et al 2001).

Sales representatives must to have comprehensive knowledge about their drugs and they always have to be organized to carry this knowledge to the physicians. Detailing also is a key instrument in whether a product accepted and prescribed. With the new innovative drugs, it is very difficult for a busy physician to keep up to date with the drug industry through reading, or from medical associates (Wright and Lundstrom 2003).

Manchanda and Honka (2005) investigated the effect and role of detailing to physicians and they concluded that there is a two-sided relationship between physicians and detailers. It has been found that there is strong evidence detailing affects prescription behavior in a positive and significant manner. They also stated that physicians have negative (at one extreme) to neutral (at the other) attitudes toward pharmaceutical sales representatives. Some factors for this perception are the quality of educational support provided by detailing, detailer style and the physician's practicing environment. On the other hand, restrictions in visiting hours at their clinics reduce quality of interview and communication. Most of the hospitals have an official visiting hour which is settled after 03:00 pm and sales representatives are not allowed to visit physicians before this period (Ankara Onkoloji Hastanesi). This time period makes very difficult to reach physicians and tell the story of promotional materials.

Caudill et al. (1996) studied attitudes of physicians toward the educational value and behavioral influence of sales representatives or detailing impact. Physicians agreed that sales representatives provided useful and accurate information about newly and already

established drugs, but very few of them agreed that they have an important training function (Manchanda and Honka, 2005).

McKinney et al (1990) studied the physician's attitudes towards professional interaction with pharmaceutical sales representative and potential for ethical compromise between residents and faculty. It has been stated by McKinney et al. (1990) physicians are not positive about the detailing activities and the information that is provided by during the detailing, but physicians are positive about the conferences and speakers that supported by the pharmaceutical sales representatives. On the other hand, residents seem more happy than faculty people to be in contact with pharmaceutical sales representatives and they are more easily affected by the pharmaceutical sales representatives marketing activities

In general, physicians think that detailers are useful sources of information. In some studies, more than half of the respondents considered detailing the most informative or acceptable drug promotion strategy (Manchanda and Honka 2005). Especially general practitioners found detailing as the most informative way of promotion drugs as compare to specialists (Fassold and Gowdey 1968). The important issue in detailing is the frequency of sales visit. Easton and Purish (1976) studied on general practitioners in Great Britain about how they provide information and what kind of sources they use. 93% of respondents specified who have visit from sales representative at least once a week think that they would lose an important source of information if they do not have visit from sales representatives. Finally Connelly et al (1990) found that in their study, in terms of information availability, search ability, understandability and applicability, information from detailers was viewed as higher than information from secondary sources such as research articles.

As a result, detailing has an impact on prescription behavior via sales representatives' strategies and activities about the product that they are detailing for. Most importantly perceptual studies confirm the importance of detailing in the early stages of the life cycle. For this potential outcome, pharmaceutical industry continues to invest on this mode of promotion

2.1.3.2 Tangible rewards

In general, sales promotions include techniques that organizations can use as part of their marketing effort. (David Lobber and Geoff Lancaster p.6 2005). Sales promotion involves those marketing activities other than personnel selling, advertising, and publicity that stimulate consumer purchasing and dealer effectiveness. (Kinnear and Bernhardt p.521 1990)

“It is usually not directed at as large an audience as advertising, but instead is directed at much larger groups than a typical personal selling effort. Included are such activities as trade shows, exhibits, couponing, sampling, premiums, trade allowances, demonstrations and dealer incentives”.

Sales promotion tools vary in their specific objectives. In the pharmaceutical industry sales promotions have different administrations but it has the similar target from marketing perspective. The aim is to increase the usage or consumption of the related product. Nevertheless, due to external factors and the regulations in the pharmaceutical system, promotional activities have different basis. In general, pharmaceutical companies provide different types of rewards to the physicians. These rewards are gifts such as national and international congress sponsorships, continuous medical education, and honorarium fee for the speakers and small gifts like radio, book and pens (Wazana, 2000; Madhavan et al, 1997; Brett et al. 2003).

There are series of studies about the promotion activities in the pharmaceutical industry and their impact on prescription behavior. Some studies support that physicians do not prescribe only on the basis of the rewards. Wazana (2000) concluded in his study, rewards only help physicians to remember the brands of the company. However, many of the studies supports that there is a positive relation between the prescription behavior tendency and tangible rewards (Manchanda and Honka 2005)

Bond and Lean (1977) emphasized that promotional advertising was essential for the success of pharmaceutical products from a marketing and sales perspective with their breakthrough study. Pharmaceutical companies allocate massive budgets to the marketing activities for three basic communication purposes. First purpose is to inform the physicians about the benefits and functions of the drug. After this informing period, pharmaceutical companies' expectancy is to persuade them to prescribe related products

and convince them to be loyal prescriber of the product (Diehl et al., 2008; Delorme et al. 2010).

2.1.3.2.1 Gifts

The other important part of advertising and promotion is the gift or gimmicks, which are given from the pharmaceutical sales representatives to the physicians. As part of the detailing process, pharmaceutical sales representatives do not promote their product with only giving samples of products, but they also give gimmicks such as radio, pen, notebooks and meals (Manchanda and Honka 2005).

The receipt of gifts is seen as producing a norm of reciprocity where the receiver is under an obligation to give some form of response. (Festinger et al. 1959) While McKinney and colleagues (1990) concluded that doctors recognize that they could be compromised by accepting gifts, few of them see small gifts as potentially compromising (McKinney et al. 1990). Canadian medical association guidelines assume that gifts of low value are not capable of altering a doctor's decision making. Thomson et al (1994) study concluded that gifts with a high cost are a factor in acceptability, which is also consistent with Canadian medical association study. However, it is not justifiable to assume that small gifts have no effect. Festinger and Carlsmith have concluded that, small rewards are more likely to alter behaviour in the direction desired by the donor than are large rewards. (Festinger et al. 1959). Madhavan et al (1997) emphasized that doctors moderately agreed that pharmaceutical companies give gifts influence to their prescription behavior and the doctors in the study disagree that gifts influence their prescription behavior.

In a study in Turkey, respondents were asked the gift's proper specialties and doctors' expectations from typical promotional materials or gifts. 56% of the total participants emphasized that good gift should remind the related product while 54% emphasized that gift should be functional and multi-purpose. It is interesting to note that, 47% stated that gift should have scientific functions that support their studies. In the same study what kind of gifts are found useful for the physicians was asked. Answers showed in table 2.2. (Nayir, 2006)

Table 2.2: Physicians' expectations of gift

Expectations	Frequency	Person %
Should be functional	142	53,4
Reminds the product	148	55,6
High Quality and Durability	104	39,1
Scientific Function	127	47,7
Patient and Doctor should benefit	104	39,1

Source: Nayir, G., (2007). *Türk İlaç Sektöründe Tutundurma Faaliyetleri*. Thesis for M.A Degree. Sakarya:Sakarya Üniversitesi

Sergeant et al (1996) study with family practitioners about the interaction of doctors with pharmaceutical industry concludes that most of the physicians find favorable to attend dinner with sales representative. However, physicians think that this type of activities increase the cost of drug for patients. Wazana (2000) also found that there is an independent association between benefiting from sponsored meals and formulary addition requests for any drug that was clearly dose related.

Gibbons et al (1998) surveyed the perception of doctor and patients about pharmaceutical industry gifts. It is interesting to note that patients found that gifts are less appropriate and they thought that this kind of supportive materials influence physicians' behavior. In a study on Turkish doctors, (Güldal et al. 2000) 18% of the respondents accepted that strongly influence their prescribing, 12% say that it has a medium effect, 44% low, and 27% say that it has not impact on prescribing. In a new study, which has been done in 2012 in Libya, Mustafa et al found that stationery gifts, which have the name of the brand on the visuals, might have potential to influence doctors' prescribing decision. These kinds of promotional activities are generally more influential than verbal reminders because every time you see the name of the brand on gimmicks unconsciously (Mustafa et al. 2012).

In Wazana (2000) review, different studies about the physician and pharmaceutical industry interactions have been analyzed. A total of 29 studies were included in the analysis and in general he concluded that physician and industry interactions appear to affect prescribing behavior. Physicians think that gifts have not too much influence on prescription behavior; some physicians find gifts inappropriate and unethical. However if gift is for patient benefit, they find this material ethical and appropriate.

2.1.3.2.2 Sampling

Sampling a product means giving away free quantities of it, usually in a smaller size than the regular package. Marketers believe that sample usage will turn the sales in the future. Free sample seldom help mature products, since their problems usually run much deeper than just consumer failure to try them.

Literatures about impact of samples on prescription behavior support that this promotion tool has an informative effect on physicians and they found it very effective to see the efficacy on patients (Gönül et al. 2000). Wazana (2000, p.375) in his meta-analysis emphasized, “Accepting sample is associated with awareness, preference and rapid prescription of a new drug and a positive attitude toward the pharmaceutical representative”. In 2004 alone, the Kaiser Family Foundation reported (Mustafa et al. 2012, p.2) that “pharmaceutical companies spent \$15.9 billion marketing drug samples to physicians and that this represented the largest component of their promotional budget (57%)”.

Peay et al (1988) studied the impact of marketing activities on the adaptation period of a new drug and they found that sampling is crucial to convince the physicians. Handa et al (2013) researched the different pharmaceutical marketing activities on prescribing behavior and they found out that drug samples have been found that one of the major impacting factor on prescription behavior. According to Groves et al (2003, p.91) “drug samples are of current interest because of their influence on prescription and potential impact on patient safety”.

There are also different benefits of samples not only in terms of influencing prescribing behavior. There was recognition that free samples may be a mainstay of treatment for indigent patients frequently seen in resident clinics (Lichstein et al. 1993). Banks and Mainous (1992) 42% of MD faculty and 63% of PhD faculty agreed that free samples influence prescribing patterns. On the other hand, in some studies it has been observed that uncontrolled usage of drug samples cause the low compliance to guidelines. (Monaghan et al. 2003)

Drug samples clearly impacted prescribing behavior, and ranked fourth in value behind medical books, medical journals, symposia and conferences. Medical doctors consider

patient's financial burden and availability of samples when making prescribing decisions. 41% of the respondents reported that they used samples often, and 43% of the respondents reported they used samples always (Spiller et al. 2001). 84% of physicians considered providing free product samples to be the single most important service provided by pharmaceutical sales representatives. (Gaedeke et al. 1999)

Physicians agreed that drug samples are a source of medication for indigent patients. A similar percentage recognized samples had a gap in providing pharmacist screening and counseling, and a smaller percentage agreed drug samples contribute to the high cost of care. The presence of drug samples may influence physicians to dispense or prescribe drugs that differ from their preferred drug choice (Chew et al. 2000).

2.1.3.2.3 Sponsorship

Pharmaceutical companies are arranging national and international organizations for their target customers. In general it is aim to increase the awareness of drug through with increasing the awareness of disease and the quality of treatment. These kinds of meetings, also known as continuous medical education are essential and not only as part of their remaining up to date, but also in many cases as a requirement for maintaining their licenses. For instance, warn about the dangers of antibiotic resistance caused by overprescribing, or educate physicians on the possible advantages of exercise and nutrition compared to many drugs (Audrey et al 2006).

Scientific support is indicated as being a key factor behind the prescription choice of the physician (Ion, 2013). Such kind of a scientific support includes objective information about products, brochures, literature and journal support, samples, useful promotion materials, patient brochures, internet subscription, congress participation support, medical meetings (Yılmaz, 2008). As being among the nontraditional methods of drug promotion, hospitality for medical profession and seminars have increasingly been supplemented by approaches such as symposia that rely heavily on the involvement of medical researchers and other experts (Goyal and Pareek, 2013). In addition, as Orłowski et al (1992) stated, continuous medical education has importance in the physician's prescription behavior. Drug companies sponsor congress and symposia to

educate physicians as a marketing tool. It is important for the physicians while they determine the brand preference (Marlow, 2004)

2.2 FACTORS LINKED TO THE PRODUCTS

For the purpose of this study and considering the suggestions of existing literature, product linked factors are examined in understanding the prescribing behavior in this part. In the previous sections, different factors on prescribing behavior which are free samples of the drugs, free medical campaigns, product folders, Continuous Medical Education (CME's), gifts and other promotional inputs, research molecule, and initiatives have been analyzed as the factors that are linked to prescribing behavior (Lundin, 2000). On the other hand, (Moss, 2001, p.25) "the pharmaceutical industry is highly complex resulting in important differences between consumer brands". Making a decision among the various products is very complicated and not an easy decision process due to different influencing factors (Moss, 2001).

Typically, in the pharmaceutical industry, product is suggested or prescribed by physician, the prescribed product is only available to buy at pharmacy and finally patient uses this product, which is a third party of these group. Hence, "this purchasing pattern creates a distinctly different perspective when compared to consumer goods that are purchased directly" (Moss, 2001, p.28). Consequently, "while patients (consumers) may request a particular prescription brand from a physician, there is no guarantee that the request will be granted" (Leonard and Katsanis, 2013, p.585).

Additionally Bedranik (2005, p.639) implied that "the available research about factors that influence doctor's prescribing decisions has also indicated that product attributes, especially product's efficacy and side effects, are largely prevalent". However, there are different dimensions which are highly related about the pharmaceutical products. Thus, the product linked factors are examined with the concept of brand related concepts including brand awareness, brand personality and perceived quality in this section. For supporting our examination of branding concept, we refer to the statement of The Economist Intelligence (EIU) Report which has been cited by Bednarik (2005, p.639):

“Brands have been debilitated by the practice of referring to brands within and outside the company by their generic names, by using trademarks developed from the generic name of the compound which help to confuse brand recognition among physicians, pharmacists and patients, by the scant attention paid to brand packaging – the most visible part of the marketing mix – and by assigning the custody of their brand assets to product management rather than brand management”.

2.2.1 Branding Concept

It can be suggested that the factors related with the product (drug) and brand of the product can help for acquiring the prescription of the product by the prescribers (doctors/practitioners). In addition, the brand perceptions of the product provide the sales representatives a formulation of competitive strategies for marketing the products. For that reason, in this part of the study, initially the concept of brand will be described and then the related concepts of the brand perception will be briefly explained.

According to The American Marketing Association, brand is “name, term, sign, symbol or design, or a combination of them intended to identify the goods and services of one seller or group of sellers and to differentiate them from those of competition” (Aaker, 1996, p.21). The practice of branding has been defined as the process, by which companies distinguish their product offerings from those of competition. In the increasingly globalized economy, the challenge of distinguishing their product offerings from those of competition has assumed critical importance for nations competing for both domestic and foreign consumers (Dinnie, 2008).

According to Kotler's definition (2000, p.18), a brand is:

“A name, term, sign, symbol, or design, or a combination of them, intended to identify the goods or services of one seller or group of sellers and to differentiate them from those of competitors”.

Kotler emphasized that; a brand can carry six different meanings in the practice. These meanings are (Kotler, 2000, p.18) “attributes, benefits, values, culture, personality, users and this list comprises both rational and emotional meanings”. According to Kotler, the most enduring meanings of a brand are “its values, culture, and personality (i.e. emotional), which define the brand’s essence” (2000, p.18).

The idea that brands are more than just products is also asserted by Keller (2008, p.5) who states that

“A brand is (...) more than a product, because it can have dimensions that differentiate it in some way from other products designed to satisfy the same need. What distinguishes a brand from its unbranded commodity counterpart and gives it equity is the sum total of consumers’ perceptions and feelings about the product’s attributes and how they perform, about the brand name and what it stands for, and about the company associated with the brand”.

From a different view, brands are defined as intangible assets that are able to produce benefit for both the internal and external stakeholders of the company – such as employees, customers, suppliers or civil society organizations (Srivastava, Fahey, and Christensen 2001; Crane, Matten, and Moon 2008). Again another definition implied that brands are a set of perceptions. Güse (2011) has stated that the diversity of brand definitions also suggests that different perspectives can be taken when exploring the world of brand, such as the legal, the management or the customer perspective.

Moreover, branding strategy generally support companies to create loyalty in the long term, support companies to differentiate their products or services and most importantly creating a character for the product which can be positioned in the consumers minds. (Cunningham, 2006). It is mentioned that the aim of branding is to support the company’s getting and maintaining duty of for a loyal customer group who can provide to the company high return on investment rates. From this perspective, branding strategy is not just the part of marketing mix, it is also the result of professional marketing thinking which is integrated with strategic thinking. Namely, it is the strategic marketing which also covers the marketing strategy more widely (Chernatony et al. 2000).

As it is indicated, for a marketing departments, product differentiation becomes a key to gaining degree of monopoly power in a market, if it satisfies consumer needs (Palmer, 2012). Companies should guarantee that customers can easily recognise its services or products in the market among the competitors. With this respect, today branding strategy is being used by all the industries especially by the fast moving consumer goods industries which is an incubator for their growth. Moreover it become a business discipline in this century especially against to competition whereas competitors can copy product innovations in a very short time (Jevons, 2005).

It is implied that in consumer marketing, branding strategy and brands strongly support the differentiation against to competition and they provide competitive offerings, critical success factors in the fierce competition environment (Wood, 2000). From this perspective, it is very crucial to approach to the brands strategically for the companies. However, “the lack of an effective dialogue between functions that are disparate in philosophy and do not have a common and compatible use of terminology may be a barrier to strategic management within organisations” (Wood, 2000, p.665).

Berthon, Hulbert and Pitt (1999) implied that branding must be the major part of corporate strategy and it is the only way to create distinctive products while satisfying customers’ need. Furthermore, it is recognized that, the significance of branding is increasing day to day and companies are trying to find out unique strategies for identifying their products. Capon, Berthon, Hulbert and Pitt (2001, p.217) state that “the function of branding is to create a distinction among entities that satisfy a customer’s need, and the primary distinction is the origin of a series of benefits for both the buyer and the seller”. As Capon et al. (2001, p7) has implied, “branding a product is a common way of creating heterogeneity and the brand is seen as a company’s central resource. Therefore, all of the investments that are undertaken within the resource mix of a company to support the brand are central to brand management”.

At this point, two approaches about brand development were identified (Styles and Ambler,1995 as cited in Wood and Pierson, 2006); the first approach is the product-plus approach which accept that branding is as an identifier, namely an addition to the product which can easily differentiates it from the competitor. According to this approach, branding should be the major target especially in new product and service development (Wood and Pierson, 2006). The second approach is (Wood and Pierson, 2006, p.904) “the perspective in which the focus is the brand itself. Using the marketing mix, the brand is tailored to the needs and wants of a specified target group” (Wood and Pierson, 2006, p.904). The elements of the marketing mix are unified by the brand such that the individual elements of the mix (for example price), are managed in a way which supports the brand message. (Styles and Ambler,1995 as cited in Wood and Pierson, 2006)

Pharmaceutical companies sell their products through facts and data (Bedranik, 2005). Especially, research based companies, they strongly trust on three pillars to have long term success. These are strong R&D, protection of patent and powerful sales and marketing organizations (Moss and Schuiling, 2003). The role of marketing in the industry is and will always be different from consumer goods. However, pharmaceutical industry has similar strategic tools like the consumer goods market and these tools have equal importance for managing the products in the market. Positioning is also first step to good branding. For instance, if the pharmaceutical company introduces a new product to the world, (Dogramatzis, 2002, p.134) “marketers must have to present the product to customers across the whole healthcare spectrum, in market segments where they believe this product holds the highest competitive advantage or is able to best satisfy customer needs”. Therefore, it is crucial to analyze the product characteristics (table 2.3) and the rivals as well for the right positioning (Dogramatzis, 2002).

Table 2.3: Positioning map of pharmaceutical product

Market Segment	Brand	Frame of Reference	Differentiation	Competitive Edge
Of all analgesics,	Product X	is the only long-lasting product	that offers fast relief and tolerability	due to its targeted effect on brain ABC receptors.
In hormone replacement,	Product Z	is the standard of a new era	because it covers all your body's needs	by acting on central and peripheral E2 receptors.
In Parkinson's treatment	Product W	is the best choice	because it offers long relief with no side-effects	due to its innovative drug combination.
Among selective-serotonin reuptake inhibitors (SSRIs)	Product Y	is the most tolerable	because it offers superior efficacy and no side-effects	due to its selective 5-HT receptor actions.

Source: Dogramatzis, D., 2002. *Pharmaceutical marketing: a practical guide*: Taylor& Francis. pp.134

What about the branding in the pharmaceutical industry? Most of the marketers strongly believe that branding is the most important strategy to make a good positioning in the customers' minds. “But it is equally applicable to pharmaceutical products and it can really provide added value to the consumer is a difficult question” (Dogramatzis, 2002, p.135). It is not possible to give certain answer but it is obvious that a pharmaceutical

branding strategy may have benefits to the prescriber, patient, payer and company of the product (table 2.4).

Table 2.4 : Benefits of branded pharmaceuticals

Benefits of Branded Pharmaceuticals			
Prescriber	Patient	Payer	Manufacturer
Efficacy Risk reduction Trust Patient retention More information Sponsorships	Efficacy Risk reduction Trust More information Feeling good Convenience Easier comparisons Company accountability	Efficacy Safety Standardization Risk reduction Trust Economies of sale	Competitive advantage Easier segmentation Global marketing Customer loyalty Product bundling Easier line extensions Less time to market Image building Premium pricing Employee morale

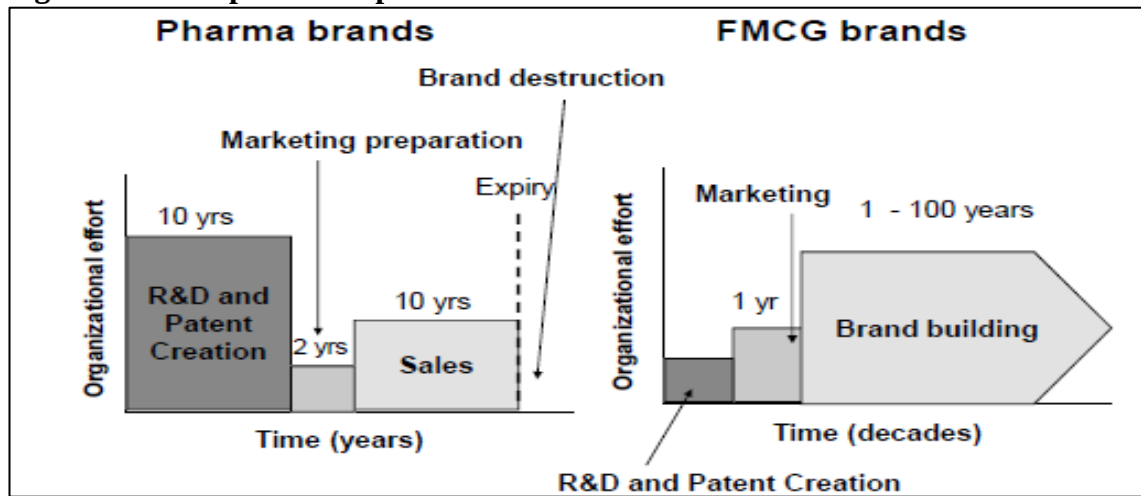
Source: Dogramatzis, D., 2002. *Pharmaceutical marketing: a practical guide*: Taylor & Francis.pp.135

Thus, pharmaceutical branding has been defined as by Seget (2006, p.13)

“As the process whereby companies attempt to transform an active chemical compound into a recognizable package of associated brand values. And these values are determined such as effectiveness, safety, trust and other more emotional associations, have become increasingly important levers through which pharmaceutical marketers can look to achieve greater market share and loyalty in an ever more competitive market space”.

Pharmaceutical industry has been always subject to heavy regulations especially in terms of marketing concept. Additionally, relatively short patent life, restrictions in exclusivity and rapidly changing environment force companies to focus on R&D pipeline (figure 2.1). Therefore, companies have to focus on products rather than brands and it is the reason why the companies in the industry wish to have blockbuster products and make it faster as much as they can (Moss, 2001).

Figure 2.1: Comparison of pharma and FMCG brands Life



Source: Moss, Giles., 2001. Pharmaceutical brands: Do they really exist?. *Journal of Medical Marketing: Device, Diagnostic and Pharmaceutical Marketing*. 2 (1), pp. 23-32.

According to Moss (2001), there are three types of brands in the pharmaceutical industry. These are product brand, therapy brand and corporate brand. Corporate brand represent the company and corporate reputation is crucial to have high-level perception. The advantages of corporate brand are trust, loyalty and scientific credibility for its R&D, motivation factor for sales force organizations and effective environment for launching new products. However, there have been many acquisitions and mergers and it makes difficult for a clear corporate brand identity to be established. For instance, Smith Kline Beckman and the Beecham Group PLC merged to become Smith Kline Beecham. Then, Glaxo and Wellcome merged in 1995 to become Glaxo Wellcome, and in 2002, two companies combined to become Glaxo Smith Kline (Schuiling and Moss, 2004). Due to different acquisitions in different times, the image of the company is unclear for physicians, customers and patients. (Schuiling and Moss, 2004). To build strong pharmaceutical brands in this industry, it is crucial to understand market dynamics and differences to other consumer markets. This industry requires more global branding strategies and more dedicated international brand management team (Seget, 2006).

As Bednarik (2005, p.635) indicated, “ pharmaceutical companies used to market and sell their products through data and new drugs are easy to differentiate from their competitors and both physicians and patients bought easily up to their advantages in terms of efficacy and/or side effects”. However, it is known that the pharmaceutical industry is highly changing, competition intensifies, and usually new drugs don’t bring

breakthroughs in treatment. Moss and Schuiling (2003, p.56) described the pharmaceutical business “as an environment, where R&D efficiency and effectiveness is decreasing, risk coming from possible loss of revenues from blockbuster products after patent expiry is increasing, and sales efforts are reaching a saturation level”. This description has been argued by Pilling (2000) with his statement in which pharmaceutical business has been seen as sceptic about the added value of branding for the industry. Thereby, as Pilling (2000) indicated that, pharmaceutical professional at last, started to be aware of effective strategies and marketing tools from consumer goods markets which can be successfully implemented in pharmaceutical industry. Additionally, they started to realize that both physicians and patients are susceptible to branding activities when they are supported by clinical evidence (Pilling, 2000).

Therefore, pharmaceutical companies try to find for a new concept to differentiate their products and maximize their lifetime value. Thus, branding became as an appealing issue for the companies in pharmaceutical industry. Over the last decades, companies have significantly increased their investments in the creation and development of brands (Ergin, Özdemir, and Özsaçmal, 2006). In fact, in many sectors a gradual transaction to branding can be observed, even in those markets that have traditionally been more reluctant to use them as is the case of pharmaceutical, food, agriculture or high tech product markets (Rio, Vazques and Iglesias, 2001).

In his study, Ladha (2005) indicated the significance and importance of branding in pharmaceutical industry and mentioned that due to the recognition of the importance of branding, many pharmaceutical companies have restructured their marketing departments and invested the branding activities more. The Economist Intelligence Unit (EIU) Special Report about the pharmaceutical industry, which has been done in 1992, stated that branding could be the important source or strategy for the pharmaceutical companies against to the competition in the market. It can be concluded that packaging, promotions and distributions are the branding attributes to the pharmaceutical products (Bednarik, 2005). Additionally, Moss (2001, p.23) examined the current position of branding in medical marketing mix and discussed about existence of pharmaceutical brands as follows:

“The industry has been successful using product attributes and classical marketing techniques similar to other high-tech industries – the focus tends to be blockbuster products not brands”.

Moss (2001) stated that there is a patent protection in the pharmaceutical industry which is not very long and for this reason pharmaceutical companies hesitate to make huge investments to the branding strategies. Other factor stated by Moss (2001, p.24) is the product attribute “since the high-tech, industrial and pharmaceutical marketing has assumed that customers base their purchase decisions on selection of product attributes only”.

Moreover, Schuiling and Moss (2004) emphasized that branding is the existence reason of companies and it provides competitive advantage in any industry. Bednarik (2005, p.635) told that “the role of marketing in pharmaceutical industry is increasing and inspiration by successful brands known from consumer goods market influenced pharmaceutical companies to give their attention to branding activities”. Accordingly, it can be inferred that branding is an important strategy to create and increase the awareness in the pharmaceutical industry among the potential benefits of drugs and medicines.

In sum, pharmaceutical market or the in the other markets, branding is accepted in the literature and from the practice side, as a strategic path to differentiate one company’s products or services from the another companies’ products and services (Kumar and Srivastava, 2013). Moreover, it creates sustainable performance for the companies and “it occurs when the consumer has a high level of brand awareness and strong favorable and often unique association with that brand” (Kumar and Srivastava, 2013, p.645).

At this point, it is known that companies in the pharmaceutical industry take fast moving consumer goods industry (FMCG) as a model where the companies intensively invest on to create and develop brands and brands are accepted as the key assets of companies. However, due to compelling regulations in the industry, which are also challenging factors for the pharmaceutical companies in terms of marketing and selling drugs, force the companies to find a new ways and develop new strategies. Additionally these new strategies and new ways such as “creating brand relevant perceptions” must be acceptable in healthcare practice (Kumar and Srivastava, 2013).

On the other side, for pharmaceutical industry, prevailing reason for branding has been seen as defense against generics. It was stated that as long as generics are sold, the development of trademarks for new pharmaceutical products will be one of the most important tasks facing the industry (Bednarik, 2005). Bednarik (2005, p.642) also added that “no drug brand would be so powerful as to protect the brand against the persuasiveness of a substantially lower priced generic product”. As a support for that argument, Blacket and Harrison (2001, p.34) suggested that “branding in the pharmaceutical industry seems to be also important because it could represent a source of relationship with the customer, competitive differentiation, crossing the borders of countries and markets, influencing behavior or attitudes and customer loyalty”.

However, how to develop a pharmaceutical brand has been a subject of question. Although there are many similarities between pharmaceuticals and consumer goods Moss and Schuiling (2003) listed two key differences between them. One of them is the brand name which cannot be transferred to another molecule following patent expiry and the second one is the doctors and pharmacists who represent an additional layer between the patient and the company. Moreover, from the consumer perspective, since brands are described as a set of perceptions (Guthrie and Kim 2009), it can be suggested that different types of information – such as verbal, visual, or contextual information – are stored in the physicians' (prescribers) mind.

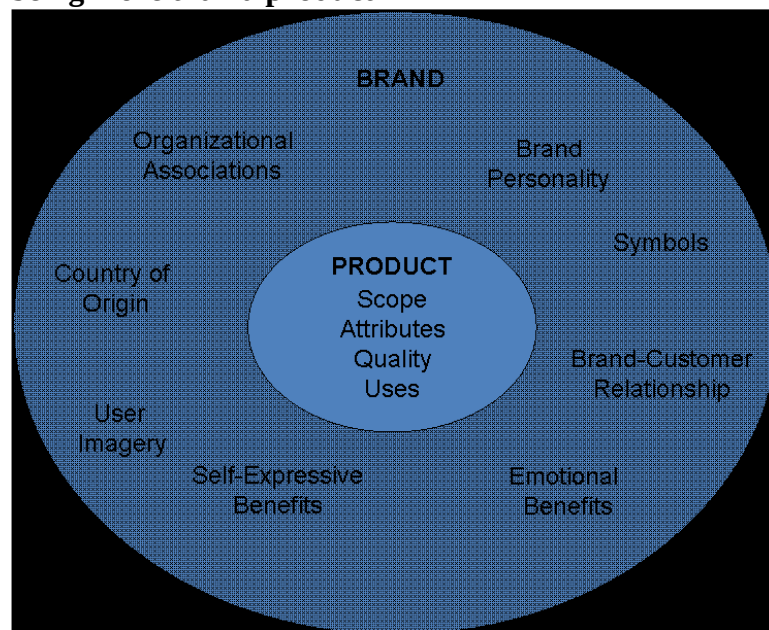
Based on marketing activities by the pharmaceutical company and personal experiences of the physician with the brand, each physician may develop specific brand perceptions (Romaniuk and Nicholls, 2006). These perceptions trigger mental processes in the physician's mind. As proposed by Bhat and Reddy (1998), they can result in both emotional and cognitive effects. Therefore, for physicians, it is possible that brands have various functions. For example, they guarantee a specific quality level. Additionally, in some product categories especially for the frequently prescribed products where it is difficult to differentiate products, branding simplifies the decisionmaking (e.g., Muniz and O'Guinn 2001, Del Río, Vázquez, and Víctor Iglesias, 2001; Güse, 2011).

On the other hand, Aaker (1991) expanded the branding issue and argued that a brand is more than a product. The product is composed of characteristics such as scope

(functional positioning), attributes, quality/value, and uses (usage purposes). On the other hand, a brand includes not only these product characteristics but also the (Aaker, 1991, p.74) following characteristics “brand user, country of origin, organizational associations, brand personality, symbols, brand customer relationship, emotional benefits and self-expressive benefits”.

The following Figure 2.3 displays how a brand is more than a product with its distinctive characteristics.

Figure 2.2: A Brand's distinctive characteristics as being more than a product



Source: Aaker, D.A., 1991. *Managing Brand Equity: Capitalizing on the Value of a Brand Name*: The Free Press U.S.A., p.74.

Accordingly, branding is a powerful means of differentiation; hence, a better understanding of brand equity measurement is essential for an enriched practice of brand management. Here, as can be seen in Figure 2.3, the brand personality concept emerges as important characteristics of the brand, which differentiates a brand from being a product. However, as Schuiling and Moss (2004) implied, pharma companies have not worked proactively in identifying a brand and identity and/or personality for their products and in communicating this personality to consumers. They have not done market research to determine their brand identity and personality and to verify if this is how consumers view them. It is suggested that pharmaceutical companies should

develop marketing and branding strategies more than they did in the past (Kumar and Srivastava, 2013). Even the most effective strategies implemented by a company could fail if physicians are not aware of its identity and personality. Therefore, it is important to discuss the presence of brand personality on the market, and the effect they have on physicians' prescription decisions.

Due to the importance brand personality, in the following part, brand personality dimension is presented including its definition, measurement, and scope.

2.2.2 Brand Personality

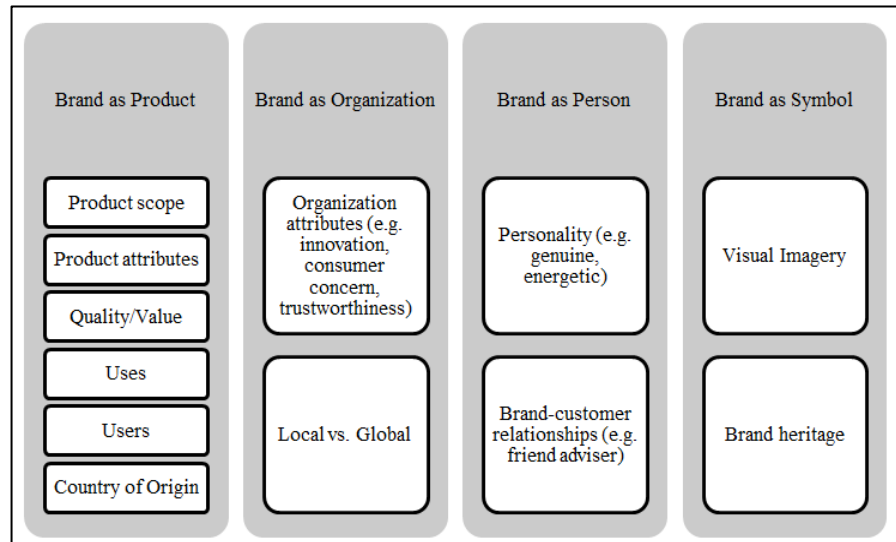
Aaker and Joachimsthaler (2000 as cited in Matthiesen and Phau, 2010, p.4) defined brand identity as "a set of associations that the brand strategist aspires to create or maintain". The companies present their brands and provide brand image consistency through brand identities and brand personalities. Brand identity can be explained as the overall proposition that the producer or the company makes to the consumer in terms of promises about the brand (Ulus, 2011). These promises may be related to features, quality, customer service support, benefits and the values that a brand has (Ulus, 2011). The companies advertise or promote their brands according to predetermined brand identities which can also be summarized as "everything the company wants the brand to be seen as" (Temporal, 2002 as cited in Ulus, 2011).

Aaker (2000, p.45) defined the brand identity as a "structure which includes the core identity, extended identity and a brand essence". According to this definition, extended brand identity represents the brand's aspirations widely in six to twelve dimensions where the core identity represents only the most important elements. Thus, this notion creates a perspective for the customer and the organizations that they generally perceive the core identity among the various factors. Aaker (2000) defined brand essence as a single attitude, which creates the personality of a brand and attribute character to the brand. And this essence act and give energy to the people inside the organization (Aaker, 2000).

From another view, according to Nandan (2005) brand identity is made up of brand vision, brand culture, brand positioning, brand personality, brand relationships and

presentations. Aaker (1996) distinguishes brands into four categories as product, as organization, as person and as symbol. These categories are shown with figure 2.4

Figure 2.3: Brand identity categories



Source: Aaker, D.A., 1996. *Building Strong Brands*: Free Press, New York. p.95

While a number of associations arising from brand resources, brand personality and organizational associations are the two crucial brand associations that affect the equity of the brand (Aaker, 1991). Brand identity and brand personality are the origin of the brands for differentiation especially against to the competitors and this will create brand loyalty “as brands signal a certain level of quality that the consumers will find on a regular basis on marketing and selling”(Kumar and Srivastava, 2013, p.640). From a customer perspective, brand personality let a person to communicate with their brands, which also creates an emotional appeal. Moreover, also the most important outcome brand personality increases the personal meaning of a brand (Keller, 1993). Additionally, it may have postive influence on choice of purchasing a product (Leonard and Katsanis, 2013).

According to Matthiesen and Phau (2010), brand personality is one of the key facets of the brand identity, but these two concepts are not mutually inclusive. Matthiesen and Phau (2010) stated that brand personality provokes emotional responses, and on the other hand brand identity focuses on recognition and it is descriptive. Thus, brand personality can be defined as “the set of human characteristics associated with a brand” (Matthiesen and Phau, 2010, p.205). Brand personality “is a key component of brand

equity, and is defined in terms of the various traits or characteristics that brands can assume from the perception of consumers” (Vural, 2013, p.27). Brand personality “is studied as sincerity about value delivery, technical competence, imaginative and innovative, cheerful, socially responsive and reliable”. (Kumar and Srivastava, 2013.p.647).

It should be noted that 'personality psychology' has been applied to both human beings but also to brands (Lückerath, 2010, p.19). Especially as stated by Lückerath (2010, p.19) “since a personality-directed brand management has been established as an effective way to create or increase brand equity, the conceptualization of brand personalities has become a popular research object”. Thereby “the concept of brand personalities is based on the assumption that brands, like human beings, have a personality which can be defined as the set of human characteristics associated with a brand” (Aaker, 1997, p.347).

This brand personality concept was seen as a vital factor of consumer liking and habit (Biel, 1993). Plummer (1985) emphasized that any direct/indirect connection that the consumer has with a brand can influence brand personality. On the other hand, “the indirect influences contain product-related features, product category relationships, brand name, mark or emblem, and other marketing mix elements “(Batra, Lehmann and Singh, 1993, p.95). Blackett and Harrison (2001) implied that brand personality examines the emotional dimensions of the brands. Contrary to performance-oriented product attributes, brand personality appears to be representative/self-expressive oriented (Fennis and Pruyn, 2007). Additionally, it was stated that “brand personality facilitates a consumer to articulate his/her self, an ideal self, or exact aspects of the self” (Chiu, Lin, Hsu and Chen, 2011, p.76).

Moreover, it is suggested in the literature, understanding the personalities of brands make it easier to differentiate these brands from the competition. Analysis has shown that in this area, “non-product related attributes such as the brand’s personality are a much stronger differentiator than purely product-related attributes” (Lückerath, 2010, p.8). Also Hieronimus (2003) implicated in his study, brand personality is a difficult process but it will create sustainable advantage against to competition if the brand personality is not easy to imitate by them.

It was argued that customers have tendency to prefer brands with “various salient personality dimensions to highlight certain aspects of their own personality in various situational contexts” (Helgeson and Supphellen, 2004, p.206). Sung and Tinkham (2005) examined the brand personality as a hypothetical construct and this construct only can be developed by the consumers. Additionally brand personality completely differs from human personality. Individuals have the personality dimensions, which are the combinations of perceived and objective components. It is an independent notion which progressive and characterized by the perceivers’ interpretations. However, brands have not objective personalities that are exist in brands. Aaker, Fournier, and Brasel (2004, p.2) implied that “as the connection between brand and the customer interacts, the personality traits have direct influence on this interaction.

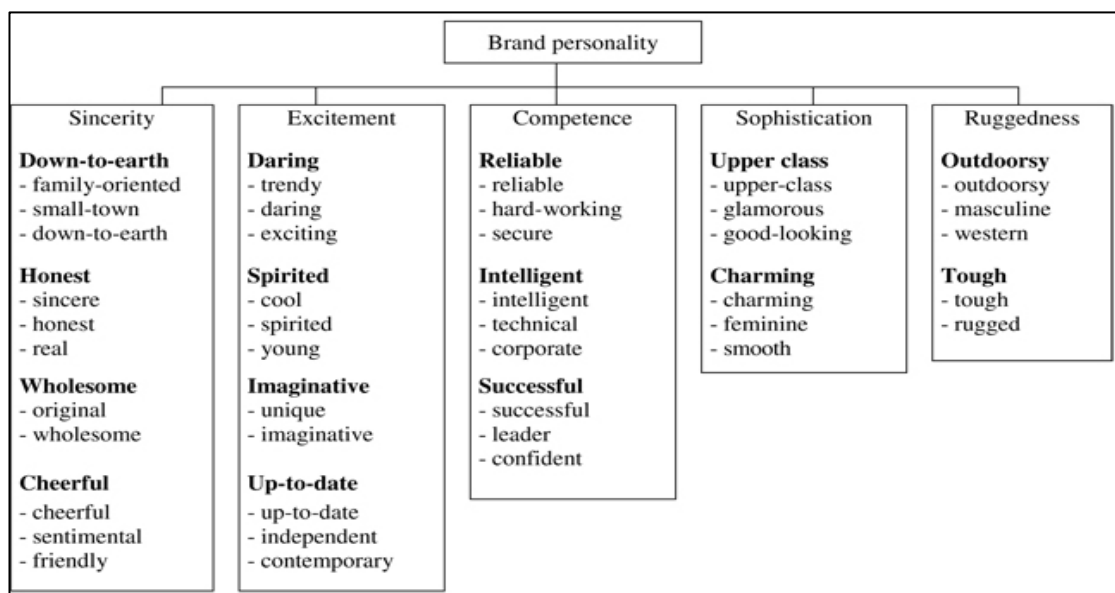
On the other side, the dimensions of brand personality and the measurement of the concept has been a discussion area in the literature. Despite the growing interest in the brand personality concept, its measurement has been insufficient for a long time (Lückerath, 2010). Scales taken from human personality psychology have been utilized but they could not be directly applicable and satisfying for brands. For example, Alt and Griggs (1988) categorized brands as successful and less successful brands. They made in-depth interviews with experts to attribute characteristics to each of two brand groups. According to experts’ feedbacks and comments, there were three brand personalities dimensions were generated as ‘Extraversion’, ‘Social Acceptability’ and ‘Virtue’. A fourth factor, ‘Potency’, proved to be unstable. However, it was addressed that Alt and Griggs’ (1988) scale was not validated and could not be generalised (Lückerath, 2010, p.20) “due to the small number of product categories used in different industries”.

At the same time, Batra et al. (1993) studied on brand personality and developed a tool to measure the brand personality dimension. They created a list and selected the most suitable 200 characteristics, which are able to attribute to the brands. Batra et al. (1993) asked a group of postgraduate marketing students to narrow the list down to 30 words. As a result, Batra et al. (1993) formulated a seven-factor-solution whereby two bipolar adjective pairs further specified each of the seven dimensions. However, again like the previous brand personality frameworks, Batra et al.’s study could not be used as a representative measurement tool because of the small sample size and the limited number of brands included in the test design (Hieronimus, 2003).

In the another study, Strausbaugh (1998) used the Myers-Briggs Type Indicator (MBTI) for the description of brand personality dimensions. The MBTI is an instrument used for the typologization of personalities and is an advancement of Jung's personality matrix. However, this measurement could not gain too much acceptance in academic researches (Lückerath, 2010).

Finally, based on the insufficiency of suitable brand personality research methods, Aaker (1997) studied to fulfill the requirement or a valid instrument by developing an appropriate model which is valid and generalizable across product categories. Aaker (1997) developed The Brand Personality Scale (BPS) as being a pioneering work on the dimensions of brand personality and gained high acceptance by the field of consumer behavior research. As a result of the research, Aaker (1997) found five dimensions that represented a brand's personality the best, which were 'Sincerity', 'Excitement', 'Competence', 'Sophistication' and 'Ruggedness'. Furthermore, Aaker (1997) identified the characteristics which were subsumed under each brand personality dimension. The five dimensions with their respective facets (attributes with highest item-to-total correlation) (Aaker, Benet-Martinez and Garolera, 2001, p.494) are presented with Figure 2.5

Figure 2.4: Brand personality dimensions



Source: Aaker, Jennifer L. 1997. Dimensions of brand personality. *Journal of marketing research*. 34, pp. 347-356.

It was indicated that by Moss (2011), like in the consumer markets, pharmaceutical companies would focus on to develop strong brand identities through with intensive branding activities and Moss (2011) researched the success factors to do it in the pharmaceutical business. Moss (2001) explained how a strong brand identity could be built in pharmaceutical industry. According to his implications, first of all, identifying the brand identity is a must to develop effective brand strategy. The second important object is development of marketing activities, which are fully consistent with the identified brand identity. Finally, as cited by Bedranik (2005, p.643) “regular monitoring of the brand image should be enhanced to verify if there are no differences between both the brand image and set brand identity”.

However, according to Schuiling and Moss (2004), pharmaceutical companies do not settle the communication strategies proactively for creating the brand identity or brand personality and they do not communicate the identity effectively to the customers. “The big difference in strategies may come because of defining the branding involves identifying what key differences might exist between the pharmaceutical industry and the fast moving consumer goods (FMCG) industry” (Kumar and Srivastava, 2013, p.25).

On the other side, Sung and Tinkham (2005) emphasized that there are major differences between brand and brand personality. As stated by Leonard and Katsanis (2013, p.585) “human personality can be implied by character traits and general habits, behaviors, attitudes, feelings, beliefs, demographic information, and physical appearance”. However, brands are not human and personality dimensions only can be attributed by their image, physical view and functions, which are experienced by the consumers (Sung and Kim, 2010). In sum, many researches supported that consumers do not live any difficulty in determining the brands with human personalities or characteristics (Aaker, 1997). Attributions of human personality dimensions to the brands let consumers to enter their brands to their daily life, let them to have eloquent relationships with the brands and let them to go to the symbolic or self-expressive state beyond the brands’ basic functional perspective state (Leonard and Katsanis, 2013).

Consequently, the concept of brand personality helps to enhance the meaning of the brand for the consumer and helps to strengthen brand-consumer relation. Besides, brand

personality is useful for consumers to gain symbolic benefits via purchasing or possessing the brand (Matthiesen and Phau, 2010). Within this frame, a personality-directed brand management has found its way into the pharmaceutical world. As Lückerath (2010, p.2) has emphasized, “the understanding of brands as personalities enables a company to better exploit the emotional benefits of a brand and to build up long-term customer-brand relationships and therewith also brand equity”.

When pharmaceutical branding strategies are examined, it is recognized that marketing activities and marketing strategies have entered the transformation period especially changes in the legal processes and increase in the usage of generic drugs which is also supported by the legal authorities due to more cheaper price (Hall and Jones, 2007). So, pharmaceutical companies following more marketing focused strategies in today. Moreover, as emphasized by Leonard and Katsanis (2013), developing marketing strategies with taking into consideration of brand identity and brand personality creates serious advantage against the competition especially where company wants to differentiate itself such as in generic market, increase the communication with customers and companies, increase the possibility of maximizing the profits and influence the decision makers. Finally and most importantly, created marketing strategy with a combination of brand identity and brand personality has power to increase the market share (Leonard and Katsanis, 2013). Blackett (2001) implied that a powerful brand will create a competitive advantage for pharmaceuticals and “in the twenty-first century, branding ultimately will be the only unique differentiator between companies. Thus, “brand equity is accepted as a key asset and brand personality became an important factor that contributes to the development of pharmaceutical brand equity (Leonard and Katsanis, 2013, p.585).

Moreover, brand personality allows companies to create a distinct and meaningful image in the minds of consumers (physicians). This situation allows companies to create four differentiation points for the products. It contributes to “more favorable evaluations when compared to a generic offering; and increases brand equity, brand loyalty and brand trust among the prescribers”. (Sung and Kim, 2010, p.642)

In addition, technological upheavals and compelling regulations in the market, forcing pharmaceutical companies to change the focus of physicians to only on product

functions. Moreover, expectations of physicians are changing and they are impacted by the other industries' impulsive marketing activities. It should not be forgotten that they are also the potential consumer like us (Leonard and Katsanis, 2013). Thus, "the creation of a unique and favorable brand personality has the potential to enhance marketing effectiveness, particularly in industries that offer generic products with similar product characteristics" (Geuens, Weijters and Wulf, 2009, p.98). According to Kapferer's (2012) implications, it is suggested that brand personality may add value and prevent substitution during the prescription decision across the physicians. For this reason, it is suggested that usage of brand personality may be also crucial for marketing the product across the prescribers.

2.2.3 Brand Awareness

Brand awareness is the brands' presence and its strength in the consumers' minds (Aaker, 1996). There are different brand awareness levels in the consumers' minds which depends on the how consumer can easily remember or recall the brand. According to Pitta and Katsanis (1995,p.53) "consumers that are exposed to advertising, word of mouth, and other promotions, which are able to recall the brand only with some kind of cue, achieve a low level of brand awareness, recognition, also called aided recall". If the aided recall is not enough to generate consumer preference, consumer will not be able to complete the total picture of the brand. In the literature, consumers who have high level of brand awareness for any brand without any aid, often named unaided recall. Under this circumstances, "the associative model of memory would describe the strength of association of a brand name with a situation as strong" (Pitta and Katsanis, 1995. P.54).

Aaker (1991) defined brand awareness as the ability of a potential buyer to recognize or recall that a brand is a member of a certain product category and according to him, brand awareness can create value to a brand by four ways such as being an anchor to which other associations can be attached, creating familiarity, being signal of commitment and taking the brand into consideration list. A number of studies conducted on the effects of brands awareness showed that it had a positive effect on the sales of the product (e.g. Sandler and Shani, 1992; Cuneen and Hannan, 1993; Hansen and Scotwin, 1995; Lardinoit and Derbaix, 2001).

Rossiter and Percy (1987) stated that brand awareness is vital for the communication between the brand and the consumers. In this process, without a brand awareness establishment between the two parts, communications can not be started. “Brand attitude can not be formed, and intention to buy cannot occur unless brand awareness has occurred” (MacDonald and Sharp, 2003, p.1).

Chi, Yeh and Yang stated that (2009, p.135) “brand awareness consists of brand recall and brand recognition”. Brand recall means that when the consumers face with the brands, consumers’ ability to remembering the name of the brand exactly. On the other hand, brand recognition is the indicator of consumers’ ability to detecting a brand when they face with any brand cue. It means that what consumers tell about the brand when they see and hear it (Hoeffler and Keller, 2002). Brand awareness is able to distinguish with its depth and width. Depth means that how consumers easily are able to recall or identify any brand. Width is how consumers examine the brands when they purchase a product and a brand name comes to their minds at once. If any product has depth and width simultaneously, consumers will focus on a specific brand. It is the indicator that product has higher brand awareness. Moreover, brand name is the most important element in brand awareness (Davis, Golobic and Marquardt, 2008).

Another element of brand equity which is brand associations is defined as “anything linked in memory to a brand” (Aaker, 1991, p.40). “Brand equity is supported in great part by associations that consumers make with a brand. These associations might include product attributes, a celebrity spokesperson, or a particular symbol. Brand associations are driven by the brand to stand for in the consumer’s mind. A key to building strong brands, then, is to develop and implement a brand identity (Aaker, 1996). According to Aaker (1996), brand associations create value for brand by helping to process or retrieve information, by differentiating brand, by providing reasons to buy, by creating positive attitudes, and providing basis for brand extensions. The existing literature on the brand awareness and associations shows us that there is a conclusive result in favor of positive effects of them on the attitudes or purchase decisions of the people.

The various brands in the pharmaceutical industry and various companies in the industry influence the physicians’ prescribing decision. Take a simple pain killer drug in

the market. There are many brands in the market and generally they provide the similar efficacy on the diseases. Therefore, in the process of decision making, brand remembrance play an important role. For this reason, pharmaceutical marketing activities are crucial to create high awareness in the physicians' minds (Ion, 2013). In the study of Girdharwal and Singh (2007), five impulse factors are identified and it has been found that they have potential to stimulate physicians' decision or to remember the products (Table 2.5).

Table 2.5: The importance of factors in remembering the names of the brands in the process of prescription by physicians/pharmacists of the drugs

Position	Factor
1.	Names associated with molecules/the producing company/illness
2.	Short names of the products
3.	Constant remembering (actions of direct marketing)
4.	Names easy to pronounce
5.	Placing little gifts on the table or in the doctor's/pharmacist's office

Source: Girdharwal, N., & Singh, A., 2007. A Study of Physicians Behaviour toward Marketing of Pharmaceutical Products . *A Case Study of Indian Market* 5 (6), pp. 36

From Table 2.5, it is seen that the physicians have tendency to prefer brands which names of the brands are associated with the molecules or product owner company. The other outcome of this study is regular visits by the pharmaceutical sales representatives have been found more effective activity rather than giving small gifts to the physicians. Additionally names of the brands, which are easy to pronounce have found an important factor that influence the brand awareness (Girdharwal and Singh, 2007; Ion, 2013). Moreover, a recent study, which was performed in Iran, has revealed that the physicians preferred well-known brands and they tend to differentiate the generic and branded ones while prescribing the drugs (Dadfer, Brege and Bayrami, 2012). Therefore, in the case of the drug sector, it can be suggested that the brand awareness and associations of the product may have roles on the prescribing behavior of the prescribers.

2.2.4 Perceived Quality

Aaker (1996) defines perceived quality as “the customer’s perception of the overall quality or superiority of a product or service with respect to its intended purpose, relative to alternatives” (p.17). Perceived quality is an objective measure of the customers (Lee et al. 2011) because customers decide on the quality of the products or the services they purchase according to their own perceptions and experiences. Perceived quality of a brand is thought to be a significant predictor for prescribers' perceptions about a brand and product (Song et al. 2012). Moreover, it is indicated that, high quality is the most important factor for the pharmaceutical companies and it directly contributes the success of the pharmaceutical companies. In addition, majority of the physicians and pharmacists only recommend the products, which have high quality and efficacy (Harrison and Hart, 1987).

Therefore, pharmaceutical companies communicate with the physicians constantly in order to promote the products in their portfolios. The producers also invest in the research and development activities in order to launch new pharmaceutical products (Ion, 2013, Yilmaz (2008) stated that product has an important role in prescription behavior as it is effective in weak, medium and strong cases, decreasing mortality, efficiency, long half-life, and having less side effects. Moreover, it was indicated that articles and medical studies related with the product also impact the prescription decision of the physicians. The scientific researches about the product and in which journal they are published are significant to physicians. They give more importance to other scientists’ experience about a drug’s active ingredient. Therefore, the result of medical studies leads to doctors’ prescription (Bülbüloğlu, 2014).

Berndt et al. (1996) in their study, researched the four markets and four companies in the USA and they have found that quality of the product which is measured and approved by the different dimensions such as efficacy, dosage, profile of side effect and approval of FDA, directly have positive effect on sales quantities of the drugs. It is the reality that “drug quality is little more than physician perceptions as to how well a particular drug from a particular pharmaceutical firm will perform for a particular patient’s conditions” (Waheed et al. 2011, p.280).

2.3 FACTORS LINKED TO THE PRESCRIBER

As mentioned in the previous parts of this study, the external environment of pharmaceutical industry highly competitive due to challenging rivals, technological advances, product research and development requirements, consumer changes, physicians' preferences, and etc. According to Smith et al (2002), the pharmaceutical industry environment is defined by the instruments of marketing mix, competitive environment and the company's internal environment. Thus, if marketers are accustomed to traditional views of marketing, they may be insufficient in their activities. It is suggested that not only the traditional marketing mix factors but also the role of another party within the marketing framework of the company should be considered well. With this respect, the decisions and behaviors of physicians become very important within the marketing of the product and success of the pharmaceutical company. Without the interference and contribution of the physicians, the products cannot be known or bought by the patients. Thus, the physicians as being the prescribers of the drugs are seen as crucial factor of prescription and use of the drugs (Waheed et al. 2011).

Kotler and Armstrong (2001) mentioned there are actors and forces outside marketing that directly and indirectly affect marketing managements' ability to create and deliver value added to the target market through a more rational and clearer framework of mutual influences. Upon this statement, prescribers (physicians) are the important actors who are outside the marketing management of the company, but have influential power on creating awareness of the products and adding value to the marketing chain of the pharmaceutical company in terms of the promotion and sales activities of the products (Ion, 2013).

Moreover, Vasiljev and Pantelic (2010) have indicated that due to the key idea of marketing, the patient (consumer) becomes the central element, but their decisions to purchase and use pharmaceutical products (especially prescription drugs) are not independent; they are usually determined by the influence of prescribers. The product demand and use of the patients are influenced by a number of environmental factors, which determine their process of information gathering, decision making and behavior on the pharmaceutical market (Vasiljev and Pantelic, 2010)

In this context, Ladha (2007) have provided implications regarding the role of prescribers' choices in patients' drug purchase behaviors. Ladha (2007) studied the factors that affect patients' choices and purchase intentions of the drugs. In this study, important factors studied were “attributes like price, name, and doctor’s prescription, past experience, advertisement and promotion” (Ladha, 2007, p.147). It has been found that the most important influencing factor for patients is physician’s suggestions. It is also same for non-prescription products. The other factors are “store promotion, price, family/friend’s, brand name and advertising which play a significant role in purchase making” (Ladha, 2007, p.147).

On the other side, Moss and Schuiling (2004) considered that doctors/physicians should be viewed as consumers within the pharmaceutical industry since they look for quality, efficacy, reliability, and need to be reassured. Kumar and Srivastava (2013) added that physicians act with the limited information and mostly they are impacted by the reputation of the company and this impact physicians’ attitude to the disease and patients. Additionally, “they are also making decisions for emotional reasons, not for rational one, secondly deciding how to communicate this in a coherent way to target customers” (Kumar and Srivastava, 2013, p.646).

Acknowledging the roles of prescribers, Bülbüloğlu (2014) implied that when the drug has been prescribed by several other physicians and when the drug has been known for a long time, it becomes more effective on the prescription choice of the physicians. If the physicians prescribe any particular drug frequently, it is indicator of the high satisfaction level of patients and physicians, though; the drug efficacy is high and it is safety. This situation is a reason of preference.

Another research study was conducted in Chinese country hospitals for investigating the prescription pattern and its influencing factors (Wang, Li, Zhu, Xu, Lu and Feng, 2013). The results of the study showed that demographic characteristics of the physicians were significant factors impacting the prescription pattern. It was indicated that there were significantly important differences between the academic degrees and specialties. It has been observed that older doctor have tendency to use more antibiotic drugs. The other important result is physicians who have well education and who have training about the prescribing the drugs realistically are tended to prescribe original product instead of

generic ones. Moreover, (Wang et al) stated that (2013, p.63) “the more supportive the doctor’s attitude to national essential medicine policy, the higher the percentage of generic drugs was prescribed”. The outcome of this study is the prescription rate of essential medicines from drugs lists, namely treatment guidelines, associated with a high level of medical knowledge.

2.4 PRESCRIPTION BEHAVIOR

It is suggested that in order to understand why physicians (doctors) behave the way they do during prescription, it is important to examine the factors that influence their prescribing behaviors such as his/her cognitive evaluations regarding the drug company, the sales representative, the product itself, personal attitudes, advertising/promotion activities, etc. According to the previous literature findings about the subject, it is recognized that a number of studies have focused on the effects of company related, product related, sales representative related, and advertising/promotion activities related aspects on prescription behavior. The researchers have mentioned the role of intentional control and structuring of cognitive factors in the prescription behavior (Conner and Sparks, 2005; Ion, 2013,). The studies that examined the relationship between company, product, sales representative, promotion, etc. linked issues and prescribing behavior have provided implications for “Social-Cognitive Theories”.

The aim of prescribing drugs refers to the fact that they are beneficial to and necessary for the patient, implicitly to their health in order to come over any health problem. Cognitive mechanisms “which lie at the basis of individual behaviors, for example adopting health behavior, are important to be analyzed and studied taking into consideration the importance of the individual decision in adopting that behavior” (Ion, 2013, p.30). However, it has been argued that physicians engage in drug prescription behavior as a result of serial cognitions related to taking care of the patient and the motivational factors. Physicians’ prescription behavior or medical activity can be influenced by a series of factors. For example,”individual motivational predispositions which lead to the change of prescription behavior: the action of prescribing medicines, carrying out a medical examination, the recommendation of specialists to patients, counselling” (Ion, 2013, p.30).

After performing a conceptual research, Grimshaw, Eccles, Walker and Thomas (2002, p.238) explained how physicians' prescribing behaviors and all other medical actions emerge and take place. Other scholars have examined the healthcare professionals' intentions and behaviors with a systematic review of studies based on social cognitive theories (Godin, Belanger-Gravel, Eccles and Grimshaw, 2008). Their study analyzed the mechanisms which underlie the adoption of a prescription behavior from the perspective of the socio-psychological theory and they indicated that most prescribing decisions of the physicians were an outcome of cognitive evaluations (Godin et al. 2008).

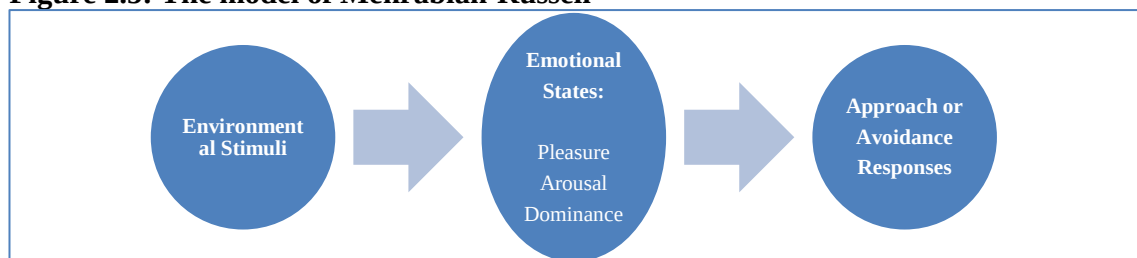
Social-cognitive theories describe “an individual’s opinions/knowledge as processes which take place among external noticeable stimulus and the reactions which appear in real situations” (Bandura, 1989, p.30). Social cognitive theory favors a model of causation involving triadic reciprocal determinism. In this model of reciprocal causation, behavior, cognition and other personal factors, and environmental influences all operate as interacting determinants that influence each other bidirectional (Bandura, 1989). It is indicated that personal expectations, beliefs, self-perceptions, goals and intentions shape and give direction to individual behavior, thus, what individuals think, believe, and feel affects their way of behaving (Bandura, 1986). Bandura (1989, p.32) also noted that “individual expectations, beliefs, emotional bents and cognitive competencies are developed and modified by social influences that convey information and activate emotional reactions through modeling, instruction and social persuasion”.

Moreover, Theory of Planned Behavior/Motivated Action Theory has provided an understanding of prescribing behavior process and how it accrues (Ion, 2013). Theory of Planned Behavior takes place within the category of social-cognitive theory. While describing the theory's highlights, Ajzen (1991) indicated that with that theory individuals are seen as rational actors who process information before forming certain behavioral intentions, which would subsequently transform themselves into the behavior itself. The theory suggests that attitude of the person is formed on the basis of a set of opinions about the consequences triggered by the adoption of behavior and the assessment of considered consequences while the variables, attitude, the subjective norm and the perceived control are based on beliefs and opinions that person (Ajzen,

1991; Ion, 2013). In a study of Sheeran (2002), it was argued that intention and behavior corresponded in terms of action, aim/goal, context/circumstances related to the patient, and time (period when the physician adopted the behavior). In that study, Sheeran (2002) provided implications about how behavioral changes of the physicians in terms of drug prescription take place and he studied the subject from the perspective of the Theory of Planned Behavior.

On the other hand, Mehrabian and Russell (1980) proposed a measure of environmental stimulation in investigating the links between the three components of the Stimulus-Organism-Response (S-O-R). Mehrabian and Russell (1980) developed a theoretical model, as illustrated in Figure 2.6. They have defined various physical and social settings as “environmental load” (Mehrabian and Russell, 1980). In Mehrabian and Russell’s model, the environmental load is supposed to be related to the degree of arousal in a certain condition. It was argued that "Environmental Psychology" is explained with the Stimulus-Organism-Response (S-O-R) model (Spangerberg, Crowley and Henderson, 1996, p.68). S-O-R (stimuli-organism-response) model of Mehrabian and Russell (1980) indicates that an individual’s approach and avoidance responses within an environment are the result of emotional states created by the given environment. In this model, the environment is accepted as stimuli which influence individual’s internal states and as a result create approach or avoidance responses (Bilgic, 2007). In this model, response is the “the outcome action of consumers, attitudes or behaviors” (Bagozzi, 1986).

Figure 2.5: The model of Mehrabian-Russell



Source: Donovan, R. J., Rossiter, J. R., 1982. Store Atmosphere: Psychology Approach. *Journal of retailing*. 58, pp. 42.

Further, Bitner (1992) suggested that individuals’ perceptions of the environment influence their internal states in emotional, cognitive, and physiological ways and that the behaviors of individuals toward and within an environment are largely determined

by their internal responses (emotional, cognitive, and physiological) to the conditions. From a marketing point of view, it is mentioned that positive internal responses lead to approach behaviors as buying, staying, and loyalty. Negative internal responses cause avoidance behaviors (Bitner, 1992). According to Bitner (1992), an individual's perception of the conditions may elicit emotional responses, which in turn, influence his/her behaviors.

With that respect, based on the perspectives of Social Cognitive Theory, Planned Behavior Theory, and Environmental Psychology approach, in order to forecast the specific physician prescribing behavior, a series of social-cognitive theories were approached on the basis of which the behavioral intention and the behavior itself were explained (Sheeran, 2002,; Conner and Sparks, 2005,; Ion, 2013,). Accordingly, it can be suggested that physicians respond to conditional factors emotionally, cognitively, and physiologically (Davies and Ward, 2002) and their individual responses influence their prescription behaviors within a patient-physician-drug prescription context.

In sum, based on that theoretical foundation, previous research investigated the major role of physicians' assessments of external motivators and highlighted their impacts on prescription intentions (Eccles, Hrisos, Francis, Kaner, Dickinson, Beyer and Johnston, 2006). The factors influencing prescription behavior of physicians, discussed in the literature are price of the product, availability of the product, communication made by sales representatives, the product quality that is being promoted (Shamim-ul-Haq et al., 2014). It has been addressed that “the influence of promotional tools by pharmaceutical industry on prescribing behaviors of doctors has a greater impact. The general promotional tools like gifts and etc. are shown to be more influential rather than scientific promotional tools for the physicians contrast with consultants” (Boltri, Elizabeth, Godon and Vogel, 2002, p.730).

In addition, name of the company, free samples of the drugs, continuous medical educations, sponsorship to congress, incentives, gimmicks, innovative drugs of the companies, research and development activities of the companies, other promotional inputs have been indicated as the factors linked to the prescribing behaviors (Greene, 2000). The review of the literature shows that the company related factors, sales representative factors, product related factors, patient and practitioners' own personal

factors could be the significant factors that influence the physician prescription behavior.

Another research was conducted in Denmark, which showed that price was also an important factor in prescribing drug and on top of that pharmaceutical industry, sales representative affects physician's behavior (Gehlbach et al. 1984). Pharmaceutical companies use drug samples as a technique in the promotion facilities. These companies focus on the reality that drug samples affect physicians' prescribing decisions. For example, according to the findings of a research conducted among doctors, physicians gave importance to drug samples and thus, drug samples provided advantages for the companies (Shamim-ul-Haq et al., 2014). It was also stated that the recognized advantages of drug samples often led physicians to review that they would distribute or recommend medicine that differed from their preferred medication choice (James et al., 2009,; Amir and Zaman, 2001).

Consequently, based on the mentioned theoretical rationale (Social Cognitive Theory, Theory of Planned Behavior) it is suggested that the behavioral intention of the physician will be formed on the basis of the simultaneous influence of attitude about that prescribing behavior, perceived social pressure (subjective norm) and the perception of control on adopting that prescription behavior. For instance, when it is considered for a physician, to adopt a positive attitude to the prescription of a certain drug to a patient, a physician will assess positively the expected change in the patient's health; he would also have to believe that prescribed drug is capable of producing that positive health modification. However, physicians' drug prescribing behavior cannot be understood only such kind of a belief regarding the patient's health modification. Because, as it is mentioned in previous paragraphs, prescribing behavior takes place in a social context, physicians-patients, influenced by a series of aspects or situational factors: physician's expectations, physician's evaluations about the drug company and the sales representative, opinions about the rewards/promotions/advertising options, and patients' expectations. The model of interaction between the physician and the prescription behavior starts where the existence of a patient's health problem, but continues with a series of cognitive evaluations related to other external factors and motivators (Greene, 2000).

In this context, it is found important to have knowledge about how physicians' prescription behavior can be affected by their cognitive states and can be influenced by the situational factors. Therefore, we come to the generation of the research model of the current study by considering all those theoretical implications and previous literature findings.

2.4.1 Brand Satisfaction

Due to the increases in competition among organizations and slow of growth new consumers, companies have begun to seek new ways to increase their marketing and selling abilities. It has been recognized that the most popular trend is concentration on increasing purchases of existing customers through brand relationship including especially the concepts of brand satisfaction and brand loyalty (Asadollahi, Jani, Mojaveri and Allahabadi, 2012). By enhancing brand satisfaction, companies become able to persuade customers to purchase companies brands, which lead to purchase repetition and loyalty in long term.

Many studies have been conducted on brand satisfaction (e.g. Kuenzel and Halliday, 2008; Grisaffe & Nguyen, 2011; Tsai, 2011) which identified antecedents of satisfaction in the extant literature are functional, symbolic, and experiential benefits (Nam, Ekinici and Whyatt, 2011). It is argued that with the influence of brand attributes, past consumption experiences affect brand satisfaction (Pappu and Quester, 2006). Brand satisfaction is crucial for consumers to be loyal to the products (Sivadas and Baker-Prewitt 2000). Brand attitudes are also shaped due to the perceptions of brand satisfaction (Cooil, Keiningham, Aksoy and Hsu, 2007). He, Li and Harris (2012) stated that when the performance of a brand fills the expectations of the purchaser, a satisfaction of the consumer is increased. On the other side, when the meeting of consumer expectation is failed, then the dissatisfaction occurs (Chinomona, 2013).

Reynolds and Arnold (2000) implied that satisfied customers have a higher likelihood of recommending that others try the source of satisfaction. Giese and Cote (2000 as cited in Martisiute, Vilutyte and Grundey, 2010, p.8) asserted that brand satisfaction was a summary affective response of varying intensity with a time-specific point of determination and limited duration directed toward focal points of product acquisition

and consumption. Suh and Yi (2006, p.146) described brand satisfaction “as an evaluative summary of direct consumption experience, based on the discrepancy between prior expectation and the actual performance perceived after consumption”. Brand satisfaction is defined by Grisaffe and Nguyen (2011, p.1053) “as the cumulative satisfaction as overall consumer’s evaluation based on the consumer’s total purchase and experience with a brand of product or service”.

A research study aimed to investigate how brand satisfaction, brand trust and brand attachment influenced the perspectives on brands and how affected current and future purchase behaviors (Asadollahi et al. 2012). They found that brand satisfaction was affected by directly by brand trust, current purchase and indirectly by brand attachment (Asadollahi et al., 2012).

A number of studies have showed that consumer satisfaction is one of the loyalty enhancing factors (e.g., Vasquez-Parraga and Alonso, 2000; Torres-Moraga, Vasquez-Parraga and Zamora-Gonza’lez, 2008; Martisiute et al. 2010; Chinomona, 2013). When the company attracts, satisfies and retains the customers, then it may become successful and high performer within the market. Therefore, it is need to identify the factors that influence consumers’ satisfaction with a product or service and what affects their decision to purchase a product and to become loyal to the company's product (Martisiute et al., 2010). Taylor and Baker (1994) implied that brand satisfaction and brand loyalty are strongly related concepts. Consequently, satisfied customers are expected to be loyal customers also (Martisiute et al. 2010).

As it is seen, a Various studies have analyzed the impact of experience marketing (Brakus, Schmitt and Zarantonello, 2009) and attempted to measure its outcomes. Fransen and Lodder (2010) have empirically examined the effects of experience marketing communication tools on consumer responses, and identified a positive impact on brand attitude and brand relation. Tsaur, Chiu and Wang (2006) revealed that brand experiences in terms of satisfaction had positive effects on emotion and emotion had a positive effect on the behavioral intention through the means of satisfaction. Cleff, Dörr, Vicknair and Walter (2012) confirmed that brand experience of satisfaction influenced consumer loyalty directly and indirectly through brand personality associations. Accordingly, brand satisfaction is an antecedent of attitudinal loyalty, therefore, it is

suggested that the brand satisfaction level of the physicians will influence the current and the future prescription choices.

2.4.2 Brand Loyalty

According to Keller (1993), after creating brand awareness, a set of positive associations of the brand must be created in the consumer's mind. This is important to create a positive brand image on consumer's mind. Brand image is described as the perceptions about a brand as reflected by the brand associations within the consumer's memory (Keller, 1993). The three important aspects of brand image are indicated as the favorability, strength, and uniqueness of brand associations. A positive brand image is vital for defining a target market, determining a product's position, and measuring market response (Pitta et al. 1995). Strong positive brand equity is also marked by strong loyalty to the brand. In effect, it is a consequence of the brand equity. As the building of a strong positive brand is completed, over time loyalty occurs towards it. Brand loyal customers have a reluctance to switch brands (Percy and Elliot, 2007). Further, Goodwin (2004) defined brand equity as the antecedent of brand loyalty. According to the research conducted by Taylor, Celuch and Goodwin (2004), there is a positive and strong relationship between behavioral loyalty and brand equity and trust.

It is stated that the success of a company depends on its capability to attract consumers towards its brands. In particular, it is critical for the survival of a company to retain its current customers, and to make them loyal to the brand. Indeed, the costs of attracting a new customer have been found to be up to six times higher than the costs of retaining old ones (Dekimpe et al. 1997). The concerns of consumers to different products and brands are increasing in the recent environment. This may appear as a problem for creating brand loyalty and in order to cope with this problem companies should make their customers loyal to their brands and hinder them choosing any other brands (Vural, 2013, p.22).

Aaker (1991, p.45) described brand loyalty as “the extent to which customer has a positive attitude to word a brand, and the amount of his/her commitment to mentioned brand and intention of continuing buying in future”. Brand loyalty also identified as “a function of psychological (decision making, evaluative) processes exhibited over time”

(Fournier and Yao, 1997, p.452). Brand loyalty generally implies a strong commitment to a particular brand on the part of the consumer and it is a major component of brand equity (Vural, 2013).

Metemini (1998 as cited in Belli, 2011) defined brand loyalty to be the core dimension of brand equity since and loyal customer base represents a barrier to entry, a basis for a price premium, and protection against intense price competition Brand loyal customers feel committed to the brand and recommend their brands and would pay higher prices (Aaker, 1991). Brand loyalty is very important for marketers since it brings higher sales volume, premium pricing ability, retaining customers and attracting new customers, reduced marketing costs, trade leverage and time to respond to competitive threats (Belli, 2011).

Brand loyalty is the measure of the attachment that a customer has to a brand. Brand loyalty determines how consumers can switch to another brand when that brand changes its product features or prices (Sheff, 2011; Nemati, 2009). According to Aaker (1991) brand loyalty is the only mean for customers to pay the premium and one of the most important strategy for companies to compete with other brands.

Yoo and Donthu (2001, p.3) indicated the consumer intentions to be loyal from an attitudinal perspective with the definition "the tendency to be loyal to a focal brand, which is demonstrated by the intention to buy the brand as a primary choice". According to Keller (1998), brand loyalty occurs when favorable beliefs and attitudes for the brand are resulted in repeated purchasing behavior. Thus, loyalty conceptualization should include both attitudinal and behavioral loyalty by concluding that the term loyal can be interpreted in different ways, ranging from affective loyalty "what I feel to behavioral loyalty —what I do" (Belli, 2011, p.49). Taylor et al. (2004) examined loyalty as a function of behavioral loyalty and attitudinal loyalty and defines brand loyalty as —a deeply held commitment to re-purchase or re-patronize a product consistently in the future, thereby causing repetitive same-brand or same-brand set purchasing, despite situational influences and marketing efforts having the potential to cause switching behaviors. In accordance, the ultimate customer loyalty is a function of perceived product superiority, social bonding, and their synergistic effects (Belli, 2011, p.49).

In pharmaceutical industry, to build a strong brand with loyal customers has strategic importance since it provides competitive superiority and economic benefits to a company. Moreover, by this way, marketing costs can be reduced, higher rates of return on investment can be enhanced, market shares can be increased, better cooperation with intermediaries can be obtained, favorable word of mouth and greater extension opportunities can be enabled (Delgado-Ballester and Munuera-Aleman, 2005; Chaudhuri and Holbrook, 2001). Therefore, understanding how brand loyalty is occurred and which factors affect brand loyalty and brand performance becomes to be essential (Vural, 2013, p.24).

Ogba and Tan (2009) mentioned that brand loyalty may also exist due to the absence of perceived differences between brand alternatives as a result of repeat purchase. As Haefner et al. (2011) indicated that brand loyalty does not happen instantaneously and it is very much related to the successful expression of marketing strategy and brand identity.

In marketing of the products in pharmaceutical industry, brand loyalty consists of a physician's (consumer's) commitment to prescribe the brand and can be demonstrated by repeat prescription of a product or service (Dick and Basu, 1994 as cited in Vural, 2013, p.24). True brand loyalty implies that the prescribers are willing, at least on occasion, to put aside their own desires in the interest of the brand (Oliver, 1999 as cited in Vural, 2013, p.24).

In the case of pharmaceutical industry, the factor discussed in the prescribing behavior research is price of the product, availability of the product, communication made by sale representative, and the product quality, which is being promoted. Name of the company for which brand belongs to which company has been indicated as one of the most important factors influencing the prescribing behaviors. The physicians are usually concern about the quality of general medication, and possible obligations linked with their use (Shamim-ul-Haq et al., 2014).

Consequently, brand experience (including brand personality perceptions, loyalty and satisfaction) has been studied with great attention in the marketing literature. Consumers seek after functional benefits of a brand as well as the emotional

experiences. Therefore, how brand experience can be measured and how it affects consumer behavior have been examined by brand experience theory (Cleff et al., 2012). Moreover, Brakus et al. (2009) provided a well-defined framework to measure the intensity of consumers' experience with brands and its effects on satisfaction and loyalty. This framework provided valid and consistent implications for marketing practitioners in terms of understanding how brand experiences covered brand satisfaction and loyalty concepts. Based on the approaches of "experience marketing" (Pine and Gilmore, 1998) and "brand experience" (Brakus et al., 2009) approaches, it is suggested that brand experiences of satisfaction and loyalty impact the purchase decisions of the consumers. Deriving from these marketing implications and literature background, in this study we attempt to examine the relationship between physicians' product and brand related experiences/perceptions and his/her prescribing behaviors. For that aim, we included these dimensions under the product related factors within the research model of this study.

Furthermore, based on the previous studies' implications, it is inferred that among the motivations which determine the physicians/pharmacists to change the recommended or prescribed brand in the situation of the same therapeutic category there are the price, the introduction of new molecules, persistence of the medical representatives, the effort made by the producing company to promote its products, and respectively campaigns testing of new brands (Ion, 2013). Loyalty to the company's brands represents a strategic asset, which has been identified as a major source of the brands' equity within the views of the prescribers (Ion, 2013).

Therefore, in the case of the pharmaceutical industry, it is suggested that the brand image, loyalty, and its quality perceptions would be the product linked factors that may affect the prescribing behaviors. Since brand loyalty involves trust, the relationship that is based on prescriber trust will be influenced by these perceptions of the prescriber towards the brand image, brand quality and loyalty.

3. METHODOLOGY

In the first section, related studies and literatures are presented. In this part, model of the study, used methods and hypothesis are examined. Finally, data analyses and results of statistical analysis are presented.

3.1 CONCEPTUAL FRAMEWORK

In this section, aim of the study, models and developed hypothesis are presented. Additionally measurement scales and how they will be implemented to the study are discussed in this section.

3.1.1 Aim of the Study

Factors on prescribing behavior and their potential impact on prescribing behavior are the main paradigms of this study. There are series of studies investigate the impacting factors on prescribing behavior and measuring their impact on this behavior. Generally these studies investigated the marketing activities as an impacting factor and typically focused on the same dimensions. Common point of these studies is the promotional activities and sales representatives' visit to the physicians for the related products. However, in general they asked the impact of these factors but not measured the satisfaction and loyalty levels. Firstly, this study has a different structure as compared to previous studies with measuring satisfaction and loyalty level.

Researches and studies support that pharmaceutical sales representatives have an impact on prescription behavior. In general, positive relation has been found in the studies. Basically they visit the physicians for the product which they are responsible for and they give specific messages. It has been found that in various studies pharmaceutical sales representatives provide useful and accurate information about newly and already established drugs as presented in literature review. Yet, few of them investigated the relational dimensions. For instance, characteristic of the relation or similarity, likeability of the pharmaceutical sales representatives have not been investigated. This study again has a different structure as compared to previous studies with measuring the different dimensions of interactions.

There are number of academic studies done in Turkey but few of them are published in international journals. Güldal and her friends investigated the patients' perception about the promotional activities of pharmaceutical companies in Turkey and this study has been published in Journal of Pharmacy World and Science in 2006 (Güldal, 2000). They concluded that considerable numbers of patients were aware of promotional activities and they specified that these activities have impact on prescriptions and physicians (Güldal, 2000).

Also, there are few master and dissertation thesis related with directly investigating the multidimensional impacts or factors on prescribing behavior in the archive of YÖK – The Council of Higher Education. The first master thesis is done by Özbay (1981) about the pharmaceutical industry but this study generally researched the industry structure. Later, Sabi (1984) studied on pharmaceutical industry in general and it is one the first study mention the “marketing” term in this area. Kaan (1987) and Onaran (1987) analyzed the advertising campaigns of pharmaceutical industry. According to source data, one of the main studies in this area is done by Civaner (2006). He investigated the pharmaceutical industry marketing activities and analyzed the perception of physicians from the ethical dimension. Demirkıran (2010) analyzed the factors on prescribing behavior in his master thesis. He generally analyzed the attitudes towards the different factors (Demirkıran, 2010).

The main aim of this study is to analyze the multidimensional impacts on prescribing behavior. As it mentioned previously, there are series of studies which analyze the impacting factors but most of them are explanatory studies. The review of literature revealed that studies mainly used established constructs, adopted formerly established measurement scales with focusing on same dimensions. Generally promotional activities were investigated due to their strict relation with marketing concept. But there are different dimensions which should be investigated and which are important in practice. For instance, corporate related factors such as corporate reputation and its sub dimensions have not been investigated literally. Additionally brand related factors such as brand personality concept have never been mentioned.

For the purpose of this study, the factors influencing prescription behavior will be investigated. Primarily the factors influencing prescription behavior will be examined in

terms of the constructs of corporate linked factors, product linked factors and prescriber linked factors. As mentioned in previous chapters, corporate linked factors are consisted of three dimensions. These dimensions are corporate reputation, sales representative and advertising/promotion activities. The literature review reveals that corporate reputation has not been investigated literally on prescription behavior. There are also various sub dimensions of corporate reputaion such as emotional appeal, products&services, financial performance, vision&leadership, workplace environment and social responsibility (Fombrun, 1997) This study investigates the corporate reputation with these sub dimensions.

There are also series of studies investigates the relation between PSR and physicians but generally frequency of visit or providing effective information dimensions were investigated in these studies. As mentioned above, PSR has to build long term relationships with the physicians to be successful especially which have close, interactive and dyadic interfaces. So, characteristics of the relation and PSR professional are crucial and should be taken into consideration. In this study, characteristics of the relationships and professional value side of PSR are investigated. For the advertising and promotion side, this study has the similar concept with previous studies.

Product related factors are consisted of three dimensions which are brand awareness, brand personality and perceived quality in this study. Despite there are series of studies brand awareness which is also sub dimension of brand equity, there is an insufficient literature that directly identifies appropriate promotional strategies for creating pharmaceutical brand awareness. It is the same for brand personality dimension. This concept is created by Aaker (1997) and there is an increasing trend in the literature. It is interesting to note that; brand personality concept in the pharmaceutical industry has been investigated just once time and this study analyzed the brand personality perception from the patient side. Additionally, this study is published very new, in 2013 (Leonard, 2013). However, this project will be the first study in the literature which investigates the brand personality and prescription behavior relation (Kumar and Srivastava, 2013).

This study with the analyses of new and different dimensions on prescription behavior, will contribute to the Turkish and global pharmaceutical marketing literature. Understanding, identifying the factors and their relations with the prescription behavior will help all the parties related with pharmaceutical industry. It is expected to be a reference study for the industry marketers especially choosing the right strategy among the different dimensions. It is obvious that, as mentioned in previous chapters, quality of the product and the efficacy on the disease is not the only influencing factor on prescribing behavior.

3.1.2 Research Questions

As mentioned in the aim of the study part, this study will be the first study in the literature with measuring new and different dimensions. After the extensive literature research and comparison of the different studies, it has been concluded that influencer factors on prescribing behavior have been analyzed repeatedly and not new influencer dimensions added to studies. The reason is most probably restrictive marketing activities and scholars do not find this industry interesting to explore. So, we need to find out the different dimensions impact on prescription behavior in terms of brand satisfaction and brand loyalty.

- i. What are the relationships between corporate reputation and prescription behavior?
 - a. How does managerial competence impact brand satisfaction?
 - b. How does managerial competence impact brand loyalty?
 - c. How does trustworthiness impact brand satisfaction?
 - d. How does trustworthiness impact brand loyalty?
- ii. What are the relationships between PSR and prescription behavior?
 - a. How does ethical value of PSR impact brand satisfaction?
 - b. How does ethical value of PSR impact brand loyalty?
 - c. How does trust to PSR impact brand satisfaction?
 - d. How does trust to PSR impact brand loyalty?
 - e. How does similarity of PSR impact brand satisfaction?
 - f. How does similarity of PSR impact brand loyalty?

- g. How does social contact of PSR impact brand satisfaction?
 - h. How does social contact of PSR impact brand loyalty?
- iii. What are the relationships between advertising and prescription behavior?
- a. How does tangible rewards impact brand satisfaction?
 - b. How does tangible rewards impact brand loyalty?
 - c. How does detailing impact brand satisfaction?
 - d. How does detailing impact brand loyalty?
- iv. What are the relationships between brand related factors on prescription behavior?
- a. How does brand awareness impact brand satisfaction?
 - b. How does brand awareness impact brand loyalty?
 - c. How do brand personality and its dimensions impact brand satisfaction?
(competence, sophistication, excitement, ruggedness, sincerity)
 - d. How do brand personality and its dimensions impact brand loyalty?
(competence, sophistication, excitement, ruggedness, sincerity)
 - e. How does perceived quality impact brand satisfaction?
 - f. How does perceived quality impact brand loyalty?
- v. What are the relationships between prescriber demographic variables and prescription behavior?
- a.** How does prescribers demographic variables (gender, location, type of university, specialty) impact brand satisfaction?
 - b.** How does prescribers demographic variables (gender, location, type of university, specialty) impact brand loyalty?

3.1.3 Measurement Scales

For measuring corporate reputation which is under company linked factors in this study, Fombrun's (1999) reputation quotient is used. This scale is widely used in the literature and every year international consultant companies such as Nielsen publish reputation report about the companies and industries with using this scale. Until today, this scale evaluated 27.000 people across 20 attributes in 15 years (Nielsen, 2015)

Reputation Quotient is a comprehensive measuring method of corporate reputation that was created specifically to capture the perceptions stakeholder group as consumers, investors, employees or key influential. The instrument enables research on the drivers of a company's reputation as well as comparisons of reputation both within and across industries. This business reputation model has the following 6 drivers of corporate reputation with subsequent 20 attributes (Table 3.1). This scale has been tested in different countries and languages (Fombrun, 2001)

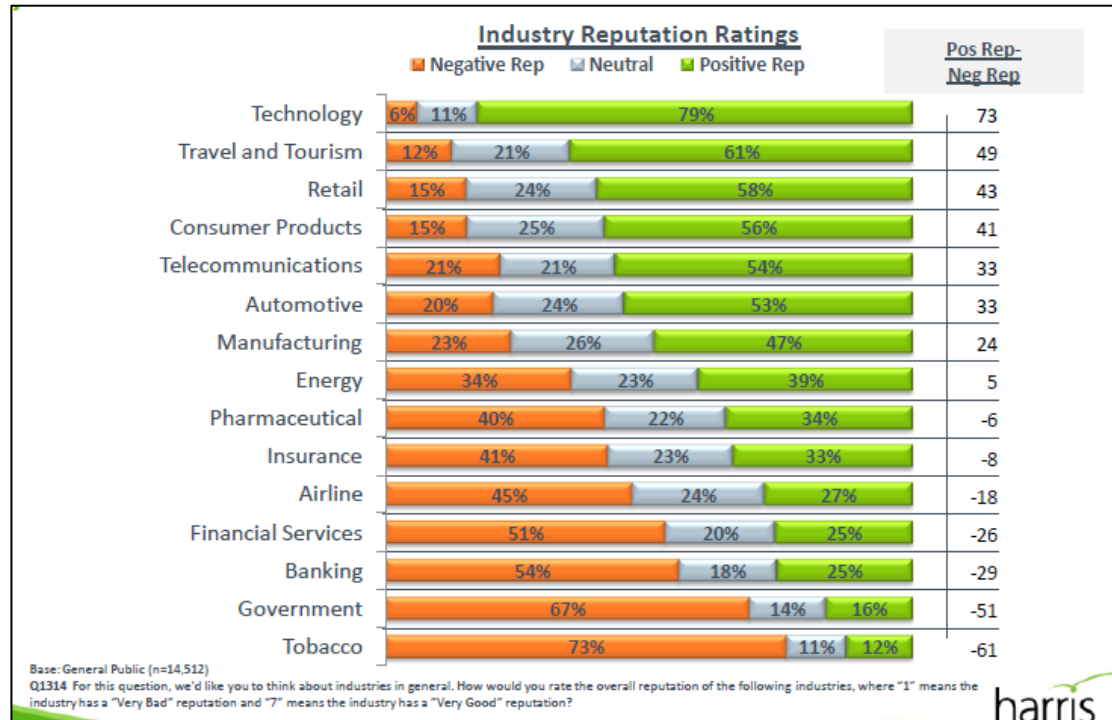
Table 3.1: The reputation quotient:

Emotional Appeal - good feeling about the company - admire and respect the company - trust the company Products and Services - stands behind products/services - offers high quality products/services - develops innovative products/services - offers products/services that are good value Vision and Leadership - has excellent leadership - has a clear vision for the future - recognizes/takes advantage of market opportunities	Workplace Environment - is well managed - looks like a good company to work for - looks like it has good employees Financial Performance - record of profitability - looks like a low risk investment - strong prospects for future growth - tends to outperform its competitors Social Responsibility - supports good causes - environmentally responsible - treats people well
--	---

Source: Fombrun, C.J, 2001. *Reputation: Realizing Value from the Corporate Image*, Cambridge: MA Harvard Business School Press

In 2015, Nielsen Company published a report and it is interesting to note that only Johnson&Johnson which is a healthcare company entered the list. Two years ago, Pfizer was in 52th in the list but it couldn't find a place in the recent list. On the other hand, in 2013 Nielsen Company published the same report for the industries and pharmaceutical industry ranked in 9th place (figure 3.1).

Figure 3.1: Corporate reputation quotient index



Source: The Harris Poll 2013 Rq Summary Report, (2013). <https://www.harrisinteractive.com/vault/2013%20RQ%20Summary%20Report%20FINAL.pdf> [accessed 07.03.2015]

In this study, perception of the outsiders (i.e., physicians) investigated instead of insiders (i.e., employees, managers, etc.). That means we investigate the perceptions of the physicians about a drug company -in this study about an antibiotic company- in order to determine its relationship with the prescription behaviors of the physicians. Providing an evidence for that relationship, Yılmaz (2008) indicated that company image influences physicians' prescription behaviors by providing value for money, innovative company, ethical company, strong brand, reliable company, wide product range perceptions regarding the drug company. Moreover, Waheed et al (2011) stated that doctors give more and more importance to health of people and their aim is to treat the diseases. That means the doctors want to trust drug efficiency and safety. Therefore, they prefer to prescribe reputable companies' drugs.

For PSR impacts on prescription behavior, this study's model is categorized as professional value and characteristics of the relationship. It is can be suggested that during the encounter with a physician, sales representative may create a strong interaction with the physician, which in turn makes the physician to develop trust and

positive feelings for the product and the drug company. In addition to non-interactive social influence, individuals are subject to interactive influence from sales representatives.

As mentioned in the literature review chapter, Singhapakdi and Vitell (1993, p. 528) define professional values as “values relating to one’s professional conduct that are commonly shared by the members of a particular profession”. In this study, professional value is consisted of two dimensions. Ethical behavior and trust to sales person are sub dimensions of professional value as perceived by physicians according to Wright and Lundstorm (2004). For measuring ethical behavior, Sergio Roman’s scale is used which was developed in 2003 and after used in various studies and in different countries. ($\alpha = 0.86$). He developed this scale by combining different scales (e.g. Hoffman et al. 1991; Lagace et al. 1991; Howe et al. 1994; Wray et al. 1994) and based on in-depth interviews. For measuring trust to sales person, Donnay and Cannon scale is used. In their study, Donay and Cannon (1997) investigated the antecedent of trust and developed a scale for measuring trust to sales person. This scale has been used in different countries especially to measure trust dimension in the pharmaceutical industry (Waheed, 2011)

Characteristics of the relationship are consisted of four dimensions according to Donay and Cannon (1997). These characteristics are likeability, similarity of salesperson, frequent social contact and frequent business contact. In this study Donay and Cannon scale is used to measure characteristics of the relationship. They developed this measurement scale by following standard psychometric scale development procedures (Anderson and Gerbing 1988; Bagozzi and Phillips 1982). They generated multi-item scales on the basis of previous measures, a review of the relevant literature, and interviews with marketing and purchasing personnel. The chi-square statistic for the confirmatory factor analysis model was statistically significant ($\chi^2 (221) = 549; p < .01$) (Anderson and Gerbing 1988; Bagozzi and Phillips 1982).

For advertisement and promotion, Ladeira’s scale is used (Ladeira et al 2011). This scale is only developed to measure advertisement impact on prescribing behavior. They also improved the previous studies scales (Bond and Lean, 1977; Diehl et al. 2008). To validate the new scale, structural equation modeling was used to test the proposed

model. They tested the scales for dimensionality, reliability, and validity using a confirmatory factor analysis. Also the scale has a good reliability value ($\alpha = 0.96$) (Ladeira et al. 2011).

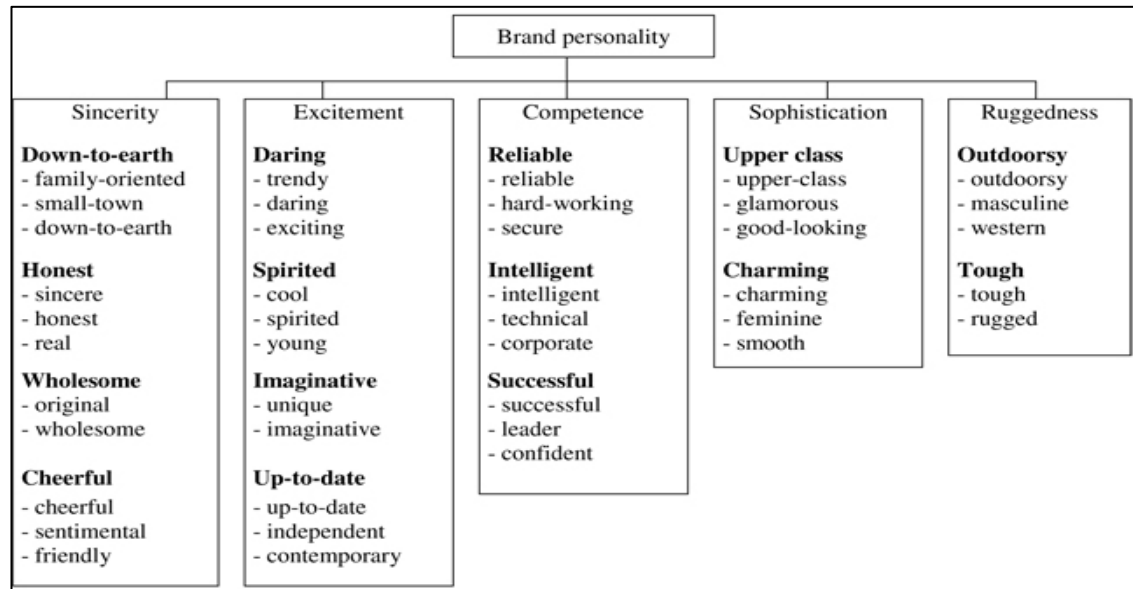
Consumer-based brand equity has four elements: brand loyalty, brand awareness, perceived quality, and brand association. Brand awareness which is a part of brand equity, refers to strength of a brand's presence in the consumer mind (Aaker, 1996). As mentioned in the literature review, in the decision making process for the recommendation of a medicine by doctors or pharmacists there intervene a series of factors which contribute to brand remembrance (Ion, 2013). However, brand awareness scale has not been used previously in the pharmaceutical industry according to literature reviews. Ion's study (2013) is a qualitative study and it was asked to physicians to rank the importance of factors in remembering the names of the brands as mentioned in the literature review. In this study, for measuring brand awareness, scale developed by Yoo and Donthu (2001) is used. They developed the brand equity scale and modified the brand awareness part. Then they applied this scale in various countries and compare the confirmatory factor analysis. Also this scale is applied in various countries (Jung et al. 2008).

For brand personality dimension, Aaker's (1997) Brand Personality scale is used. As mentioned in the literature review, Brand personality is "the set of human characteristics associated with a brand" (Aaker 1997, p.347). Regarding the extensive review of the literature, brand personality dimension has not been tested previously by the physician perception. Based on the human personality model (big five) Aaker (1997) found a new five dimensional model in the context of brands named Brand Personality Scale (BPS).

Aaker's (1997) study for creating BPS in the context of brand marketing is one of the first respectable studies. Previously many scholars and researchers used scales directly gotten from personality psychology but most of them validity problem in the marketing domain. As a result of the research, Aaker (1997) found five dimensions that represented a brand's personality the best, which were 'Sincerity', 'Excitement', 'Competence', 'Sophistication' and 'Ruggedness'. This scale has been used in different cultures and languages successfully. However, there have been some modifications for

different countries such as Russia and Japan. In these studies, they generally kept the main titles and made changes in sub-dimensions (Supphellen and Grønhaug's, 2003).

Figure 3.2: Brand personality dimensions



Source: Aaker, Jennifer L., 1997. Dimensions of brand personality. *Journal of marketing research*. 34, pp. 347-356.

As can be seen from the above Figure 2.5, Aaker's brand personality scale can be resembled to the Big 5 of human personality. Lückcrath (2010, p.23) examined the brand personality as follows:

Sincerity and agreeableness are both related to warmth and acceptance, whereas excitement and extraversion' summarizes the concepts of sociability, energy and activity. Moreover, the two personality dimensions competence and conscientiousness are linked with each other as they both comprise the idea of responsibility, dependability and security.

However, according to Aaker, except the first three brand personality dimensions such as sincerity, excitement and competence, ruggedness and sophistications brand personality dimensions are not relative to any of the Big 5 personality traits (Aaker, 1997; Briggs, 1992). Aaker (1997, p.351) examines this situation with the "innate versus adopted parts of human personality". She emphasized that "three brand personality dimensions sincerity, excitement and competence find an equivalent in the human personality since they are related to innate parts of the human psyche" Aaker (1997, p.351). Sophistication' and ruggedness, by contrast, are dimensions which people always desire to have but which they do not necessarily possess. As a result, this

study is the first study which use brand personality scale of Aaker on pharmaceutical drugs.

Perceived quality is one of the key dimensions of brand equity—it is the core construct in the Total Research approach to measuring brand equity (Aaker, 1996). As mentioned in previous chapter, Aaker (1996) defines perceived quality as the customer's perception of the overall quality or superiority of a product or service with respect to its intended purpose, relative to alternatives". For measuring perceived quality, due to very specific cases of pharmaceutical industry, we had to modify two different scales which were used previously and confirmatory factor analysis validated. These two scales were used in the pharmaceutical industry. First scale is developed by Stages (2008). This analysis is accomplished using PROC FREQ with a Chi-Square test and the end result provides the independent variables that can be used in a logistic regression analysis to determine product value drivers. This scale is consisted of 12 items and directly related with pharmaceutical product quality. For the second stage, drug quality scale of Waheed (2011), which was previously validated and tested, is used. He developed this scale with 3 items and reliability is enough meet the standards ($\alpha = 0.73$). According to this study's pilot study, developed perceived scale reliability is high ($\alpha = 0.89$)

Prescription behavior dimension is consisted of two dimensions in this study. These dimensions are brand satisfaction and brand loyalty. Satisfaction is defined as an effective response to purchase situation (Babin and Griffin, 1998; Bagozzi et al. 1999). Satisfaction is a positive affective reaction to an outcome of a prior experience (Ganesan 1994). The satisfaction derived and attitude formed as part of a prior experience (Ganesan, 1994) . In this study, brand satisfaction scale is used to measure satisfaction level which is developed by Şahin (2011). In their study, they developed a new brand satisfaction scale with 9 items with analyzing previous studies. (Grace and O'Cass 2005; Fullerton 2005; Garbarino and Johnson, 1999; Heitmann et al., 2007, Yi and Suna, 2004; Youl-Hong Ha,Perks Helen, 2005; Methlie B.Leif and Nysveen Herbjorn 1999). Also, the scale has a good reliability value ($\alpha = 0.95$) (Şahin et al. 2011). For the brand loyalty scale, again the same scholars' scale is used (Şahin et al. 2011) They were adapted from previous studies (Grace and O'Cass 2005;Algesheimer, Uptal and Herrmann, 2005; Fullerton, 2005; Heithman, Lehman, and Herrmann, 2007;

Hess and Story, 2005; Johnson, Herrmann and Huber, 2006; Sierra and McQuity, 2005; Zeithaml, Berry and Parasuman, 1996). The modified brand experience scale consists of 14 items. Reliability value is high ($\alpha = 0.97$) (Şahin et al. 2011).

Since the all developed scales are in English, the original scales are translated to Turkish by the researcher. After that, translations were checked by the supervisor of the study and some translations were modified. Following this period questionnaire form is prepared and this form has been sent to three academics at different universities. Also, the model of the study and the other details were presented. Generally concept of the study is found practicable and they emphasized that it is possible to reach comprehensive information and correct data about the prescription behavior. As a result of the feedback from the academics, only translations were modified and face validity is obtained. Consequently, in this study ten different scales have been used to measure impact of company linked factors and product linked factors on brand satisfaction and brand loyalty. Table 3.2 presents the variables used in the study with details.

Table 3.2: Variables in the model

Factor	Concept	Measurement Scale	Scholar	Year
Company	Corporate Reputation	The Reputation Quotient	Charles J.Fombrun, Naomi A.Gardberg and Joy M.Sever	1999
Company	Sales Rep Professional Value	Ethical Behavior Scale	Sergio Roman	2003
Company	Sales Rep Professional Value	Trust to sales person Scale	Patricia M.Doney and Joseph P.Cannon	1997
Company	Characteristics of the Salesperson Relationship	Likeability, Similarity, Social Interaction, Frequency of contact and expertise	Patricia M.Doney and Joseph P.Cannon	1997
Company	Advertising /Promotion	Tangible Rewards Scale	Wagner Junior Ladeira	2011
Product	Brand Awareness	Brand Awareness Scale	Boonghee Yoo Naveen Donthu	2001
Product	Brand Personality	Brand Personality Scale	Aaker	1997
Product	Perceived Quality	Drug Quality Scale	Marc States, Roger Green, Kareem Abdul Waheed	2008 2011
Behavior	Brand Satisfaction	Satisfaction Scale	Azize Şahin, Cemal Zehir	2011
Behavior	Brand Loyalty	Abbreviated Multidimensional	Azize Şahin, Cemal Zehir	2011

3.1.4 The Model and the Hypotheses

For the purpose of this study, the factors influencing prescription behavior will be investigated. The factors influencing on prescription behavior will be examined in terms of the constructs of company linked factors, product linked factors and prescriber linked factors. Under these constructs the relevant sub dimensions will be evaluated also. As mentioned in the literature review, there are various factors impacting prescription behavior (e.g., Iizuka and Jin, 2005; Bednarik, 2005, Goyal and Pareek, 2013; Shamimulhaq et al. 2014). In one of these studies, factors influence the prescribing behavior was investigated with considering of marketing practices (Girdharwal and Singh, 2007). First of all, factors which have potential to influence prescription behavior were identified and then it was required from the participants to assess these factors according to their importance on a scale from 1 to 10. As seen table 2.6, in the first three positions, there were quality of the product, price of the product and their availability in the market. According to study, the participants have found quality of the product as the most important factor, which is directly related with the patients' health. Thus, as stated by Ion (2013, p.34) "physicians assess the quality of a product on the basis of the image of the producing pharmaceutical company and respectively considering the results which a certain product has in the remission of the illness for which it is used".

Table 3.3: Factors of Influence on the behavior of prescription of the drugs by the physicians according to the associated importance

Position	Factor	Average
1.	Quality of the product	9,89
2.	Price of the product	8,50
3.	Availability of the product	8,46
4.	Image of the company	8,37
5.	Regular visits of the representatives of the producing companies	8,20
6.	Research in the molecular domain	7,90
7.	The specialty literature/journals	7,54
8.	The personality of the medical representatives	7,40
9.	Sponsorships for participating in conferences	7,00
10.	New combinations	6,90
11.	Medical educational programs	6,35
12.	Presentation way (package)	6,20
13.	Obtained incentives	5,34
14.	Personally received gifts	4,94
15.	Samples of the products	4,78
16.	Free campaigns for the identification of illnesses	4,70
17.	Existence of the websites of the medicine producers	4,66

Source: Girdharwal, N., & Singh, A., 2007. A Study of Physicians Behaviour toward Marketing of Pharmaceutical Products . *A Case Study of Indian Market* 5 (6), pp. 36

On the other hand, Girdharwal and Singh's (2007) study reveals that there are also other important factors influences the behavior of prescription drug. Therefore, it is expected that the physicians' perceptions of the sales representative, the company image/reputation, the patient problem, the gifts, rewards, promotions, etc. may create emotional and cognitive responses, which lead their prescription selection and behavior. Thus, the condition in which the physician, the patient, or the sales representative take place can be considered as the stimulus that causes a physician's state and evaluation (O) and results with behavioral response (R) which it is mentioned as prescription behavior in this study (Girdharwal and Singh, 2007).

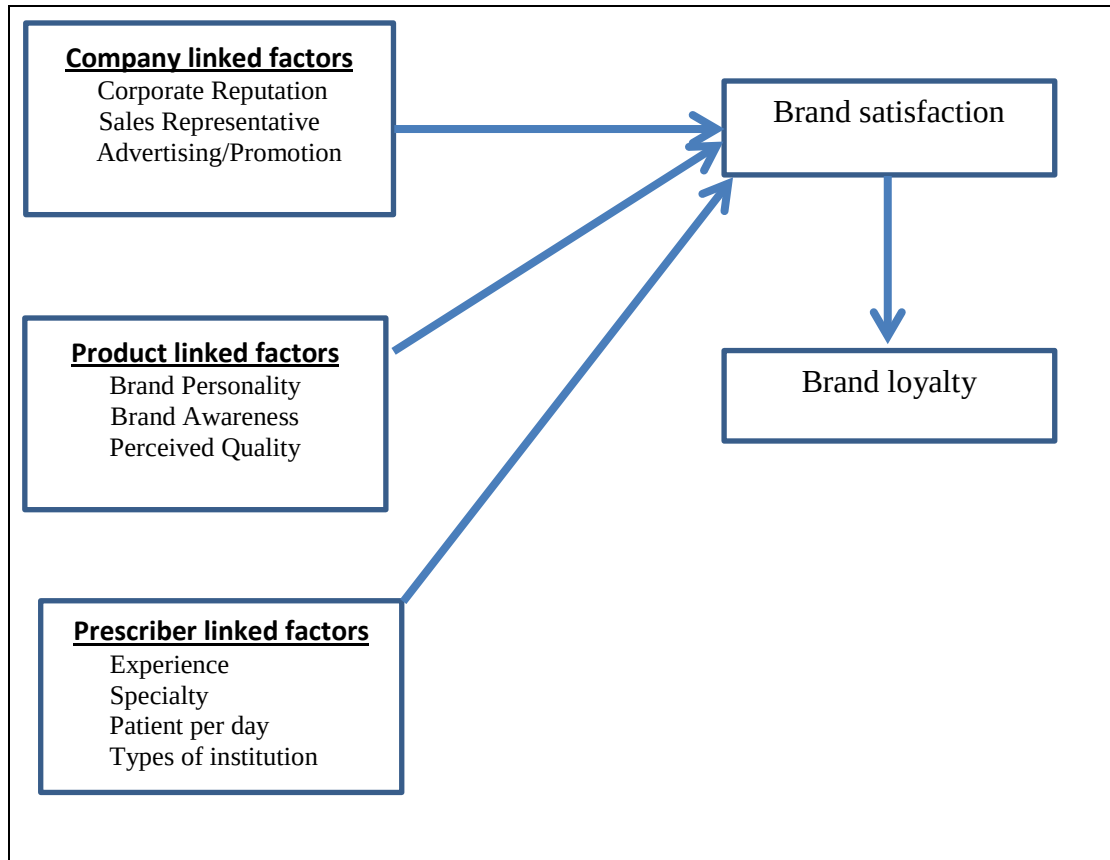
Another research study was conducted in Iran in order to examine the factors associated with prescription behaviors of the physicians (Dadfer et al., 2012). The study suggested a conceptual and analytical model for understanding prescription decision process consisting of four components: Diagnosis, Influences, (drug) Selection and Prescription. Based upon the model a questionnaire was developed, and tested in Iran. The data was collected from 400 randomly selected physicians and the results showed that six factors including: proven clinical effectiveness (evidence based), Key Opinion Leader recommendation and experiences, cost to the patient, drug delivery mode (oral, injection, etc.), patient preferences (specific company's drug) and medical representative (med-rep) promotional activities had statistically significant impacts on the prescribing behavior of the physicians (Dadfer et al. 2012). However, behind the prescribing a drug, brand loyalty is more than a simple prescribing. Physicians may prescribe a brand due to situational constraints, a lack viable alternative or out of convenience. Such loyalty is referred to as spurious loyalty and true brand loyalty exists when physicians have a high relative attitude toward the brand (Dick and Basu, 1994 as cited in Vural, 2013), which is then exhibited through prescribing behavior. This type of loyalty can be a great asset to the company such that physicians are willing to continue prescribing again, they may cost less to serve, and can bring new prescribers to the product. Moreover, in general, as referred by Chaudhuri and Holbrook (2001), behavioral loyalty has been defined in terms of repeat buying behavior. Thus, loyal consumers (physicians) only repurchase (prescribe) the same brand over time even there is an alternative brand in the market. This means the ability to make a physician repeatedly seek out and prescribe one brand over another, even when others offer

sponsorships or other benefits, is brand loyalty. As literature reviews indicates, brand loyalty is more than a simple prescribing notion contributed the shape of the model for this study where pharmaceutical companies want to have for their products in the long term.

Additionally, brand personality dimension is investigated in this study. According to deep literature review, this is the first study investigates the personality dimensions of pharmaceutical drugs from the physicians' perspective. Brand personality has been studied only one time from the perception of patients in the study of Leonard and Katsanis (2013). They have examined the application of brand personality frameworks to the pharmaceutical industry by suggesting that it may have the potential to facilitate product differentiation and to create meaningful consumer brand relationships. They identified consumer personality dimensions for prescription drugs and also described the development and validation of a two-dimensional scale measuring prescription drug brand personality as identified by consumers. The findings revealed that consumers are in fact able to attribute human personality traits to prescription drugs. A stable and generalizable two-dimensional (competence and innovativeness) scale was established: the Prescription Brand Personality Scale (PBPS) (Leonard and Katsanis, 2013).

Consequently, after the deep literature review and supported by in depth interview participants, the proposed model is created which includes factors introduced for the specific purpose of this research as can be seen on the below figure 3.3. There are three main constructs created such as company linked factors, product linked factors and prescriber linked factors.

Figure 3.3: Model of the study



According to study model, hypotheses are as follows:

Hypothesis for company linked factors and corporate reputation:

H₁: Managerial competence has an impact on physicians' brand satisfaction

H₂: Trustworthiness has an impact on physicians' brand satisfaction

H₃: Managerial competence has an impact on on physicians' brand loyalty

H₄: Trustworthiness has an impact on physicians' brand loyalty

Hypothesis for company linked factors and PSR:

H₅: Sales Representatives' ethical behavior has an impact on physicians' brand satisfaction

H₆: Trust to Sales Representatives has an impact on brand satisfaction

H₇: Sales Representatives' similarity has an impact on physicians' brand satisfaction

H₈: Frequent contact with Sales Representatives has an impact on physicians' brand satisfaction

H₉: Sales Representatives' ethical behavior has impact on physicians' brand loyalty

H₁₀: Trust to Sales Representatives has an impact on brand loyalty

H₁₁: Sales Representatives' similarity has an impact on physicians' brand loyalty

H₁₂: Frequent contact with Sales Representatives has an impact on physicians' brand loyalty

Hypothesis for company linked factors and promotion/advertisement:

H₁₃: Advertising/promotion activities and tangible rewards has impact on physicians' brand satisfaction

H₁₄: Advertising/promotion activities and tangible rewards has impact on physicians' brand loyalty

Hypothesis for product linked factors and brand personality:

H₁₅: Drugs' personality attribute of sincerity has an impact on physicians' brand satisfaction

H₁₆: Drugs' personality attribute of excitement has impact on brand satisfaction

H₁₇: Drugs' personality attribute of competence has impact on brand satisfaction

Hypothesis for product linked factors and brand awareness:

H₁₈: Brand awareness has impact on physicians' brand satisfaction

Hypothesis for product linked factors and perceived quality:

H₁₉: Efficacy level of perceived drug quality has impact on physicians' brand satisfaction

H₂₀: Side effect level of perceived drug has impact on brand satisfaction

Hypotheses for prescriber linked factors:

H₂₁: There is a significant difference among physicians' brand satisfaction and prescribers' specialty

H₂₂: There is a significant difference among physicians' brand loyalty and prescribers' specialty

H₂₃: There is a significant difference among physicians' brand satisfaction and prescribers' patient number per day

H₂₄: There is a significant difference among physicians' brand loyalty and prescribers' patient number per day

H₂₅: There is a significant difference among physicians' brand satisfaction and prescribers' experience

H₂₆: There is a significant difference among physicians' brand loyalty and prescribers' experience

H₂₇: There is a significant difference among physicians' brand satisfaction and prescribers' institution

H₂₈: There is a significant difference among physicians' brand loyalty and prescribers' institution

3.2 QUALITATIVE RESEARCH

Qualitative research seeks answers to questions by examining various social settings and the individuals who inhabit these settings. (Denzin and Lincoln, 2005). Qualitative research has an inductive approach to the relation between theory and research. The result of qualitative research cannot be generalized and is not conclusive. (Malhotra 2004). There are different definitions of qualitative research as there are books on the subject. Below is the definition of Parkinson and Drislane (2011, p.3)

“Qualitative research is research using methods such as participant observation or case studies which result in a narrative, descriptive account of a setting or practice. Sociologists using these methods typically reject positivism and adopt a form of interpretive sociology”.

In this study, qualitative research is done with the physicians and industry representatives who have also medical backgrounds, to understand their approaches and perceptions about how they see the industry and parameters in this study.

3.2.1 In-depth Interviews

In-depth interview is a method of qualitative research in which the researcher asks open-ended questions orally and records the respondent's answers. In this study, the concept of the study, model of the study and questions in the measurement scales are presented during the in depth interviews and these interviews have been done with 6 people. Interviews are recorded.

3.2.1.1 In-depth interview

As mentioned in the literature review and also supported by various studies, there are various influencing factors in making prescribing decision. It is interesting to note that, decision maker will not use the product, so he/she will not experience what it makes, what it tastes or what kind of emotional appeal will provide for the user. It is not the typical situation from the marketing point of view. Pharmaceutical company can produce the most effective product for the related disease but what would be happen if this product is not promoted effectively or the company would not use the marketing tools with the right strategies ? How will the physician get the information for recent clinical trials for the disease?

Additionally there is only one way to make the patients healthier and it is using the right pharmaceutical product for the right patient. As it is presented in the literature, there are

different dimensions for physicians to reach the knowledge about the medicine drugs but mostly these tools are presented by the pharmaceutical companies. With these interviews, it is aimed to have advices of physicians about the concept of the study and suggestions for the questionnaire form.

The first interview was done with medical doctor K.K, on April 1st 2014, who is the family practitioner in Ümraniye/İstanbul regional healthcare center. This interview took almost 45 minutes. He has been working as a family practitioner for more than 10 years and last 2 years he was at the same region. He is visited by minimum 60 patients per day and mostly they are basic diseases such as infection, flu cases and mostly can be diagnosed by family practitioners. He is also prescriber of antibiotic drugs and as he stated that he prescribes minimum 15 antibiotics per day. K.K is also visited by 15 pharmaceutical sales representatives per day. First we discussed pharmaceutical companies' marketing activities and discussed their approaches to the physicians. He stated that he is not happy sometimes with PSR's attributes especially when they ask his treatment protocol. He does not prefer to discuss this kind of issues with PSR especially for the products, which he has been prescribing for the long time. His expectation from PSR is just regular visit and kind behavior to himself. He also stated that he appreciates continuous medical education CME which have high scientific and interactive concept. K.K emphasized that this kind of organizations contributes his theoretical knowledge and impact his prescription habits. After this discussion, model of the study and question in measurement scales have been presented. In the model, especially corporate reputation scale has been found interesting. Respondent stated that he has never thought about the reputation of company. It has been observed that, especially emotional appeals have been found an important factor by the respondent. On the other hand, scales in the questionnaire form have been found reasonable. Only financial dimensions questions have been found irrelevant in the questionnaire form. As a result, respondent's answers indicated that model of the study and factors in this study are in line with his influencer factors in his mind.

The second interview is done with medical doctor O.B, on April 9th 2014. The interview took thirty minutes. He is a medical doctor and used to be family practitioners. Currently, he is owner of Consultant Company and making projects for the pharmaceutical companies. However, his new studies and relations with industry

revealed for him how branding of products is crucial to impact the prescription behavior. He is now creating branding concepts for the pharmaceutical companies and he confessed that he was not aware of how branding notion, visuals, concepts or claims of brands impacted his prescription behavior when he was working in the regional healthcare center. O.B believes that, pharmaceutical companies do not have enough capability to reach physicians' emotional appeal. He thinks that PSR is the most influential factor for prescription behavior. He also found brand personality dimension in this study very interesting and he stated that the product mentioned in this study have high competence level according to brand personality scale. Additionally he found the questions are well structured and related to understand his past experience. Especially asking the relational dimensions of PSR with physicians have been found fundamental. This factor has been found very important by the respondent to understand the attitudinal of physicians in general.

The third in depth interview has been done with medical doctor B.A, on April 8th 2014. The interview took almost one hour. He is an intensive care unit ICU specialist but currently working at an international pharmaceutical company as a medical director responsible for Middle East Asia. He has been working in the pharmaceutical industry for 12 years. First of all, B.A found our study's reference product as a right choice. He stated that brand "x" is the most reputable brand and it is the most prescribed drug in Turkey. Additionally, he stated that this brand should be the most promoted brand in Turkey. This comment supports this decision for the selected brand. For the next stage, questions in the scales presented to the respondent. Like in the previous interviews, corporate reputation has been found an important factor but sub dimensions of corporate reputation especially questions about the financial performance and workplace environment have been found irrelevant. Additionally, other dimensions in the concept, especially about the perceived quality have been found the most important dimension in the model. B.A also stated that when he was working in the hospital, he was following the clinical studies closely and literatures provided by PSRs regularly for the related product. Brand personality dimension have been found very interesting by this respondent and like in the previous interviews, competence dimension have been found the most relevant dimension.

The fourth interview is done with internal specialist O.E, on 16th April 2014. He has been working in the state hospital for more than 15 years. He is visited by minimum 70 patients per day and as he shared, he prescribes averagely 3 products for each patient. Additionally, he is visited by 20 PSR per day. Due to his specialty, he prescribes various products from different therapeutic areas such as hypertension drugs, cardiovascular drugs and respiratory diseases products. Firstly, expectations from the pharmaceutical companies have been asked directly to the respondent. He emphasized that without a quality or efficacy on the treatment, nothing will impact positively his prescription decision. But then again he added that, all the products are licensed, have registrations and reimbursed by the government, so it is the scientific evidence that all of them have efficacy on the related disease. He accepted that promotional activities and congress sponsorships impact his prescription choice. He stated that there are lots of choices especially when we consider generic products and there should some differentiation points among these choices. He added:

“The most important factor is PSR relation with us in my opinion especially if it is a generic product. Generally generic product companies are more flexible as compared to originator product companies. They can provide faster than original product owner companies what we want from them. As I understand, innovator companies have more bureaucratic processes”.

Model of the study and the questionnaire form besides are presented to respondent. Concept and the factors ranked in the model have been found highly relevant with prescribing behavior.

The fifth interview is done with industry representative H.A, on May 15th 2014 who has a medical background but currently holds a position at pharmaceutical company as a product manager, namely marketer. It took 35 minutes. This interview was critical in terms of having the view of person who experienced the both side objectively. H.A specified the importance of relation with PSR, but again underlined the importance of promotional activities of pharmaceutical companies. Branding concept was so far from his mind when he was at the prescriber side but with his new position as a marketer side, whose main role to focus on influencer factors on prescriber behavior, he realized the deep impact of branding activities in the industry. Color of the brands, messages fonts in the leaflets, visuals in the promotional materials, patient visuals in the leaflets, organizations by the pharmaceutical companies, all of them really impacted his decision but he was not aware of what had been created in his mind obviously and he couldn't

measure it. Now, H.A is doing the same thing to the physicians, he is trying to convince physicians to prescribe the product that he is responsible for and he stated that he is more aggressive than he expected before starting to pharmaceutical industry. He stated that maybe it is the marketing concept impact which is always focused on to sell more and aimed to increase the market share. This respondent also found the model of the study and the questions in the scales highly relevant with prescription behavior.

The results of the in depth interviews supports that the model of the study has been established parallel with the prescription behavior model developed in their minds. All the factors in the model were presented and except financial dimension in the corporate reputation have been found irrelevant. All the participants heard the brand personality concept but they have never thought that brand personality can be attributed to pharmaceutical drugs. They found it as an irrelevant factor at first, but when they recognized the questions and the dimensions in the scales, they indicated pharmaceutical drugs could have personalities if they are marketed like the other products in the market. As a summary, results confirm the model and model can create new research questions which will be a reference for the future studies.

3.3 QUANTITATIVE RESEARCH

Quantitative research is defined “as the systematic empirical investigation of observable phenomena via statistical or computational techniques in social natural and social science” (Given, 2008, p.8). Quantitative research is a process of getting numerical data for the research subject and generalizing it to clarify a particular phenomenon (Babbie, 2010). It is a deductive method and it is aimed to find out the relationships between theory and research. This research type also involves a greater number of subjects and it enhances the generalization the results (Brians et al. 2010). So, for the research questions in the conceptual framework, quantitative research has been conducted to test the hypothesis and answers.

3.3.1 Pilot Study

The main aim of the pilot study is to find the problems in the study before starting the main study. It is a smaller version of the main study and researcher makes a decision how and whether to launch full scale one. In this study, none of the scales have been developed in Turkey, but it has been observed that, some of the scales are used in

Turkey. For instance, corporate reputation and brand personality scales commonly are used in this country but extensive literature research revealed that these scales have not been applied to pharmaceutical drugs. Additionally, according to literature researches, brand awareness, which is commonly used in marketing researches, has not been applied to pharmaceutical drugs. Consequently, pilot study provided to us sees the validity and reliability of these scales.

3.3.2 Data Collection Method and Design

As mentioned previously, pharmaceutical industry has restrictive regulations as compared to other industries. For instance, pharmaceutical industry can't make promotion activities to the public or reach directly to the patients. So, it is not able to use online platforms which are open to public. For this reason, product owner pharmaceutical company did not let to use online research tools and all the questionnaire forms have been collected from the different locations of Turkey during the researcher's field force visits. After giving brief information about the study, questionnaire forms are given to the respondents and these forms were posted back to the researcher later.

In this study, to measure the scales and to test the hypothesis, paper and pencil method which is also known as self-administered approach method is used. It is a traditional survey method especially for the respondents who are not computer literature or do not have access to the internet. Moreover, it has been observed that, respondents' concentration was high when filling the forms.

In the first part of the questionnaire form, prescription and frequency of prescription are asked. If physician does not prescribe the mentioned brand in the questionnaire form, respondent did not continue to questionnaire. Second part started with the company linked factors and continued with questions of brand linked factors. In the final part of the questionnaire, the demographic information about the respondents is asked.

3.3.3 Target Population and Sampling Method

It is obvious that, when conducting a research, it is not possible to reach entire population for the research subject. So, researcher must choice the right sample which can be generalizable the finding from the sample to the population. Sample has been

defined by Malhotra (2000) as a subgroup of the elements of the population selected for participation in the study.

In this study, target group is physicians. There are almost 35.000 family practitioners and 58.000 specialists are currently working at different healthcare centers according to Ministry of Health Statistical Data (Sağlık Bakanlığı, 2015).

For calculation of the sample size, firstly margin of error is calculated. According to calculations, where z is 1,96 with 95% confidence level, p is set to 0,50 and n is 331 which is total sample size. According to Malhotra (2010, p. 412) “the product of $\pi (1 - \pi)$ is the greatest, which happens when π is set at 0.5”. As a result, margin of error is found 0,53.

$$m = z^* \sqrt{\frac{p^*(1 - p^*)}{n}} \quad \boxed{3.1}$$

After the calculation of error of margin, sample size is calculated where z value for the determined confidence level, p is level of precision, e is margin of error and finally N is total population which is almost 100k according to Ministry of health (Sağlık Bakanlığı, 2015)

$$Sample\ Size = \frac{\frac{z^2 \times p(1-p)}{e^2}}{1 + (\frac{z^2 \times p(1-p)}{e^2 N})} \quad \boxed{3.2}$$

According to calculated margin of error and other calculations, needed sample size is found 331 and which it is 331 in this study.

According to in depth interviews, antibiotics mostly are prescribed by family practitioners, ear, nose and throat specialists (ENT), pediatricians and general surgeons. The product in this study is an antibiotic and it can be prescribed by all the physicians without any restriction in social security regulation. It is used in treatment of basic diseases such as lower respiratory tract infections, sinusitis and in other related infections. So, these are the basic diseases and mostly diagnosed by first step treatment family practitioners.

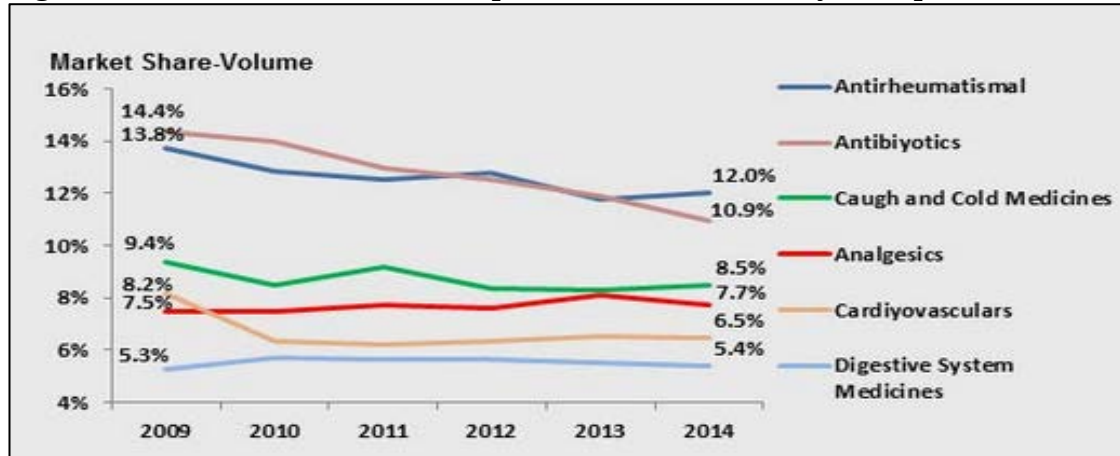
Turkish pharmaceutical industry closed 2014 almost around 6.6 billion dollars and 0.8 billion boxes with the decreased growth rated as compared to previous year (figure 3.2). Additionally antibiotic group products have a decreasing trend due to some restrictions for some specific products in last five years (figure 3.3).

Figure 3.4: Total pharmaceutical market



Source: İEİS, Yıllık Rapor, 2014, <http://www.ieis.org.tr/ieis/en/indicators/33/turkiye-ilac-pazari> [accessed 01.03.2015].

Figure 3.5: Pharmaceutical consumption in volume terms by therapeutical class



Source: İEİS, Yıllık Rapor, 2014, <http://www.ieis.org.tr/ieis/en/indicators/33/turkiye-ilac-pazari> [accessed 01.03.2015].

In this study, questionnaire form is completed by the related physicians such as family practitioners, ENT specialist, general surgeons and pediatricians according to prescription figures and potential. The survey is done between year 2014-2015 and it took 5 months to collect data from the respondents.

3.3.4 Data Analysis Methods

For analyzing data, Statistical Package for Social Sciences version 19.0 is used and common statistical analysis such as multiple regressions, validity, reliability and factor analysis are done. To measure structural equation model (SEM), path analysis and confirmatory factor analysis (CFA), Analysis of Moment Structures (AMOS) version 6 is used.

3.3.4.1 Preliminary data analysis

For preliminary data analysis, SPSS version 19 is used. SPSS is a commonly used software program in social sciences for making statistical analysis. In this stage, after completion of coding process, exploratory factor analysis, mean, standard deviation, multicollinearity analysis, independent sample t-test and for normality calculations have been done and SPSS version 19 is used.

3.3.4.2 Exploratory factor analysis

Exploratory factor analysis (EFA) is commonly used method in social sciences for a long time and with using this method it is aimed to reach best representative data. (Williams et al. 2012).

EFA is a multivariate statistical procedure that has many uses (Hair et al. 1995). Firstly, factor analysis reduce the number of variables and then categorize these variables into meaningful and smaller groups. Secondly, “it creates underlying dimensions between measured variables and latent constructs, thereby allowing the formation and refinement of theory” (Williams et al. 2012, p3). Table 3.4 summarized the objectives of EFA.

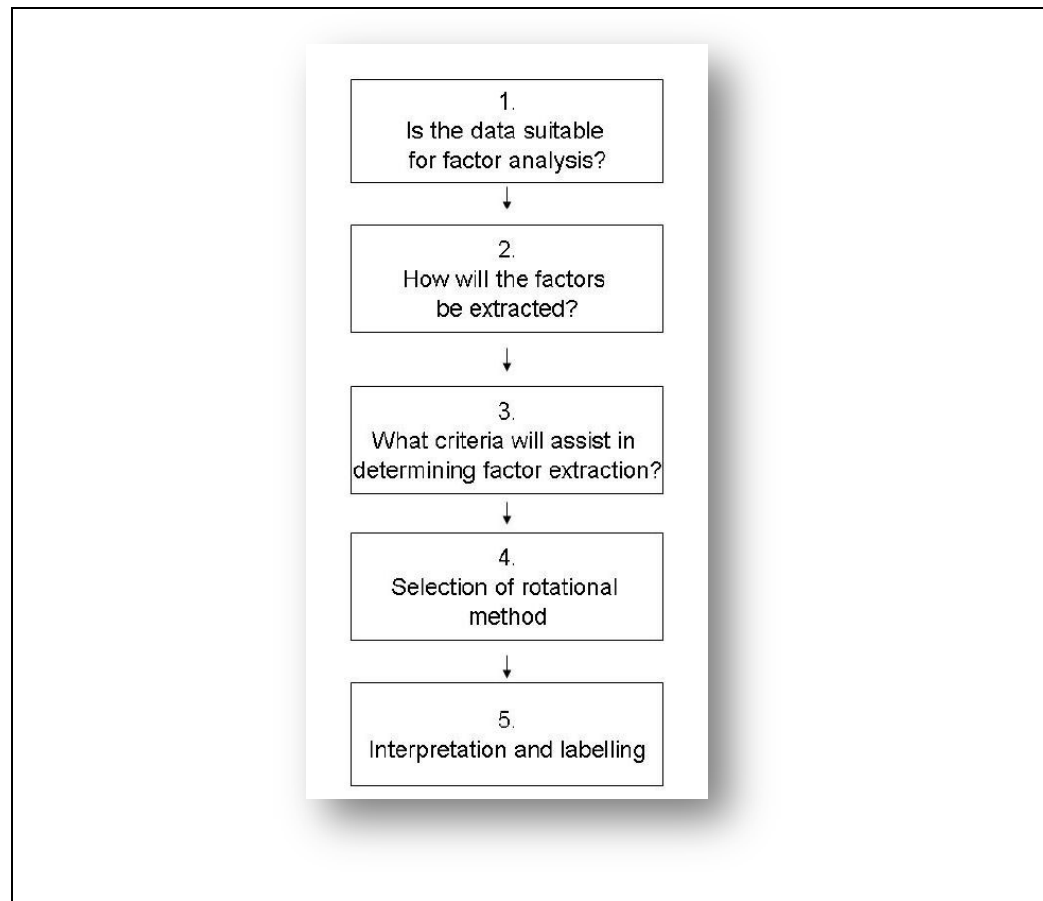
Table 3.4: Objectives of exploratory factor analysis

• Reduce the number of variables • Examine the structure or relationship between variables • Detection and assessment of unidimensionality of a theoretical construct • Evaluates the construct validity of a scale, test, or instrument • Development of parsimonious (simple) analysis and interpretation • Addresses multicollinearity (two or more variables that are correlated) • Used to develop theoretical constructs • Used to prove/disprove proposed theories

Source: Williams, Brett, Ted Brown, and Andrys Onsman., 2012. *Exploratory factor analysis: A five-step guide for novices*. Australasian Journal of Paramedicine. 8 (3), pp. 1.

According to Williams et al. (2010) EFA is consisted of five steps and each steps have different functions in factor analysis (Figure 3.5)

Figure 3.6: The 5-step exploratory factor analysis protocol



Source: Williams, Brett, Ted Brown, and Andrys Onsman., 2012. *Exploratory factor analysis: A five-step guide for novices*. Australasian Journal of Paramedicine. 8 (3), pp. 1.

In step one, data suitable is investigated. For instance, is sample size suitable for factor analysis? Hair et al (1995) suggest that sample size should be 100 or greater that to make factor analysis. In various studies, sample size classified as: 100 as poor, 200 as fair, 300 as good, 500 as very good, and 1000 or more as excellent (Comrey, 1973). There are various suggestions in the literature for proper sample sizes. For instance, a sample with 150 items is enough according to Pallant (2011). Guadagnoli and Velicer stated that solutions with correlations coefficients $>.80$ require smaller sample sizes (Guadagnoli and Velicer, 1988). It can be concluded that, the sample size to do factor analysis of a group, varies greatly.

The other important dimension for suitability data is the strength of intercorrelations among the items Pallant (2011). Before the extraction of factors, different tests can be used to assess suitability of the respondent data for factor analysis. These tests are Kaiser-Meyer-Olkin (KMO), Measure of Sampling Adequacy and Barlett's Test of Sphericity (Williams et al. 2010). The Barlett's test of Sphericity should be significant ($p < 0.05$) for factor analysis to be suitable (Tabachnick, 2010). The KMO index ranges from 0 to 1, with 0, 50 considered suitable to factor analysis. KMO measure of sampling adequacy should be greater than 0.6. The equation for KMO is presented below:

$$\text{KMO overall} = \frac{\sum r_{ij}^2}{\sum r_{ij}^2 + \sum pr_{ij}^2} \quad \boxed{3.3}$$

r_{ij}^2 indicate the correlations between all variables (without the diagonal) and pr_{ij} indicate the partial correlations (without the diagonal).

The second step is how the factors will be extracted. In literature, there are various ways to extract factors: Principal component analysis, principal axis factoring (PAF), image factoring, maximum likelihood, alpha factoring and canonical (Williams et al. 2010). The most used extraction methods are PCA and PAF in the literature.

The third stage is which criteria will assist in determining factor extraction. Hair et al (1995) pointed out that the majority of factor analysts typically use multiple criteria. There are different extractions rules and approached exist: Kaiser's criteria (eigenvalue > 1 rule), the Screen test, the cumulative percent of variance extracted and parallel analysis (Horn, 1965)

The final stages are selection of rotational method and interpretation. In literature, there are two accepted common rotation techniques: Orthogonal rotation and oblique rotation. Orthogonal varimax is the most commonly used technique in factor analysis. The aim in this stage is each variable should load on only one component and one component and each component is represented by a number of strongly loading variables (Pallant, 2011).

3.3.4.3 Confirmatory factor analysis

Confirmatory factor analysis (CFA) is used to study the relationships between a set of observed variables and a set of continuous latent variables. CFA allows the researcher to test the hypothesis that a relationship between the observed variables and their underlying latent construct(s) exists (Suhr, 2006). It has been defined by Pallant (2011) as a set of techniques to test specific hypothesis or theories regarding the structure underlying a set of variables. EFA focus on the correlation between variables but the main objective for CFA is to investigate the correlations among the variables and whether they are dependable with a hypothesized factor or not (Tabachnick and Fidell, 2007).

According to Suhr (2006), a suggested approach to CFA proceeds through the following process and steps as summarized in table 3.4.

Table 3.5: CFA steps for analysis

Steps	Action
1	review the relevant theory and research literature to support model specification
2	specify a model (e.g., diagram, equations)
3	determine model identification (e.g., if unique values can be found for parameter estimation; the number of degrees of freedom, df, for model testing is positive)
4	collect data
5	conduct preliminary descriptive statistical analysis (e.g., scaling, missing data, collinearity issues, outlier detection)
6	estimate parameters in the model
7	assess model fit
8	<u>present and interpret the results.</u>

Source: Suhr, Diana D., 2006. Exploratory or confirmatory factor analysis? Cary: SAS Institute

In this study, CFA is used to test the dimensionality and validity of the measurements. This approach was applied to examine the dimensionality of each variable or factor and also to test the model fit of the various dimensions or factor.

In literature, unidimensional measures have been defined as set of measured indicators with only one underlying latent construct. It means that indicator variables are loaded only one construct (Hair et al. 2006). In multidimensional measurement, there are various constructs with several distinct, but more than one distinct indicator (Gerbing and Anderson, 1988) can measure each dimension.

3.3.4.4 Structural equation modeling (SEM)

Structural equation modeling (SEM) “is a family of statistical model that seek to explain the relationships among multiple variables” (Hair et al.2006, p.711). This model “analyzes the structure of interrelationships expressed in a series of equations, similar to a series of multiple regression equations” (Hair et al.2006, p.712).

In some SEM methods, it includes growth modeling, path analysis and confirmatory (Kline, 2011). The expression structural equation model mostly refers to a combination of two different things: “a measurement model that defines latent variables using one or more observed variables, and a structural regression model that links latent variables together” (Kline, 2011, p.111).

SEM analysis has various advantages for the researchers. This analysis empowers the researcher to examine “a series of interrelated dependence relationships among the measured variables and latent constructs (variates) as well as between several latent constructs” (Hair et al. 2006, p179). With SEM analysis, it is aim to analyze the hypothesized model if it is consistent with the collected data and the possibility of reflection the theory (Kline, 2005).

SEM analysis explains the details about the results and answers the question of why results occur while “reducing misleading results by submitting all variables in the model to measurement error or uncontrolled variation of the measured variables” (de Carvalho et al. 2014, p.6)

SEM is relatively a new tool but according to Hair et al (2006), its roots go back to the first half of the twentieth century. The model development originated with the researcher’s efforts establishes causal relationships between variables. Interest to SEM remained slow during the 1970s and 1980s in large due to its perceived complexity. Today, SEM is the leading multivariate technique followed by MANOVA and cluster analysis

There are differences between SEM and conventionally used methods. The main difference is SEM’s distinctive characteristics. For example, SAM’s basic statistic is the covariance. According to Hu and Bentler (1999), covariance statistics is more effective and provides more information than a correlation. As it known, in conventional regression analysis, aim is to minimize differences between observed and expected

individual cases. However in SEM, “it is aim to minimize differences between observed and expected covariance matrices” (Kline, 1998, p10).

According to Byrne (2010) there are three approaches for testing structural equation models. The first approach is strictly confirmatory approach (SCA). This model is tested using with “SEM goodness-of-fit tests to determine if the pattern of variances and covariance in the data is consistent with a structural (path) model specified by the researcher” (Kline, 1998, p.10). Researcher accepts or rejects the model according the results of data.

The second approach is the alternative models approach (AMA). In this approach, the researcher aims to test more than two models to find out which model provides the best fit according to statistical outcome. There are different fit indices likes as goodness of fit measures. In general, with the different considerations of the researchers, three or four fit indices are presented.

The last approach is model generating approach (MGA). In this model, researcher develops a model depending on theory and researcher measures GOF indices to find out level of fitness. This is the most commonly reported and found approach in the literature. If the analyze value is low, researcher should modify the model of the study until meaningful and statistically well-fitting model has been reached. This study has the third approach which collects sample data, uses GOF indices to determine fitness of the model (Hair et al. 2006)

Additionally sample size is important for SEM analysis. This model requires larger sample sizes and it is unreliable with small sample size (Hair et al. 2006). “SEM is a large sample technique and usually number of samples is more than 200” (Kline, 2005, p.111). Moreover “the sample size required is somewhat dependent on model complexity, the estimation method used, and the distributional characteristics of observed variables” (Kline, 2005, p.14)

3.3.4.4.1 Evaluation of model fit

In SEM testing, the most fundamental event is validity of model measurement. According to Hair et al. (2006, p745), “measurement model validity depends on goodness of fit for the measurement model and specific evidence of construct validity”. There are various calculations in SEM testing. There are also different views in the literature about which fit indices should be used to get right outcome. For instance, Hair et al. (2006) state that to provide adequate evidence for the model fit, three or four fit indices should be used such as chi-square, degrees of freedom, CFI and RMSEA. McDonald and Ho (2002), CFI, GFI, NFI and the NNFI are the most commonly used fit indices.

According to McDonald and Ho (2002), fit indices are indicator of how well priori model fits the sample data. Namely, which model proposed by researcher has the most superior fit indices (McDonal and Ho, 2002).

Hair et al. (2006) stated that “the most fundamental fit is χ^2 statistic” (p.746). The Chi-Square is the traditional model for evaluating overall model. As stated by Hu and Bentler (1999), this statistic asses the magnitude of discrepancy between the sample and fitted covariances matrices. Well model fit provide an insignificant result at a 0.05 threshold (Barett, 2007). This test model is still used commonly and assumed as fundamental model, there are some limitations in practice. The first issue is sample size. For instance, due to it is a mathematical function of sample size (N), it is sensitive to sample size. It means that Chi-Square test almost always reject the model if sample size is large (Bentler and Bonnet, 1980; Jöreskog and Sörbom, 1993). If sample size small, this time the test lacks power and this could not discriminate between good fitting models and poor fitting models (Kenny and McCoach, 2003). The second issue is that since SEM assumes multivariate normality of the data, deviations from normality may cause the rejection of the model although it is appropriately identified (McIntosh, 2006).

Due to limitations in the Chi-Square, researchers should focus on alternative indices to assess model fit. For instance, Wheaton et al. (1977) presented relative/normed chi-square. In this model, χ^2 divided by degrees of freedom (χ^2/df). On top of all this, there is no harmony for the acceptable ratio for this statistic and recommendations range from as high as 5.0 to as low as 2.0 (Tabachnick and Fidell, 2007).

The root mean square error of approximation (RMSEA) is the second fit statistic which was developed by Steiger and Lind (1980, cited in Steiger, 1990). This model tries to correct for the predisposition of the χ^2 GOF test statistic to reject models with a large sample or a large number of observed variables (Hair et al. 2006). In general, these indices give details about how well model, with unknown but most probably chosen parameter, estimates population covariance matrix (Byrne, 1998). It has been emphasized that RMSEA became the most informative fit indices in last years (Diamantopoulos and Siguaw, 2000). It is very sensitive to the number of estimated parameters in the model (Hooper, Coughlan, and Mullen, 2008).

It is interesting to note that, cut off points for RMSEA have been reduced in last 15 years. There are different comments like as Chi-Square test. For instance, RMSEA value as 0.10 is acceptable but it should be below this value (Hair et al. 2006).

Until 1990s, range of 0.5 and 0.10 RMSEA had been accepted as fair fit while above 0.10 had been accepted as poor fit. After this period and for today as MacCallum, Brown, and Sugawara (1996) stated, RMSEA above 0.10 defined as poor fit, while below 0.08 is good fit and between 0.08 and 0.10 is mediocre fit.

“It is generally reported in conjunction with the RMSEA and in a well-fitting model the lower limit is close to 0 while the upper limit should be less than 0.08” (Hooper, Coughlan, and Mullen, 2008,p.53).

Goodness-of-Fit Index (GFI) and the adjusted goodness-of-fit index are the third absolute fit indices. GIF index aims to produce an index that is less sensitive to sample size (Hair et al. 2006). This model is developed by Jöreskog and Sorbom as an alternative to the Chi-Square test (Hooper, Coughlan, and Mullen, 2008). It calculates the proportion of variance that is accounted for by the estimated population covariance.

The possible range of GFI values is between 0 and 1 and if the value is higher than 0.90, it is accepted as good fit (Hair et al. 2006). It has been stated by Sharma et al. (2005), if the sample size is large, this situation increase the value of GFI and large number of degrees freedom cause downwards for GFI. An adjusted goodness-of-fit index (AGFI) aims to calculate differing degrees of model complexity (Hair et al. 2006). It makes this calculation by adjusting GFI by ratio of the degrees of freedom which used in a model to the total degrees of freedom available. For AGFI, value range between 0 and 1 is

generally accepted and show good fit (Hooper, Coughlan, and Mullen, 2008). The last indices are root mean square residual (RMR) and standardized root mean square residuals (SRMR) which are “the square root of the difference between the residuals of the sample covariance matrix and the hypothesized covariance model” (Hooper, Coughlan, and Mullen, 2008, p.54).

Incremental fit indices are the second group and known as comparative or relative fit indices (Miles and Shevlin, 2007). Incremental fit indices are different from absolute fit indices and they measure how well a proposed model fits relative to alternative model (Hair et al. 2006). Baseline model presumed as a null model and it is assumed that all observed variables are uncorrelated.

The normal fit index (NFI) is accepted as one of the innovative incremental fit indices and it is the ratio between χ^2 values of researcher’s model and the null model (Hair et al. 2006). Its ranges between 0 and 1 and if the value is higher than 0.90, it is accepted as good fit. However, NFI can be affected by the sample size due to its sensitivity to sample size (Hooper, Coughlan, and Mullen, 2008). This issue is fixed by the Non-Normed-Fit-Index also known as Tucker-Lewis index (TLI). The other fit index of incremental section is Comparative Fit Index (CFI). It is an upgraded version of the NFI and it performs well when sample size is small (Tabachnick and Fidell, 2007). This index is firstly introduced by Bentler (1990). As like in NFI, values range between 0.0 and 1.0 and closer to 1.0 shows good fit (Hooper, Coughlan, and Mullen, 2008).

The third fit indices group is parsimony fit indices which are specifically designed to deliver information related with the best model compared to other competing models based on its fit relative to its complexity (Hair et al. 2006). There are two fit indices in this group which are Parsimony Goodness-of-Fit Index (PGFI) and Parsimony Normed Fit Index. These indices were developed by Mulaik et al. (1990) to solve the degrees of freedom problem in GFI and NFI. For these models, developer did not suggest threshold levels and he stated that it is probable to obtain parsimony fit indices within the .50 area and while other goodness of fit indices is appropriate over 0.90 (Mulaik et al. 1989) indices for “good” fit. So parsimony fit indices are useful to evaluate competing models and should not be used alone, since it is difficult to interpret (Hooper, Coughlan, and Mullen, 2008).

In social sciences, SEM is commonly used and these indices show how well the proposed model is established. Most commonly used indices are as mentioned above, RMSEA, CFI, GFI, NFI, and TLI (McDonald and Ho, 2002). In this study, these indices are used. Table 3.6 summarizes the recommended fit indices for SEM analyses.

Table 3.6: Recommended fit indices

Fit Index	Recommended Values
χ^2 / df	≤ 3.00
Goodness-of-fit index (GFI)	≥ 0.90
Adjusted goodness-of-fit index (AGFI)	≥ 0.80
Comparative fit index (CFI)	≥ 0.90
Tucker-Lewis index (TLI)	≥ 0.95
Root mean square error of approximation (RMSEA)	≤ 0.10

Source: Azmi, Anna Che, and Ng Lee Bee., 2010. The acceptance of the e-filing system by Malaysian taxpayers: a simplified model. *Electronic Journal of e-Government*. 8 (1), pp. 13-22.

3.3.4.4.2 Path analysis

Geneticist Sewall Wright, who focused on to develop this model extensively in the 1920s, develops path analysis in 1918. Path analysis is a method employed to determine whether or not a multivariate set of non-experimental data fits well with a particular (a priori) causal model” (Norman and Streiner, 2003, p.156). Path analysis is an extension of multiple regressions and help researchers to see more than one dependent variable simultaneously. It also allows variables be dependent or independent regarding variables (Norman and Streiner, 2003, p.156). Hair et al. (2006, p.737) defined path analysis as “the general term for an approach that employs bivariate correlations to estimate relationships in a SEM model”. Path analysis tests the comparative strength of direct and indirect relationships among variables. Path analysis is the basis for SEM (Lleras, 2005), but SEM, “by looking at the latent variables extend path analysis” (Norman and Streiner, 2003, p.156).

Path analysis requires the usual assumptions of regression. This model is sensitive to model specification. As Gorsan (2009) stated “Because failure to inclusion of extraneous variables and include relevant causal variables affect the path coefficients which are structured to assess the relative importance of various direct and indirect causal path the dependent variable” When the variables in the model are latent variables measured by multiple observed indicators, path analysis is termed structural equation

modeling, treated separately. According to Qian- Li (2007), there are difference between SEM analysis and path analysis.

These are:

- i. Path analysis is a part of SEM analysis.
- ii. In path analysis, there are only observed variables and each of the variables has only one indicator.
- iii. In the path analysis model, it is assumed that variables are evaluated without error and in SEM analysis; latent variables are calculated for measuring the error.
- iv. Path analysis is more restrictive than SEM analysis in calculations.

In the current study, path analysis with latent variables and observed variables have been done to test the models proposed

3.3.4.5 Regression analysis

Regression analysis “is a statistical tool for the investigation of relationships between variables” (Sykes, 2015, p.2). Multiple regression analysis “is a statistical analysis that is used to analyze relationships between a single dependent variable and several independent variables” (Hair et al, 2006, p.176). In this analysis, researcher tries to figure out the causal effect of one variable upon another. To discover the interactions, researcher gather related “data on the underlying variables of interest and imply regression to guess quantitative effect of the causal variables upon the variable that they impact” (Sykes, 2015, p.2). Also researcher evaluates the “statistical significance” of the estimated relationships which is known “the degree of confidence that the real relationship is meaningful or close to the estimated relationships” (Sykes, 2015, p.3). Various techniques for regression analyses have been developed (Hair et al. 2006). Commonly used methods “such as linear regression and ordinary least squares regression are parametric, in that the regression function is defined in terms of a finite number of unknown parameters that are estimated from the data” (Hair et al, 2006, p.177). Nonparametric regression refers to techniques that allow the regression function to lie in a specified set of functions, which may be infinite-dimensional.

As emphasized above, the main aim of regression analysis is using independent variable to predict the single dependent value which is chosen by the researcher. When the

research case has a single independent variable, it is defined as simple regression. If the research case has two or more independent variables, this time it is defined as multiple regression (Hair et al. 2006)

Multiple regression techniques entail a large number of observations. The number of cases (participants) must noticeably exceed the number of predictor variables using in the regression model. It is recommended that, it should be minimum five times as many participants as predictor variables. An acceptable ratio is 10:1, but some people defend that this should be as high as 40:1 for some statistical selection methods (Hair et al. 2006).

3.3.4.5.1 *Terminologies of regression analysis*

There are some terms commonly used in interpreting the statistical results of regression analysis. The beta value, which is also known as standardized regression coefficient, measures how strongly each predictor variables influences the criterion variable. This beta values are measured in origins of standard deviation. For instance, a beta value of 2.5 indicates that a change of one standard deviation in the predictor variable will result in a change of 2.5 standard deviations in the criterion variable (Aron, 2006). It can be concluded that higher beta value the greater impact of the predictor variable on the criterion variable. Namely, standardized coefficient shows how increases in the independent variables affect relative position within the group (Aron, 2006).

R is a measure of the correlation between the observed value and the predicted value of the criterion variable. It has not plus or minus sign because in multiple regression the individual variables may vary (Hair et al. 2006). It also means that it is the indicator of degree of association. R square (R^2) is the correlation coefficient squared which refers to as the coefficient of determination. Standard error of the estimate is the other measurement method for the truthfulness of prediction. This calculation shows the square root of the sum of the squared errors divided by the degree of freedom. The other terminology used in regression analysis is ANOVA. It is a statistical technique which used to determine whether samples from two or more groups from populations with equal mean (Hair et al. p.384). It answers the question of do the group means differ significantly.

3.3.4.5.2 Types of multiple regressions

Multiple regression analysis has three different methods and each method is designed to research different questions (Hair et al. 2006). First method is standard multiple regression which is the most commonly used one. Standard multiple regression is calculating the relationships of independent variables and dependent variables. The second method is hierarchical or sequential regression analysis, which is used to calculate or observe the relationships between a set of independent variables and a dependent variable. The different point of this method is it controls the impact of other independent variables on the dependent variables. The third method is stepwise method. This method (Hair et al, p.384) “is used to classify the subset of independent variables that has the strongest relationship to a dependent variable”.

In the standard multiple regression method, independent variables in the research are entered to the system or equation at the same time. Multiple R and R^2 measurement values are the indicators of strength between the relationships of independent variables and the independent variables. And F test explains the generalizability of samples to the population.

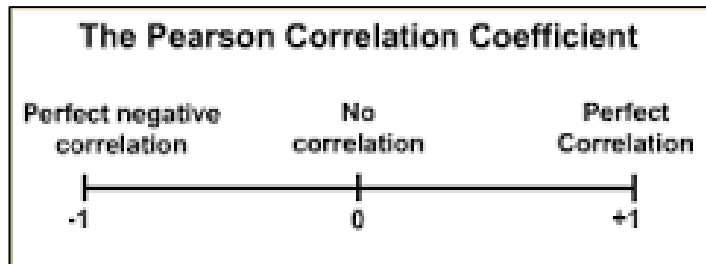
In the hierarchical or sequential regression analysis method, there are two stages to analyze the relationships of dependent and independent variables. For the first stage, the independent variables are entered to the equation or regression analysis which researcher wants to control. For the second stage, the independent variables are entered to the regression whose relationships are wanted to be examined by the researcher after the first stage. “A statistical test of the change in R^2 from the first stage is used to evaluate the importance of the variables entered in the second stage” (Hair et al, p.384). The last method is the stepwise regression and this method is designed (Hair et al, p.384) to examine “the most parsimonious set of predictors that are most effective in predicting the dependent variable”. Stepwise regression specifically can find the most parsimonious set of predictors (Hair et al, p.385) “that are most effective in predicting the dependent variables”. If it is not possible to make addition to the regression analysis which can make significant improvement in R^2 , researcher should stop the regression analysis (Hair et al. 2006). In this study, standard multiple regression analysis has been used to understand the relation of independent variables on dependent variables.

3.3.4.6 Correlation analysis

Correlation analysis is used to understand the relationship between two continuous variables (Hair et al. 2006). If this relationship has a linear relationship reasonably strong, which is also named as a straight line, Pearson's correlation coefficient is calculated and it shows the strength of the relationship (Hair et al. 2006).

Pearson's correlation coefficient presents the strength of relationship between two variables which are continuous. Plus (+) and minus (-) shows the relationships direction. Pearson's correlation coefficient value is between -1 and +1. The +1 value shows that there are perfect relationships between two metric variables while -1 indicates that there is perfect negative (table 3.7) or reverse relationship. 0 value indicates no relationships (Hair et al. 2006). Table 3.8 details the strength of relationship.

Table 3.7: The Pearson correlation coefficient



Source: Introduction to Correlation and Regression Analysis. 2015 <http://sphweb.bumc.bu.edu> [accessed 01.03.2015].

Table 3.8: Pearson correlation coefficient and strength of relationship

Value of r	Strength of relationship
-1.0 to -0.5 or 1.0 to 0.5	Strong
-0.5 to -0.3 or 0.3 to 0.5	Moderate
-0.3 to -0.1 or 0.1 to 0.3	Weak
-0.1 to 0.1	None or very weak

Source: Introduction to Correlation and Regression Analysis. 2015 <http://sphweb.bumc.bu.edu> [accessed 01.03.2015].

3.3.4.7 Independent Samples t-test

One of the most widely used tests is independent samples t-test. In this test mean scores of two different unrelated groups are compared on the same continuous, dependent variable (Pallant, 2011).

For making independent t-test, each of the two populations, which are compared, should have a normal distribution. Additionally populations should have the same variance and the data used in the study must be sampled independently from the two populations (Markowski et al. 1990).

In this study, independent samples t-test is used to compare the prescription behavior of physicians' demographic variables such as type of institution, experience, specialty and daily patient number.

3.3.5 Multicollinearity

Hair et al. (2006) defined multicollinearity is the relationship between more than two independent variables. "It occurs when a single independent variable is highly correlated with a set of other independent variables" (Hair et al. 2006, p.170).

In the various studies, independent variables can be highly correlated with the dependent variable. However, these variables can also have little or have not correlation each other. In these conditions, researcher can determine the degree of multicollinearity and define the next actions if it is needed (Hair et al. 2006). Multicollinearity is controlled by checking correlations matrix. If the value is over 0.90, it can be concluded that there is multicollinearity. If the value is below 0, 90, researcher can conclude that there is no multicollinearity. In literature, there are two measures which are commonly used and known as tolerance and variance inflation factor (VIF). Tolerance is calculated as $1-R^2$ and it is defined as the amount of variability of an independent variable which can not be explained by the other independent variables. Inverse of tolerance is defined as VIF and if it is high, it means there is a high multicollinearity (Hair et al. 2006). In this study, VIF is used as the measure to check the multicollinearity.

3.3.6 Validity and Reliability

Validity and reliability are related research issues ask us to consider whether we are studying what we think we are studying and whether the measures we use are consistent. In this section, validity and reliability are defined and their dimensions are examined.

3.3.6.1 Validity

Validity has been defined as “the extent to which a measure or set of measures correctly represents the concept of the study.” by (Hair et al. 2006, p.3). It is concerned with how well the concept is defined by the measures whereas reliability relates to the consistency of the measures. Namely, validity is the capability of a scale to measure what was aimed to measure (Zikmund, 2003). Therefore, validity refers to how well a test measures what it is purported to measure.

There are three models of validity according to Hair et al. (2006). These models are convergent, discriminant, and face under construct validity. Construct validity “is the extent to which a set of measured items actually reflects the theoretical latent construct those items are designed to measure” (Hair et al. 2006, p.3). In the current study, construct validity has been examined with these three models.

3.3.6.1.1 Convergent validity

Convergent validity is a type of construct validity. Convergent validity “is established if two similar constructs correspond with one another, while discriminant validity applies to two dissimilar constructs that are easily differentiated. It assesses the degree to which two measures of the same concept are correlated them with the summated scale” (Hair et al, 2006, p.137). In this validity model, high correlations specify that the scale is measuring its intended concept.

To measure convergent validity, there are various ways to estimate the relative amount such as factor loadings, variance extracted and reliability (Hair et al. 2006). In this study, factor loading method and Average Variance Extracted (AVE) are used to estimate the relative amount of convergent validity. According to Hair et al. (2006), factor loading estimates should be 0.5 or higher and ideally 0.7 or higher and AVE should be 0.5 or higher.

3.3.6.1.2 Content (face) validity

According to Hair et al (2006), content validity is “the assessment of the correspondence of the variables to be included in a summated scale and its conceptual definition” (p.136). This validity is also known as face validity. In this validity type, researchers ensure that scale used in the study and this scale’s extends past empirical issues which includes theoretical and practical considerations. (Robinson et al. 1991)

In this study, it is used internationally validated and accepted scales to from international literature to measure factors. However, content validity is taken from three academics and physicians with in depth interviews before the final survey.

3.3.6.1.3 Discriminant validity

Hair et al (2006) defined discriminant validity as “is the degree to which two conceptually similar concepts are distinct.” (p.137). This test is again for the correlation among the summated scale. Summated scale again has correlation with a similar measure, but in practice distinct measure. In this model correlation should be low which means that summated scale is different from the other similar concept (Hair et al. 2006) In this study, this method has been employed for discriminant validity.

3.3.6.2 Reliability

It is known that, in social sciences, researcher’s goal is to reduce measurement error and this follows several paths. To assess the degree of measurement error, researcher should focus on two characteristics of a measure (Hair et al. 2006). These are validity which was explained in previous section and reliability. According to Zikmund (2003) reliability is the extent to which measures are free from random and therefore return consistent results. If validity is assured, now researcher should focus on reliability of the measurements. Hair et al. (2006) defines reliability “is the degree to which the observed variable measures the true value and is error free; thus it is the opposite of measurement error.” (p.8).

For instance, if researcher asked the same measure repeatedly, more reliable measures will show greater consistency than less reliable measures. Due to this reason, researcher must always focus on the variables which are being used in the study and if alternative and valid measures are available, researcher should choose the higher reliability (Hair et

al. 2006). The main of reliability is minimizing random errors (Malhotra, 2004). Reliability differs from validity since it is not related with what should be measured, but how it is measured (Hair et al. 2006).

For evaluating reliability, in literature there are various methods between multiple measurements of a variable. One method is test-retest method and in this model consistency is measured between the responses of person at two different points of time (Hair et al. 2006). In this method it is aim to ensure that responses from the participants not too varied across time periods. With this approach, it can be concluded that a measurement is any point in time reliable. On the other hand, as Malhotra stated (Malhotra. 2007) there are several problems associated with the test–retest approach to determining reliability. First, it is sensitive to the time interval between testing and the second initial measurement may alter the characteristics being measured. But the most important one is the test – retest reliability coefficient can be exaggerated by the correlation of each item with itself (Malhotra, 2007).

The other form of reliability is alternative forms. In this method, two equivalent forms of the scale are constructed. Same respondent's answers are measured at two different points of time. However it is an expensive method and it is difficult to apply. Additionally, it is time consuming (Malhotra, 2007).

The most commonly used method to measure of reliability is internal consistency. In this method, it is being applied to the consistency among the variables in a summated scale (Hair et al. 2006). The rationale behind this method is “the individual items or indicators of the scale should all be measuring the same constructs and thus be highly inter correlated” (Hair et al. 2006, p.137).

In this method, Cronbach's alpha is the most widely used for assessing the consistency of entire scale (Nunnally, 1979). The coefficient number varies from 0 to 1, and a value of 0.6 or less generally indicates unsatisfactory internal consistency reliability (Malhotra, 2007).

An important property of coefficient alpha is that its value tends to increase with an increase in the number of scale items Due to this reason, coefficient alpha value can be falsely, and inappropriately, inflated by several redundant scale items (Peterson, 1994).

3.4 DATA ANALYSIS AND RESULTS

In this section, statistical analysis and the results of these analyses are presented. In the first section, pilot study is examined and shared. In the second part, main study and the statistical analysis of the main study are presented and examined.

3.4.1 Pilot Study

Prior to pilot study, for reassuring the content (face) validity questionnaire form is presented to the three marketing academicians and six physicians. After their feedbacks, some modifications are made in the questionnaire designs which are especially in translations. In conclusion, final version of the questionnaire is presented to supervising committee and they approved the final version with small modifications. After that, pilot study is completed.

For the sample size of pilot study in the literature, there are various suggestions. For instance, Zatalman and Bueger (1975) recommended that small size of sample would be enough before the main study. According to Lukas (1975) fifty sample sizes is accepted for pilot studies. Connelly recommended that (2008), literature suggests that a pilot study sample should be 10% of the sample projected for the larger parent study. Additionally, Isaac and Michael (1995) recommended 10 to 30 participants and which is same for Hill (1998). Treece and Treece (1982) recommended 10% of the project sample size. On the other side, Simon (1975) gives an interval for the pre-test sample size between 25 and 100.

The pilot study is administered to physicians and 144 physicians filled the survey sheet from various locations of Turkey. Participant specialties are ENT, pediatricians, family practitioners and internal specialists.

For analyzing reliability SPSS 19.0 is used and Crobach's Alpha values are analyzed. As mentioned in the literature review, Cronbach's Alpha value should be higher than 0, 7 and below this value is the indicator of unsatisfactory reliability (Hair et al. 2006). As it can be seen in Table 3.4, the reliability scores of the scales are very high for all dimensions. All other scales' scores are greater than 0.7 (table 3.9) and these scales are used in the main study. However, in EFA session, some questions are extracted from the study and dimensions are revised according to statistical results.

Table 3.9: Reliability of the variables in the pilot study

	(N=144)	
	Number of Items	Cronbach's Alpha
Corporate Reputation	21	0.962
PSR	30	0.916
Advertising/Promotion	5	0.825
Brand Awareness	5	0.797
Brand Personality	41	0.962
Brand Perceived Quality	11	0.894
Brand Satisfaction	8	0.917
Brand Loyalty	10	0.931

3.4.2 Main Study

Following the pilot study and its statistical analysis, the questionnaire is revised for the main study. The main study is done with physicians from various locations of Turkey between October 2014 and February 2015. Same data collection method has been used as in pilot study and totally reached more than 350 people.

3.4.2.1 Examining the data

In the first step before starting the research process, all of the survey data is examined which is necessary to make right analysis. This examination includes treatment of missing data, checking normality of the data and detecting outlier according to Hair et al. (2006).

Poor data quality can have substantial social and economic impacts. So it is crucial to examine data before the analyzing process to prevent biased findings and incorrect interpretation (Wang, 1996)

3.4.2.1.1 Missing data

Missing data occurs when a respondent does not answer one or more questions in a survey (Hair et al. 2006). Missing data can impact the general outcome of the survey if it is not managed properly. In this process, researchers' challenge is report the issues due to missing data which can impact the generalizability of the results. According to Hair et al. (2006) "the researcher's primary concern is to identify the patterns and

relationships underlying the missing data in order to maintain as close as possible the original distribution of values when any remedy is applied” (p.49).

The first impact of missing data is on the sample size available for analysis. It causes a reduction in sample size. Because of the missing answers in the questionnaire form, the researcher must exclude the respondent’s answer from the analysis. The other important impact is according to Hair et al. “any statistical results based on data with a nonrandom missing data process could be biased” (p.50).

In this study there are some missing values and these respondents’ answers which are especially for the questions about the impact factors on prescription behavior excluded from the study. It has been found that 22 respondents did not fill the survey sheet completely. Most of them stated that they are not visited by the related company’s PSR and it is the reason of why they did not fill the PSR linked factors questions in the answer sheet. Additionally, some of the respondents did not fill the demographic sections due to concern legal sanctions. We excluded these respondents’ answer from the analysis. Totally it has been reached 331 participants.

3.4.2.1.2 Assessment of normality

Normality refers to degree to which the distribution of the sample data corresponds to a normal distribution (Hair et al. 2006). Normality is one of the most critical analyses in multivariate behavior. In the analysis, if the variable are normally distributed it will be possible to get better statistical results. Assessing the impact of violating the normality assumption is based on two factors. These factors are shape of distribution and the size of the sample (Hair et al. 2006).

For the first factor, the shape of any distribution can be described by two different measures. These measures are kurtosis and skewness. Kurtosis refers to the flatness of the distribution as compared to normal distribution while skewness refers to symmetry of the distribution. Whereas kurtosis refers to the height of the distribution, skewness is used to describe the balance the distribution (Hair et al. 2006). The other factor is sample size which has the effect of increasing statistical power by reducing sample size. It has the similar effect on the shape of distribution, larger sample size reduce the detrimental effects of non-normality.

It is expected to have skewness absolute value less than 3 and kurtosis absolute value less than 10. Greater absolute figures for these measures are interpreted as a problem in normality (Kline, 2005). Additionally, in small samples (less than 50 observations) significant non-normality has a considerable effect on the results, for big samples (200 or more observations) these effects can be negligible (Tabachnick and Fidell, 2007; Hair et al. 2006).

In this study, all of the items have skewness less than 3 and kurtosis less than 10. However, some of the questions are excluded during the exploratory factor analysis.

3.4.2.2 Sample characteristics

This study has been done in Turkey and physicians from various locations of Turkey answered the questions for this study. It has been reached 331 physicians who have different specialties. First of all, it is asked to participants (table 3.10) how many times the related product is prescribed per week.

Table 3.10: Prescribing figures per week

Prescribing per week	Frequency	Percent
1-5 times per week	167	50,5
6-10 times per week	107	32,3
11-20 times per week	57	17,2
Total	331	

Almost 50% of the total participants stated that they prescribe the related product 1-5 times per week which represents the 1-5 patients totally. As it is known, physicians prescribe more than one product for each patient but in this study one product represents one patient.

Table 3.11: Specialty of the respondents

Specialty	Frequency	Percent
Family Practitioner	138	42%
General Surgeon	49	15%
ENT	41	12%
Pediatrician	38	11%
Internal Specialist	26	8%
ICU	10	3%
Infection Specialist	5	2%
Orthopedist	5	2%
Neurology	3	1%
Gynecologist	2	1%
Cardiology	2	1%
Oncology	2	1%
Respiratory	4	1%
Urology	4	1%
Gastroenterology	1	0%
Psychiatrist	1	0%
Total	331	100%

68% of the respondents are male and 33% of the respondents (table 3.12) see around 11-20 patient per day. 43% of the respondents have almost ten year experience. As emphasized in the sample definition in target population section 3.3.3, 35% of the respondents from regional healthcare centers who have family practitioner background

As showed in table 3.11, the specialty prevalence of the respondents is in line with prescription potential of product. 42% of the respondents are family practitioners among the 331 respondents. Than general surgeons, ENT specialists and pediatricians follow family practitioners. To have different specialties perception for this study, it has been reached to other specialties such as oncology, ICU, neurology, cardiology and respiratory specialties.

Table 3.12: Profile of the respondents

Gender	Frequency	Percent
Male	226	68%
Female	105	32%
Hospital Unit		
Regional Healthcare Center	117	35%
State Hospital	59	18%
University Hospital	63	19%
Private Hospital	35	10%
Educational and Research Hospital	45	13%
Private Clinic	5	1%
Doctor's Office	7	2%
Experience year		
0-10	141	43%
11-20	134	40%
21-30	56	17%
Patient Per Day		
0-20	59	18%
21-40	108	33%
41-60	70	21%
61-80	64	19%
81-100	30	9%
Total	331	100%

In this study, physicians from various location of Turkey answered the questions as seen in table 3.8. Most of the respondents from Turkey and İstanbul are the first city among the other cities with (table 3.13) the 35% share.

Table 3.13: Location of respondents

	Frequency	Percent
Adana	17	5,1%
Adıyaman	2	0,6%
Afyonkarahisar	2	0,6%
Amasya	3	0,9%
Ankara	13	3,9%
Antalya	22	6,6%
Aydın	7	2,1%
Balıkesir	2	0,6%
Bursa	11	3,3%
Çanakkale	1	0,3%
Çorum	3	0,9%
Denizli	2	0,6%
Diyarbakır	1	0,3%
Edirne	7	2,1%
Elazığ	6	1,8%
Erzurum	2	0,6%
Eskişehir	3	0,9%
Giresun	1	0,3%
Hatay	4	1,2%
Isparta	1	0,3%
İstanbul	118	35,6%
İzmir	16	4,8%
Kayseri	20	6,0%
Kırıkkale	1	0,3%
Kocaeli	8	2,4%
Kütahya	1	0,3%
Malatya	3	0,9%
Mersin	2	0,6%
Muğla	1	0,3%
Ordu	1	0,3%
Osmaniye	2	0,6%
Sakarya	6	1,8%
Samsun	6	1,8%
Sinop	1	0,3%
Sivas	5	1,5%
Tekirdag	22	6,6%
Trabzon	1	0,3%
Uzunköprü	1	0,3%
Van	5	1,5%
Zonguldak	1	0,3%
Total	331	100,0

3.4.2.3 Factor analysis

In our study, EFA is done to reach best representative data (Williams et al. 2012). As mentioned in the literature section, EFA is a multivariate statistical procedure that has many uses (Hair et al. 1995). This study gathers different scales to measure impact factors on prescribing behavior and some scales are tested for the first time. From this point of view, EFA is very important to make right CFA analysis and also for SEM analysis respectively. For this study, as explained in the literature section, EFA is done according to literature suggestions which are assessment of the data, factor extraction and factor rotation.

The first step for EFA is study's sample size. Hair et al (1995) suggest that sample size should be 100 or greater that to make factor analysis. In various studies, sample size classified as: 100 as poor, 200 as fair, 300 as good, 500 as very good, and 1000 or more as excellent (Comrey, 1973). In the current study, sample size is 331. Also other details are explained in the next sections.

3.4.2.3.1 Exploratory factor analysis

In this study, sample size is 331 and there are eight constructs as mentioned in the methodology section. The results of the related statistical analysis are shown in table 3.14. These related statistical analyses are The KMO scores, Bartlett's test of sphericity and total variance explained by the construct. Each construct's EFA analysis and deleted question for EFA are presented in this section.

Table 3.14: Exploratory factor analysis (EFA) results

Construct	Kaiser-Meyer-Olkin Measure of Sampling Adequacy	Bartlett's Test of Sphericity			Total Variance Explained
		Approx. Chi-Square	df	sig.	
Corporate Reputation	0.947	4355.9	153	0.000	62.8
PSR	0.931	6569.8	276	0.000	71.9
Advertising-Promotion	0.729	415.1	3	0.000	76.5
Brand Awareness	0.816	653.8	6	0.000	71.1
Brand Personality	0.942	6232.8	276	0.000	66.2
Drug/Perceived Quality	0.840	1138.6	21	0.000	72.7
Brand Satisfaction	0.938	1867.5	28	0.000	68.2
Brand Loyalty	0.937	2303.1	45	0.000	63.1

Corporate reputation (COR) has 21 items and three of them (COR9, COR10, COR11) are eliminated in EFA. KMO measure is 0.947 which should be greater than 0.6 and Bartlett's test of sphericity is significant at $p < 0.05$ level. The items in the construct explain the 62.8 percent of the variance. After EFA, corporate reputation is merged under managerial competency and trustworthiness dimensions which were six in previous one. Table 3.15 summarizes the factor loadings and new dimensions. The new model shows acceptable level and they are above the threshold levels.

Table 3.15: Exploratory factor analysis for corporate reputation

Factor and related items	Factor Variance	Factor Loadings	Cronbach Alfa
Factor 1: Managerial Competency	55,972		0,931
Is an environmentally responsible company.		0,734	
Has an excellent leadership.		0,732	
Looks like a good company to work for.		0,726	
Recognizes and takes advantage of market opportunities.		0,724	
Supports good causes.		0,718	
Has a clear vision for its future.		0,717	
Is well-managed.		0,706	
Maintains high standards in the way it treats people.		0,705	
Looks like a company that would have good employees.		0,685	
Tends to out-perform its competitors.		0,676	
Factor 2: Trustworthiness	6,918		0,915
Respect the company.		0,823	
Trust the company a great deal		0,778	
Offers high quality products and services.		0,710	
Admire the company.		0,702	
Stands behind its products and services.		0,679	
Offers products and services that are a good value for the money.		0,679	
Develops innovative products and services.		0,657	
Have a good feeling about the company.		0,649	
KMO: 0,95			
p: ,000 (Bartlett's Test)			

Pharmaceutical sales representative (PSR) has 30 items and six of these items (PSR8, PSR10, PSR17, PSR21, PSR22 and PSR23) are eliminated in EFA. After this elimination, KMO score is 0.931 and Bartlett score is significant at $p < 0.05$ level. The PSR explains a total variance of 71.9 percent. The factor solution of the construct and its reliability showed above (table 3.16) acceptable levels Kaiser-Mayer-Olkin Measure of Sampling Adequacy and Cronbach's alpha are both above threshold levels.

Table 3.16: Exploratory factor analysis for PSR

Factor and related items	Factor Variance	Factor Loadings	Cronbach Alfa
Factor 1: Frequent Social Contact	41,147		0,947
Meet over breakfast, lunch or dinner.		0,886	
Get together primarily to have fun.		0,873	
Attend entertainment events (sports, theater etc.)		0,851	
Meet away from the workplace.		0,838	
Talk about common interests besides work.		0,806	
Get together with other family members		0,790	
Talk about family, sports or other personal interests.		0,685	
Factor 2: Trust to sales people	17,536		0,913
This salesperson was sincere		0,842	
This salesperson was competent and professional		0,828	
This salesperson is friendly.		0,786	
I felt very little risk was involved when dealing with this salesperson		0,722	
This salesperson is not trustworthy		0,711	
This salesperson is always nice to us.		0,711	
This salesperson does not make false claims.		0,645	
This salesperson has been frank in dealing with us.		0,594	
Factor 3: Ethical Behavior	8,473		0,899
The salesperson lies about competition in order to make the sale		0,881	
The salesperson gives answers when he/she does not really know the answers		0,872	
The salesperson applies sales pressure even though he/she knows the product is not right for me		0,850	
The salesperson lies about availability in order to make a sale		0,787	
The salesperson paints rosy pictures of the products to make them sound as good as possible		0,771	
This salesperson is only concerned about himself/herself.		0,672	
Factor 4: Similarity	4,762		0,907
This salesperson is very similar with me		0,765	
This salesperson shares similar interests with me.		0,738	
This salesperson has values similar with me.		0,717	
KMO: 0,93			
p: ,000 (Bartlett's Test)			

In EFA analysis, PSR is merged under four various dimensions which are frequent social contact, trust to sales peoples, ethical behavior and similarity. The factor solution of the construct and its reliability showed above acceptable levels Kaiser-Mayer-Olkin Measure of Sampling Adequacy and Cronbach's alpha are both above threshold levels.

Advertising promotion (ADP) has 5 items and two of these items (ADP4, ADP5) are deleted in EFA due to low (table 3.17) communality values. ADP4 communality value is 0,478 and it is 0,479 for ADP5. KMO score is 0.729 and Bartlett score is significant at $p < 0.05$ level. Advertising promotion construct with 3 items explain 76.5 percent of the total variance. Cronbach alpha value is 0.729.

Table 3.17: Exploratory factor analysis for advertising and promotion

Factor and related items	Factor Variance	Factor Loadings	Cronbach Alfa
Factor 1: Advertising and Promotion	76,578		0,729
Promotion interferes with my prescription		0,885	
Complementary services offered by laboratories, such as events or sites, influences my prescription		0,874	
Gifts and souvenirs accompanying the product influence my prescription		0,866	
Visit by personal seller influence my prescription		deleted	
This company rewards me for my regular prescription of its drugs		deleted	

One item (BRA5) of brand awareness (BRA) construct is eliminated in EFA (see Table 3.18). BRA5 communality value is 0,450 and it is eliminated in EFA. The four-item-construct with a 0.816 KMO measure has a Bartlett score which is significant at $p < 0.05$ level and it explains a variance of 71.1. Cronbach alpha value is 0.816.

Table 3.18: Exploratory factor analysis for brand awareness

Factor and related items	Factor Variance	Factor Loadings	Cronbach Alfa
Factor 1: Brand Awareness	71,104		0,816
I can recognize X among other competing brands.		0,881	
I am aware of X.		0,879	
Some characteristics of X come to my mind quickly.		0,876	
I can quickly recall the symbol or logo of X.		0,727	
I have difficulty in imagining X in my mind.(Reverse)		deleted	

Brand Personality (BRP) has 41 items and seventeen of these items (BRP13, BRP17, BRP18, BRP19, BRP24, BRP25, BRP26, BRP27, BRP28, BRP29, BRP35, BRP36, BRP37, BRP38, BRP39, BRP40 and BRP41) are eliminated in EFA (see Table 3.14). After this elimination, KMO score is 0.942 and Bartlett score is significant at $p < 0.05$ level. The brand personality explains a total variance of 66.2 percent

Table 3.19: Exploratory factor analysis for brand personality

Factor and related items	Factor Variance	Factor Loadings	Cronbach Alfa
Factor 1: Sincerity	49,726		0,947
real		0,822	
down to earth		0,791	
honest		0,774	
wholesome		0,719	
sincere		0,699	
original		0,647	
family oriented		0,623	
reliable		0,620	
urban		0,595	
Factor 2: Excitement	17,536		0,913
sentimental		0,842	
friendly		0,828	
exciting		0,786	
spirited		0,722	
cheerful		0,711	
daring		0,711	
cool		0,645	
Factor 3: Competence	6,090		0,920
contemporary		0,740	
good looking		0,726	
glamorous		0,715	
upper class		0,710	
up-to-date		0,695	
independet		0,686	
confident		0,630	
leader		0,615	
KMO: 0,94			
p: ,000 (Bartlett's Test)			

In EFA analysis, brand personality is merged under three various dimensions which are frequent sincerity, competence and excitement. The factor solution of the construct and its reliability showed above acceptable levels Kaiser-Mayer-Olkin Measure of Sampling Adequacy and Cronbach's alpha are both above threshold levels

Four items (DPQ3, DPQ9, DPQ10 and DPQ11) of drug perceived quality (DPG) construct are eliminated in EFA as seen in Table 3.15. The seven-item-construct with a 0.840 KMO measure has a Bartlett score which is significant at $p < 0.05$ level and it explains a variance of 72.7 percent.

Table 3.20: Exploratory factor analysis for perceived quality

Factor and related items	Factor Variance	Factor Loadings	Cronbach Alfa
Factor 1: Efficacy	55,908		0,880
The drug is supported with wealth of original scientific data to back its superiority		0,885	
The drug is supported by international guidelines		0,866	
The drug of this company has a comfortable mode of action in the body		0,788	
The drug of this company is available in a comfortable dosage		0,723	
It is priced which is cost effective for my patient's and is worth paying more		0,703	
Factor 2: Side effect	16,803		0,780
Well tolerated and positive side effect profile		0,890	
It reduces risk of my patients from future events and side effects		0,863	
KMO: 0,84			
p: ,000 (Bartlett's Test)			

In EFA analysis, drug perceived quality is merged under two various dimensions which are efficacy and side effect. The factor solution of the construct and its reliability showed above acceptable levels Kaiser-Mayer-Olkin Measure of Sampling Adequacy and Cronbach's alpha are both above threshold levels.

As presented in Table 3.21, none of the eight items of brand satisfaction (BRS) is eliminated in EFA. The KMO score is 0.938 and Bartlett score is significant at $p < 0.05$ level. The 68.2 percent of the variance is explained by these eight items. Total variance explained is 68,17 and Cronbach alpha is 0.931.

Table 3.21: Brand satisfaction and their description

Factor and related items	Factor Variance	Factor Loadings	Cronbach Alfa
Factor 1: Brand Satisfaction	68,178		0,931
I am very satisfied with this brand.		0,880	
I am very happy to prescribe this brand.		0,855	
I am very satisfied with the treatment quality provided by this b		0,852	
This brand does a good job of satisfying my needs.		0,847	
The service-products provided by this brand is very satisfactory		0,823	
I believe that using this brand is usually a very satisfying experi		0,801	
I made the right decision when I decided to use this brand.		0,778	
I am addicted to this brand in some way		0,777	

As presented in Table 3.22, brand loyalty (BRL) has 10 items and none of these items is eliminated in EFA. KMO score is 0.937 and Bartlett score is significant at $p < 0.05$ level. Brand loyalty construct with 10 items explain 63.1 percent of the total variance. Cronbach alpha is 0.937.

Table 3.22: Brand loyalty and their description

Factor and related items	Factor Variance	Factor Loadings	Cronbach Alfa
Factor 1: Brand Loyalty	63,141		0,937
I intend to prescribe this brand in the near future		0,845	
I intend to prescribe other products of this company		0,839	
I consider this brand as my first choice in this category		0,832	
The next time I need that product, I will prescribe the same brand		0,821	
I will continue to be loyal customer for this brand		0,818	
Commercials regarding to competing brands are not able to reduce my interest in prescribing this brand.		0,812	
I say positive things about this brand to other people		0,780	
I recommend this brand to someone who seeks my advice		0,739	
I intend to recommend this brand to other people		0,738	
I consider this brand my first choice in the next few years		0,709	

3.4.2.4 Reliability of constructs

For evaluating reliability, in literature there are various methods between multiple measurements of a variable. The most commonly used method to measure of reliability is internal consistency. In this method, it is being applied to the consistency among the variables in a summated scale (Hair et al. 2006,). In this method, Cronbach's alpha is the most widely used for assessing the consistency of entire scale (Nunnally, 1979). The coefficient number varies from 0 to 1, and a value of 0.6 or less generally indicates unsatisfactory internal consistency reliability (Malhotra, 2007).

Table 3.23 shows the reliability analysis of the study and for all the scales the reliability coefficient value is above the reference value which is 0.7 especially for social sciences (Cortina, 1993)

Table 3.23: Reliability of constructs

Scale / Factor	n of items	Cronbah's Alpha
Corporate Reputation	18	0,952
Managerial Competency	10	0,931
Trustworthiness	8	0,915
Pharmaceutical Sales	24	0,931
Frequent social contact	7	0,947
Trust sales people	8	0,913
Ethical Behaviour	6	0,899
Similarity	3	0,907
Advertising Promotion	3	0,847
Brand Awareness	4	0,849
Brand Personality	24	0,955
Sincerity	9	0,921
Excitement	7	0,926
Competence	8	0,910
Drug Perceived Quality	7	0,859
Efficiency	5	0,880
Side Effect	2	0,780
Brand Satisfaction	8	0,931
Brand Loyalty	10	0,934

3.4.2.5 Validity of constructs

Validity has been defined by Hair et al. (2006, p.3) “as the extent to which a measure or set of measures correctly represents the concept of the study”. It is concerned with how well the concept is defined by the measures whereas reliability relates to the consistency of the measures. In this study, convergent validity and discriminant validity is calculated for the constructs.

Convergent validity is a type of construct validity. There are different ways to estimate relative amount of convergent validity. Different calculation methods are explained in methodology section 3.3.7.1.1. As emphasized in the related section, average factor loadings and average variance extracted value should be above 0.5 (Hair et al. 2006).

As summarized in table 3.24, all AVE values and average factor loadings for the constructs used are higher than 0.5, meaning that convergence is sufficient.

Table 3.24: Convergent validities of constructs

Convergent Validity	Average Factor Loadings	Factor Loadings above 0.50	AVE	AVE above 0.5
Corporate Reputation	0,753	✓	0,566	✓
Pharmaceutical Sales Representative	0,804	✓	0,647	✓
Advertising and Promotion	0,875	✓	0,765	✓
Brand Awareness	0,841	✓	0,707	✓
Brand Personality	0,710	✓	0,505	✓
Perceived Drug Quality	0,855	✓	0,733	✓
Brand Satisfaction	0,827	✓	0,683	✓
Brand Loyalty	0,793	✓	0,629	✓

On the other side, for estimating the discriminant validity, correlation of sub dimensions calculated for the constructs and results are compared with AVE value. When the variance-extracted value is greater than squared correlations estimate, discriminant validity is established. In this study, there are four constructs that correlations can be calculated in the constructs. Corporate reputation has two sub dimensions such as managerial competence and trustworthiness, PSR has four dimensions such as frequent social contact, similarity, trust to sales people and ethical behavior. Brand personality has three sub dimensions such as competence, sincerity and excitement. Finally perceived drug quality has two dimensions such as side effect and efficacy.

Firstly, corporate reputation discriminant validity is analyzed. In table 3.25, AVE values and squared correlation values are presented. Firstly AVE value is higher than recommended level 0.5 and convergent validity is established

Table 3.25: AVE and squared correlation of corporate reputation construct

Discriminant Validity	AVE	Squared Correlation
Corporate Reputation		
Managerial Competency	0,566	0,561
Trustworthiness		

Additionally for discriminant validity, as emphasized in the methodology section, AVE value should be higher than the squared correlations for each constructs. As presented in

table 3.26, AVE values are higher than each square correlation. Hence, discriminant validity is established for corporate reputation construct.

Table 3.26: Squared correlation of corporate reputation

Correlations of factors	Managerial Competency	Trustworthiness
Managerial Competency	1	
Trustworthiness	0,561	1

In the second stage, PSR discriminant validity is analyzed. As summarized in table 3.27, calculated AVE and squared correlation values are presented. As seen in the table 3.27, AVE values are higher than recommended level 0.5 and convergent validity is established

Table 3.27: AVE values of PSR construct

Disriminant Validity	AVE	Squared Correlation
Pharmaceutical Sales Representative		
Frequent Social Contact and Trust to Sales People	0,646	0,301
Frequent Social Contact and Ethical Sales Behavior	0,689	0,007
Frequent Social Contact and Similarity	0,674	0,387
Trust to Sales People and Ethical Behavior	0,619	0,124
Trust to Sales People and Similarity	0,604	0,387
Ethical Sales Behavior and Similarity	0,647	0,012

Additionally for discriminant validity, AVE value should be higher than the squared correlations of each constructs. As presented in table 3.27, AVE value is higher than each square correlation. Hence, discriminant validity is established for PSR construct.

Table 3.28: Squared correlation of pharmaceutical sales representatives

Correlations of factors	Similarity	Ethical Sales Behavior	Trust	Frequent Social Contact
Similarity	1,000			
Ethical Sales Behavior	0,012	1,000		
Trust	0,012	0,124	1,000	
Frequent Social Contact	0,387	0,007	0,301	1,000

In the third stage, brand personality discriminant validity is analyzed. As summarized in table 3.28, calculated AVE and squared correlation values are presented. As seen in the table 3.29, AVE values are higher than recommended level 0,5 and convergent validity is established.

Table 3.29: Discriminant validities of brand personality

Discriminant Validity	AVE	Squared Correlation
Brand Personality		
Sincerity and Excitement	0,540	0,340
Sincerity and Competence	0,506	0,462
Competence and Excitement	0,501	0,446

Additionally for discriminant validity, AVE value should be higher than the squared correlations of each constructs. As presented in table 3.30, AVE values are higher than each square correlation. Hence, discriminant validity is established for brand personality construct.

Table 3.30: Squared correlation of brand personality

Correlations of factors	Excitement	Competence	Sincerity
Excitement	1,000		
Competence	0,446	1,000	
Sincerity	0,340	0,462	1,000

Finally, drug perceived quality discriminant validity is analyzed. As summarized in table 3.31, calculated AVE and squared correlation values are presented. As seen in the table 3.31, AVE values are higher than recommended level 0.5 and convergent validity is established.

Table 3.31: Discriminant validities of drug perceived quality

Disriminant Validity	AVE	Squarred Correlation
Drug Perceived Quality		
Efficacy		
Side Effect	0,733	0,213

Additionally for discriminant validity, AVE value should be higher than the squared correlations of each constructs. As presented in table 3.32, AVE values are higher than each square correlation. Hence, discriminant validity is established for drug perceived quality construct.

Table 3.32: Squared correlation drug perceived quality

Correlations of factors	Efficacy	Side Effect
Efficacy	1	
Side effect	0,213	1

3.4.2.6 Confirmatory factor analysis

CFA allows the researcher to test the hypothesis that a relationship between the observed variables and their underlying latent construct(s) exists (Suhr, 2006). It has been defined by Pallant (2011) as a set of techniques to test specific hypothesis or theories regarding the structure underlying a set of variables.

This factor analysis details are explained in the section 3.3.4.3. In this study, to make CFA, AMOS 22 is used and results are presented in this section.

3.4.2.6.1 CFA for factors

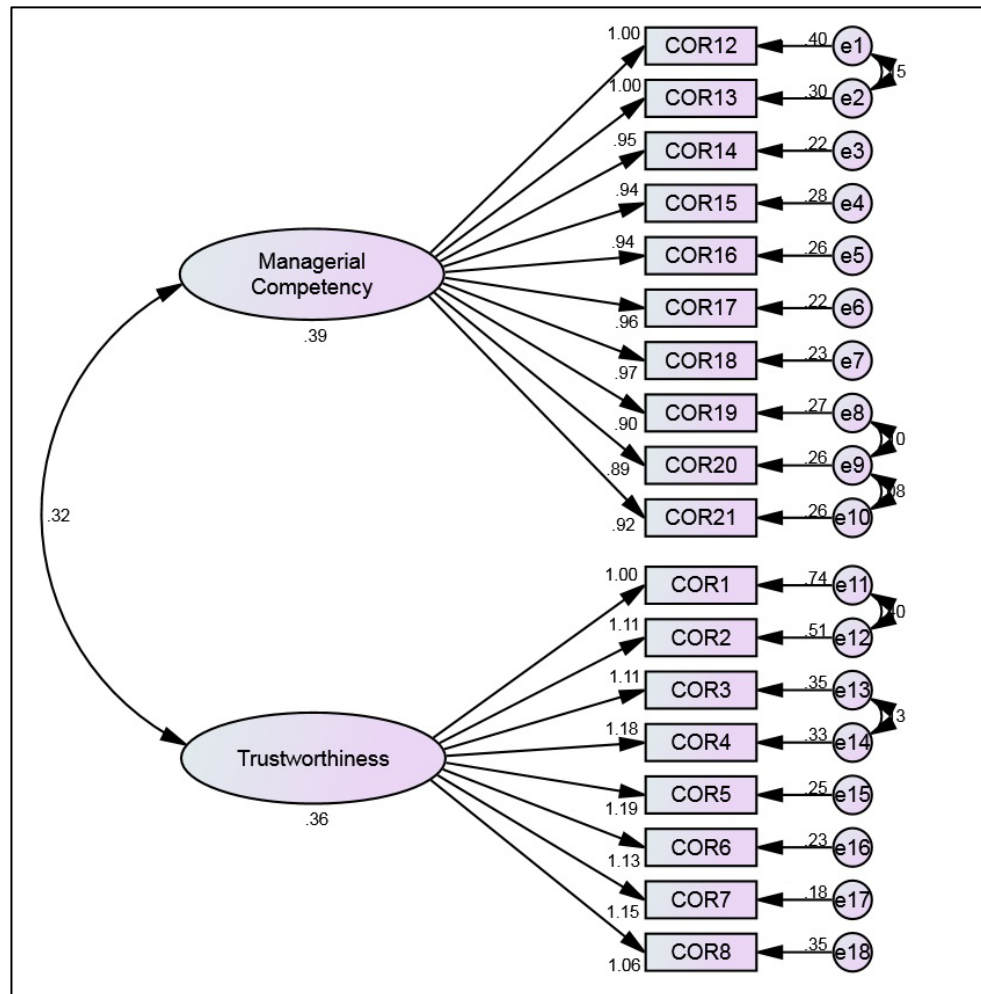
In this part CFA of the used constructs in the study are presented in detail. Additionally results of all constructs are presented in the last section of this part.

As mentioned in the literature section, corporate reputation consists of 21 items, but three of them (COR9, COR10 and COR11) are eliminated in EFA process.

This construct is presented with six factors in the literature, but in the current study it is described with two factors in the CFA and it is explained as two dimensions as a result of factor analysis. So, as presented in Figure 3.7, corporate reputation has two factors which are called managerial competency and Trustworthiness.

All items are statistically significant ($p < 0.001$) and loaded on these factors. However, the chi-square goodness-of-fit is statistically not significant ($p = .000$). The other goodness-of-fit are well: $C_{min}/df = 2.216$, $GFI = .910$, $AGFI = .881$, $CFI = .963$, $NFI = .936$, $TLI = .957$, $RMSEA = .061$. These indices are sufficient and within the recommended level.

Figure 3.7: CFA for corporate reputation

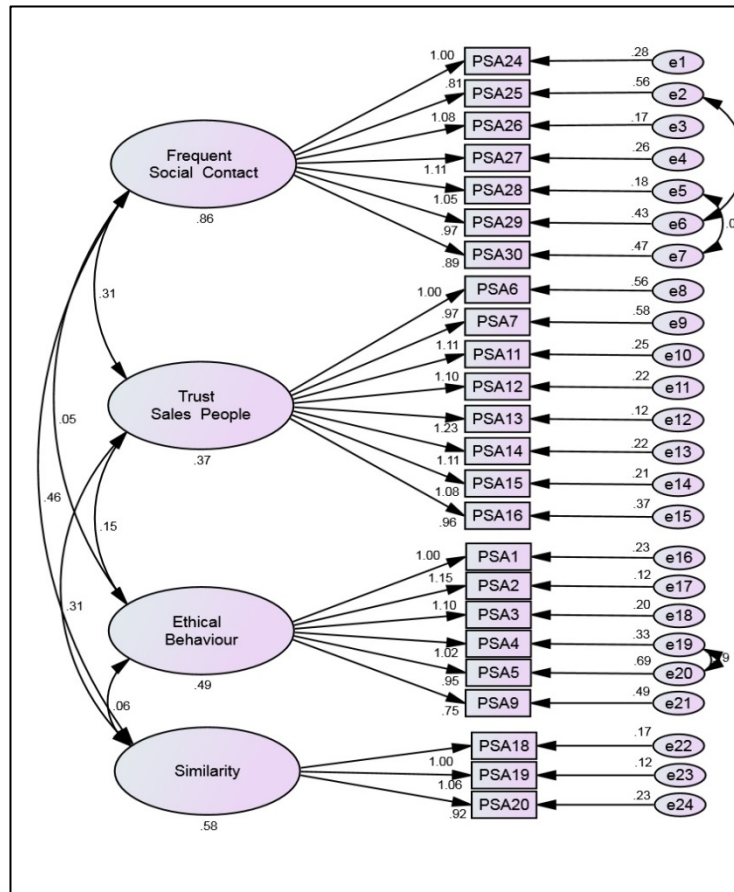


Chi-square=285.865, p-value=.000, Cmin/df=2.216, GFI=.910, AGFI=.881, CFI=.963, NFI=.936, TLI=.957, RMSEA=.061

Pharmaceutical sales representatives consists of 30 items, but six of them (PSA8, PSA10, PSA17, PSA21, PSA22 and PSA23) are eliminated in EFA. This construct is presented with five factors in the literature, namely it was planned with 5 dimensions as trust to sales people, ethical behavior, likeability, similarity and frequent social contact. But in the current study it is described with four factors in the CFA. So, as presented in Figure 3.8., pharmaceutical sales representatives has four factors which are called frequent social contact, trust to sales people, ethical behavior and similarity. Likeability dimension is eliminated. All items are statistically significant ($p < 0.001$) and loaded on these factors. However, the chi-square goodness-of-fit is statistically not significant ($p = .000$). The other goodness-of-fit are: Cmin/df=2.570, GFI=.858, AGFI=.825,

CFI=.941, NFI=.907, TLI=.933, RMSEA=.069. These indices are sufficient and within the recommended level.

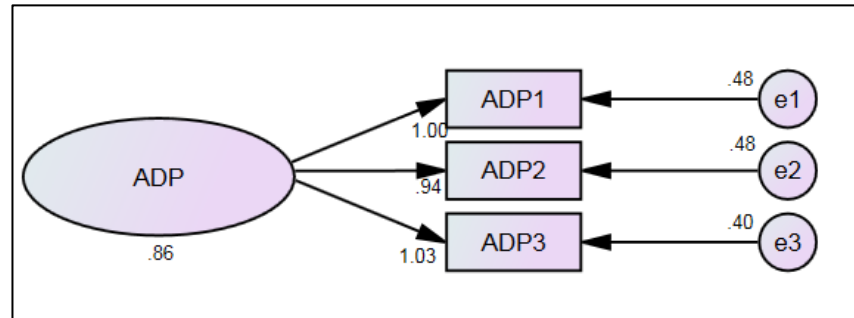
Figure 3.8: CFA for Pharmaceutical sales representatives



Chi-square=91.969, p-value=.000, Cmin/df=3.171, GFI=.948, AGFI=.901, CFI=.972, NFI=.961, TLI=.957, RMSEA=.081

In this study, advertising promotion previously consists of five items and but two of them are eliminated in EFA. Figure 3.9 shows that all items are statistically significant ($p < 0.001$) and loaded on this factor. Although the chi-square goodness-of-fit is statistically not significant ($p = .006$), the other goodness-of-fit indices show that the data fits well: Cmin/df=3.630, GFI=1.000, AGFI=.937, CFI=1.000, NFI=1.000, TLI=.963, RMSEA=.064. These indices are sufficient and within the recommended level.

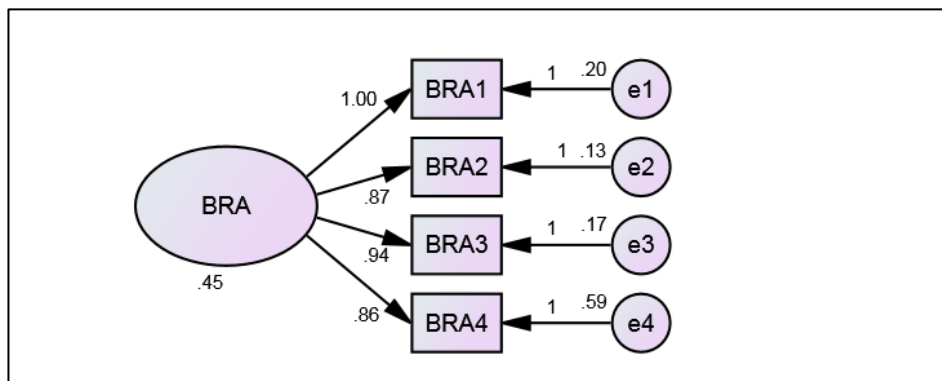
Figure 3.9: CFA for advertising promotion



Chi-square=14.522, p-value=.006, Cmin/df=3.630, GFI=1.000, AGFI=.937, CFI=1.000, NFI=1.000, TLI=.963, RMSEA=.064

As explained in the previous section, brand awareness construct consists of five items and just one of them (BRA5) is eliminated in EFA. Figure 3.10 shows us that all items are statistically significant ($p < 0.001$) and loaded on this factor. The chi-square goodness-of-fit is statistically significant ($p = .488$). Other goodness-of-fit indices are: Cmin/df=0.716, GFI=.998, AGFI=.989, CFI=1.000, NFI=.998, TLI=1.003, RMSEA=.000. These indices are sufficient enough and within the recommended level of 'good' fit.

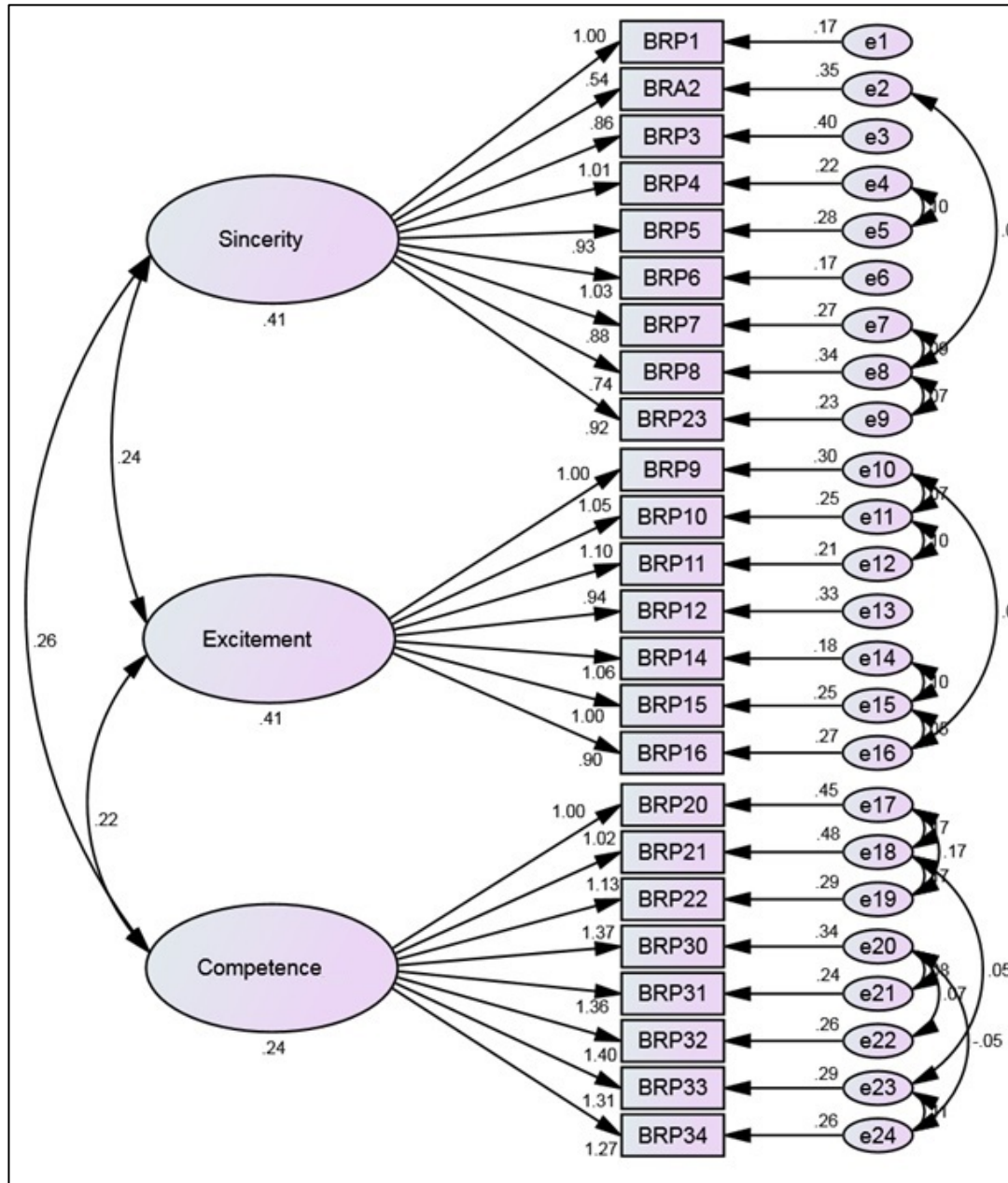
Figure 3.10: CFA for brand awareness



Chi-square=1.433, p-value=.488, Cmin/df=0.716, GFI=.998, AGFI=.989, CFI=1.000, NFI=.998, TLI=1.003, RMSEA=.000

Brand personality consists of 41 items, but seventeen of them (BRP13, BRP17, BRP18, BRP19, BRP24, BRP25, BRP26, BRP27, BRP28, BRP29, BRP35, BRP36, BRP37, BRP38, BRP39, BRP40 and BRP41) are eliminated in EFA. This construct is presented with five factors in the literature, but in the current study it is described with four factors in the CFA. So, as presented in Figure 3.11, brand personality has four factors which are called sincerity, excitement, competence and ruggedness. As a result, sophistication item is extracted from the scale. All items are statistically significant ($p < 0.001$) and loaded on these factors. However, the chi-square goodness-of-fit is statistically not significant ($p = .000$). The other goodness-of-fit are: $Cmin/df = 2.857$, $GFI = .859$, $AGFI = .817$, $CFI = .928$, $NFI = .895$, $TLI = .915$, $RMSEA = .075$. These indices are sufficient and within the recommended level.

Figure 3.11: CFA for brand personality

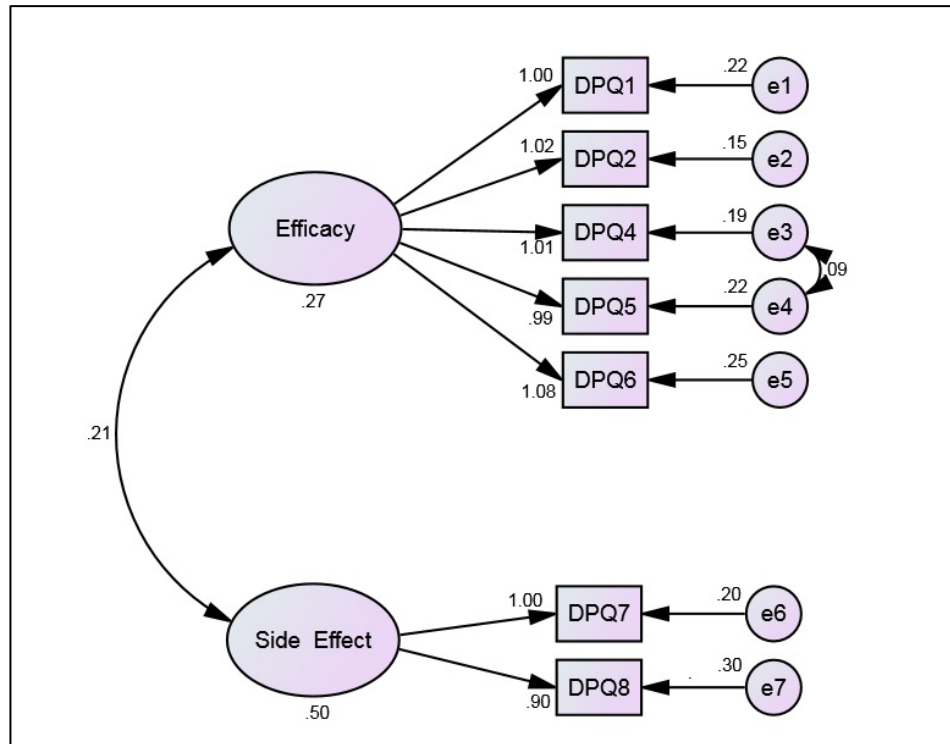


Chi-square=662.860, p-value=.000, Cmin/df=2.857, GFI=.859, AGFI=.817, CFI=0.928, NFI=.895, TLI=.915, RMSEA=.075

Drug perceived quality consists of 11 items, but four of them (DPQ3, DPQ9, DPQ10 and DPQ11) are eliminated in EFA. This construct is presented with just one factor in the literature, but in the current study it described with two factors in the CFA. So, as presented in Figure 3.12, drug perceived has two factors which are called efficiency and

side effect. All items are statistically significant ($p < 0.001$) and loaded on these factors. However, as in the case of advertising promotion, the chi-square goodness-of-fit is statistically not significant ($p = .000$). The other goodness-of-fit are: Cmin/df=2.963, GFI=.971, AGFI=.931, CFI=.979, NFI=.969, TLI=.963, RMSEA=.077. These indices are sufficient and within the recommended level.

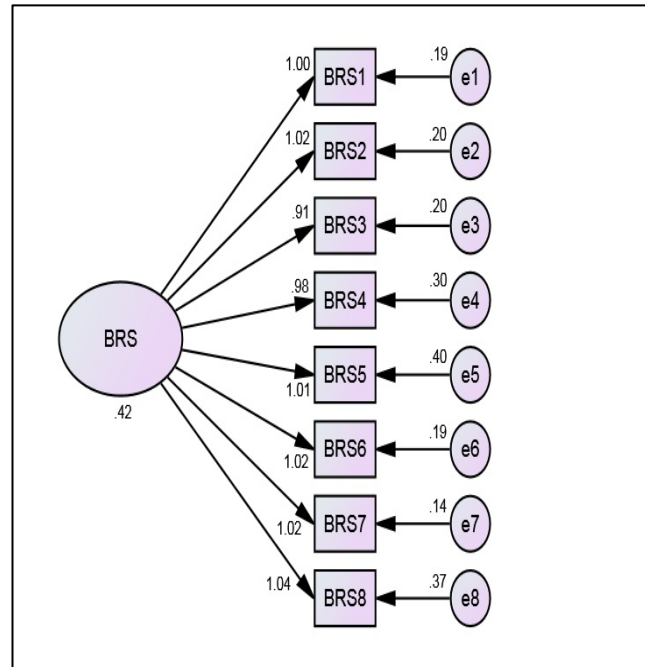
Figure 3.12: CFA for drug perceived quality



Chi-square=35.552, p-value=.000, Cmin/df=2.963, GFI=.971, AGFI=.931, CFI=0.979, NFI=.969, TLI=.963, RMSEA=.077

As mentioned in the previous section, brand satisfaction consists of eight items and none of them are eliminated in EFA. Figure 3.13 shows us that all items are statistically significant ($p < 0.001$) and loaded on this factor. Although the chi-square goodness-of-fit is statistically not significant ($p = .000$), the other goodness-of-fit indices show that the data fits well: Cmin/df=3.191, GFI=.955, AGFI=.919, CFI=.976, NFI=.966, TLI=.967, RMSEA=.081. These indices are sufficient and within the recommended level.

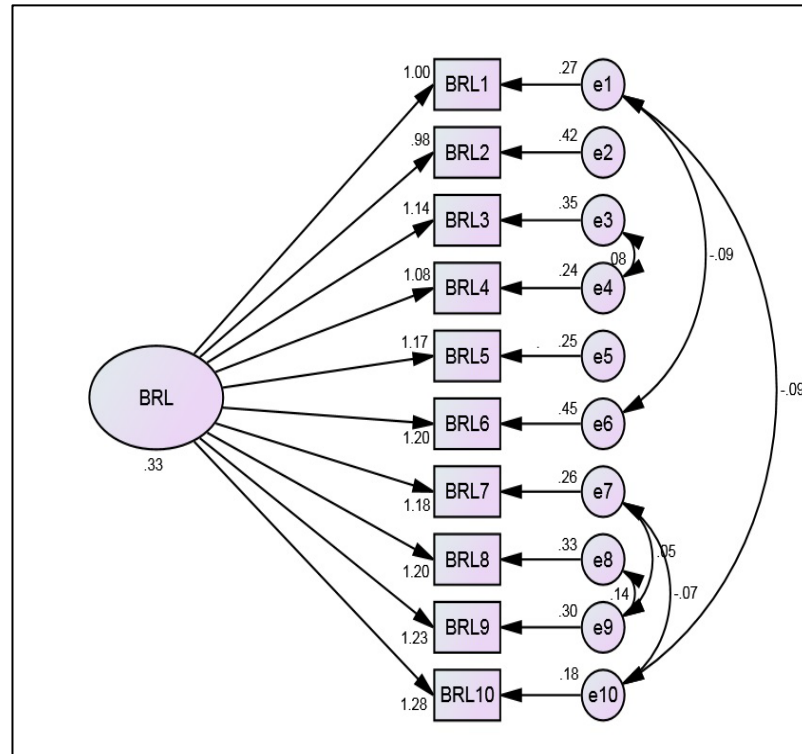
Figure 3.13: CFA for brand satisfaction



Chi-square=63.825,p-value=.000,Cmin/df=3.191,GFI=.955,
AGFI=.919, CFI=.976, NFI=.966, TLI=.967, RMSEA=.081

Brand loyalty consists of 10 items and none of them are eliminated in EFA. Figure 3.14 shows us that all items are statistically significant ($p < 0.001$) and loaded on this factor. Although the chi-square goodness-of-fit is statistically not significant ($p = .000$), the other goodness-of-fit indices show that the data fits well: Cmin/df=3.171, GFI=.948, AGFI=.901, CFI=.972, NFI=.961, TLI=.957, RMSEA=.081. These indices are sufficient and within the recommended level.

Figure 3.14: CFA for brand loyalty



Chi-square=91.969, p-value=.000, Cmin/df=3.171, GFI=.948, AGFI=.901, CFI=.972, NFI=.961, TLI=.957, RMSEA=.081

The summary of the CFA results of the constructs used for fans in Turkey is presented in Table 3.33. All of the eight constructs have satisfactory goodness-of-fit indices. CMI/df values are less than 5. All GFI, CFI, NFI, and TLI values are greater than .90 which is the baseline for an acceptable fit. All AGFI values are greater than .85 which is also the level for an acceptable level of fit. However, while the chi-square goodness-of-fit for fandom, behavioral loyalty to club, behavioral loyalty to team, conative loyalty, and nationalism are not statistically significant, it is statistically significant for motivation, identification, and attitudinal loyalty constructs which have a p-value of .000.

Table 3.33: Summary of CFA

	COR	PSR	ADP	BRA	BRP	DPQ	BRS	BRL
Probability Level	0.000	0.000	0.006	0.488	0.000	0.000	0.000	0.000
CMI/df	2.216	2.570	3.630	0.716	2.857	2.963	3.191	3.171
GFI	0.910	0.858	1.000	0.998	0.859	0.971	0.955	0.948
AGFI	0.881	0.825	0.937	0.989	0.817	0.931	0.919	0.901
CFI	0.963	0.941	1.000	1.000	0.928	0.979	0.976	0.972
NFI	0.936	0.907	1.000	0.998	0.985	0.969	0.966	0.961
TLI	0.957	0.933	0.963	1.003	0.915	0.963	0.967	0.957
RMSEA	0.061	0.069	0.064	0.000	0.075	0.077	0.081	0.081

3.4.2.7 SEM and path analysis

Path analysis concept defined in methodology section 3.3.5.5. It is a general approach to estimate relationships in a SEM model. Its major aim is to determine the strength of the paths shown in the path diagrams. Path analysis uses simple bivariate correlations to estimate the relationships in a system of structural equations (Hair et al. 2006). In this study, path analysis with latent variables has been done to test the model. There are different constructs and each constructs have various sub-constructs. For instance, company linked factors have three dimensions as corporate reputation, PSR and advertising promotion in this model. Additionally, corporate reputation has two sub-dimensions as managerial competence and trustworthiness. For each construct, CFA has been done previously and validated constructs are used in the model. For the first stage, proposed model is tested and analyzed. The path diagram is shown in figure 3.15. According to statistical analysis, the chi-square goodness-of-fit is statistically significant ($p=.000$). Other goodness-of-fit indices are: Cmin/df=3.325, GFI=.82794, AGFI=.789, CFI=.900, NFI=.864, TLI=.887, RMSEA=.084 (Table 3.17). It can be concluded that this model is adequate with these indices. GFI is below the recommended level but it is not the only one index to reject the model according to some researchers (Marsh et al. 1996). Also, RMSEA value indicates that this model needs some adjustments and improvements. However, there is no consensus on which fit indices represent the best model for testing the structural equation model in the literature (Hair et al. 2006).

Figure 3.15 Proposed SEM Model

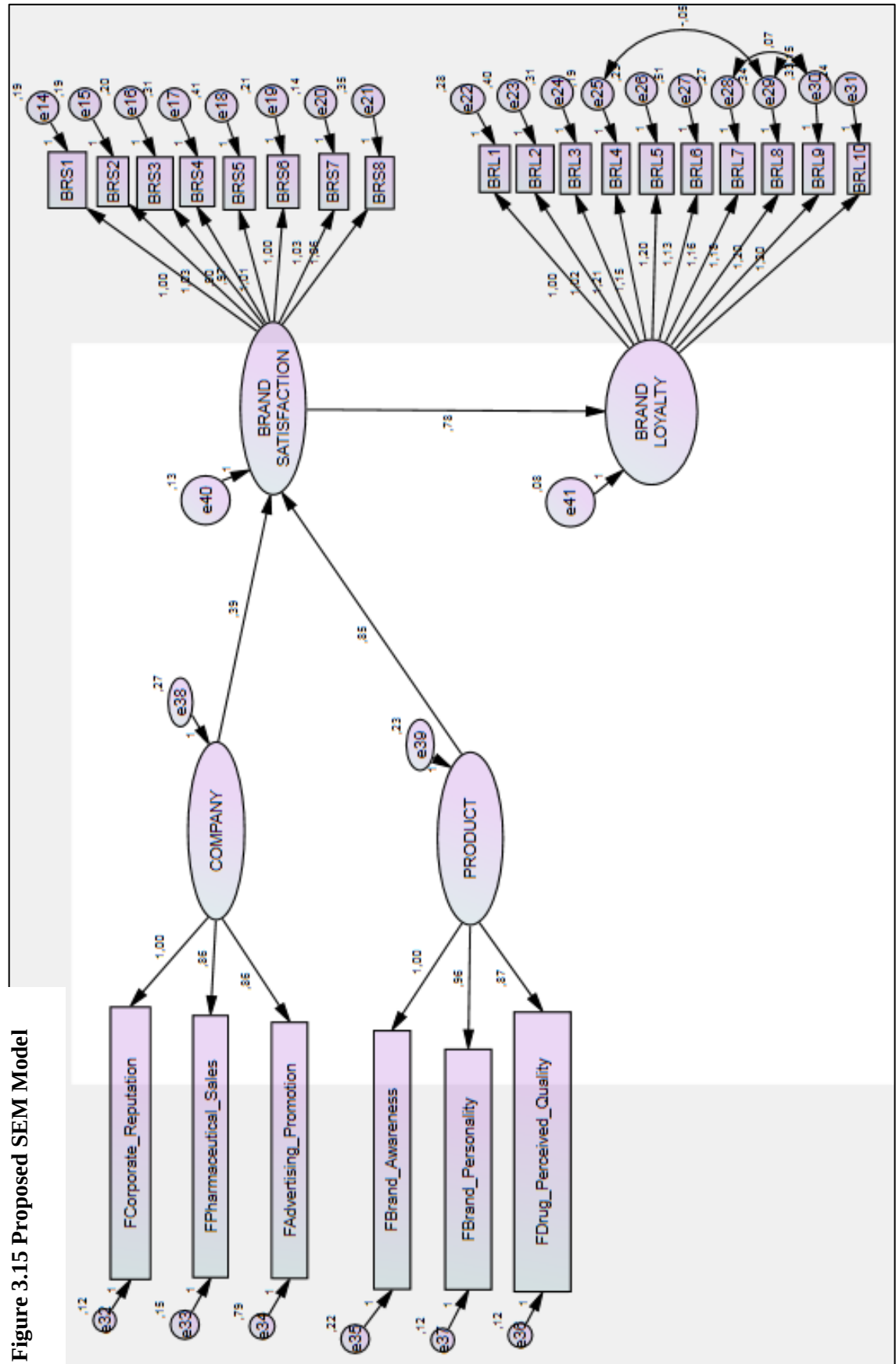


Table 3.34: Summary of proposed model relations

			Estimate	S.E.	C.R.	P
BRAND SATISFACTION	←	PRODUCT FACTORS	,852	,084	10,164	***
BRAND SATISFACTION	←	COMPANY FACTOR	,391	,060	6,478	***
BRAND LOYALTY	←	BRAND SATISFACTION	,775	,062	12,489	***

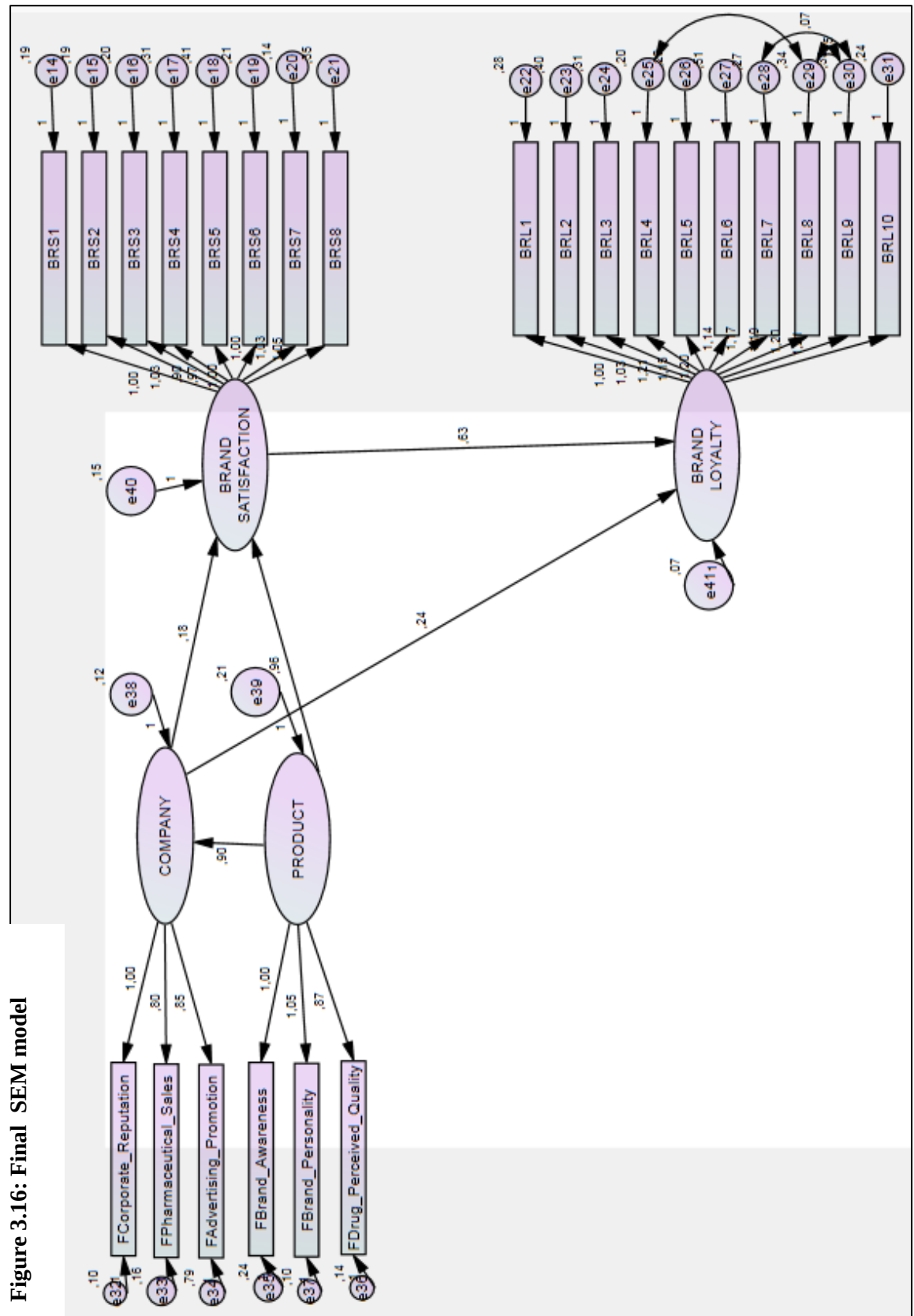
At this point, researcher can make a decision and present the model fit indices which have the best fit among the different recommended indices. For instance some researchers recommend that CFI and RMSEA will often provide sufficient information to evaluate a model. On the other hand, the pursuit of better fit at the expense of testing a true model is not a good way. So, the researcher should be sure that all model specifications should be done to best approximate the theory to be tested (Hair et al. 2006) This comment also indicates that SEM analysis's complex structure and why different comments have been made for which index group should be chosen to test the model. In this model, company linked factors and product linked factors relation on brand satisfaction and brand satisfaction relation to brand loyalty is significant which are summarized in table 3.34. This result also supports the model and constructed relations. As summarized in Table 3.34, regarding direct relationship between product factors such as brand awareness, brand personality and drug perceived quality was found to be a predictor of brand satisfaction which is statistically significant. Also product linked factors on brand satisfaction relations was found statistically significant.

Table 3.35 Model fit indicators for the proposed model

Model Fit Indicators	χ^2	df	CMIN/df	RMSEA	GFI	NFI	CFI	AGFI	TLI
	817.964	246	3.325	0.084	0.827	0.863	0.900	0.789	0.887
χ^2 - Chi-square; df - Degrees of freedom; CMIN/df - Chi-square divided by degrees of freedom; RMSEA - Root mean square of approximation; GFI - Goodness-of-fit index; NFI - Normated -fit index; CFI - Comparative-fit index; AGFI - Adjusted goodness-of-fit index; SMC - Squared multiple correlation; TLI - Tucker-Lewis index									

Model fit : CMIN/df <0.5; RMSEA >0.08; NFI, CFI, GFI, AGFI, TLI =<0.90

Figure 3.16: Final SEM model



As it was emphasized in the literature section, before creating the model of the study, more than hundred literatures have been researched and model of the study is created according to these literatures' suggestion and results. Also face validity is obtained with the in depth interviews. Generally corporate reputation, PSR, advertising and quality of the products have been tested and researched in the literature. Brand personality and also sub dimensions of PSR construct have not been researched and tested according to literature research. So this situation directed to test different relations and try to create a various SEM models.

As a result; the proposed model could be accepted and not rejected but due to some poor model fit indices and modification suggestions in the AMOS, different variations have been tested and results are analyzed. Therefore, it would be much better to create a new model but a model, which keeps the basic dimensions and relations in the proposed model. In the final model, product linked factors have significance relation with company linked factors. As emphasized in the literature, especially perceived product quality has major role on perception of corporate reputation and impact the perception of reputation (Grunwald et al. 2010). Additionally it has been observed that direct relations from company linked factors to brand loyalty increase the model's acceptable fit indices. As a result, with revised SEM analysis, model showed more acceptable results as summarized in table 3.36. Final SEM model is presented in figure 3.16 and relation significances showed in table 3.37.

Table 3.36 Model fit indicators for the final model

Model Fit Indicators	χ^2	df	CMIN/df	RMSEA	GFI	NFI	CFI	AGFI	TLI
	638.485	244	2,617.	0.070	0.844	0.903	0.931	0.809	0.922
χ^2 - Chi-square; df - Degrees of freedom; CMIN/df - Chi-square divided by degrees of freedom; RMSEA - Root mean square of approximation; GFI - Goodness-of-fit index; NFI - Normated -fit index; CFI - Comparative-fit index; AGFI - Adjusted goodness-of-fit index; SMC - Squared multiple correlation; TLI - Tucker-Lewis index									

Model fit : CMIN/df <0.3; RMSEA <0.08; NFI, CFI, TLI >0.90; GFI,AGFI <0,90

According to final model results, only GFI value is slightly lower than the recommended level. As emphasized previously, there are different recommendations about the model fit indices. Some authors suggest that presenting three fit indices which are also above the recommendations enough to not reject the model. For instance, according to Diamantopolous and Siguaw (2000), RMSEA become regarded as one of the most informative fit indices due to its sensitivity to the number of estimated parameters in the model. It has been suggested that RMSEA value below 0.80 shows a good fit. In the final model it is 0, 70 which was 0, 84 in proposed model. For NFI value it has been suggested that above 0, 90 is enough and in our final model it is 0,903 which was 0,863 in proposed model. CFI value is 0,931 which indicate good fit according to recommendations (Hu and Bentler, 1999). In today's statistical researches, CFI index is generally used in all SEM studies and this index became one of the most important and commonly reported fit indices due to less effect of sample size on the outcome (Fan et al. 1999). In the final model GFI value is 0,844 and it is under cut off point which is 0, 90. But, various studies such as Chang et al. (2005); Hu et al. (1999), Segars and Grover (1993), have GFI value which is lower than 0.80. Additionally, due to sensitivity of this fit index, today it is less popular in the literature and it is not recommended to use (Sharma et al, 2005). On the other hand, some authors suggest that fit indices are developing area and it is normal to have below levels if the tested model is a new area and not tested previously. For instance, cut off point for GFI is 0, 90 but 0, 85 is also acceptable if model is new and not tested previously (Ayyıldız, 2006). In our model RMSEA, cmin/df, NFI, CLI and TLI are above the recommended levels. Overall this model is reasonable to not reject the model.

Table 3.37 summarizes the relations of latent variables in the model. As shown in the table, product linked factors relation to company linked factor relation is statistically significant which was not presented in the proposed model. Product linked factor relation to brand satisfaction is also found statistically significant as like in the proposed model. Recently, in the proposed model company linked factor only directed to brand satisfaction but in the final model company linked factors directed to brand loyalty and brand satisfaction and both of the relations are found statistically significant as presented in table 3.37.

Table 3.37: Summary of proposed model relations

			Estimate	S.E.	C.R.	P	Label
Company	←	Product	,899	,085	10,569	***	
Brand_ Satisfaction	←	Product	,960	,142	6,758	***	
Brand_ Satisfaction	←	Company	,180	,108	1,671	***	
Brand_Loyalty	←	Brand_ Satisfaction	,628	,058	10,780	***	
Brand_Loyalty	←	Company	,242	,058	4,190	***	

Table 3.38 compares the proposed model and final model fit indices. All values are improved and reached levels that are more meaningful after the modification of model. Especially RMSEA value which is also recommended as one of the most informative fit indices reached the good model fit cut off point (Diamantopolous and Siguaw, 2000)

Table 3.38: Comparison of proposed model and final model

Fit indices	Proposed Model	Final Model
χ^2	817,964	638,485
df	246	244
CMIN/df	3,325	2,617
RMSEA	0,084	0,070
GFI	0,827	0,844
NFI	0,863	0,903
CFI	0,900	0,931
AGFI	0,789	0,809
TLI	0,887	0,922

3.4.2.8 Correlation analysis

Correlation analysis is used to understand the relationship between two continuous variables (Hair et al. 2006). For this reason, to understand the relations between variables and to understand the strength of this relation, analysis has been done and Pearson's correlation coefficient is calculated as summarized in table 3.35.

In the table 3.35, Pearson correlation shows the coefficient of calculated correlations and the strength of the relationship, sig. (2-tailed) is the p-value which shows the statistical outcome significance and N shows the number of the total calculation. If the p value is below the 0.05, it indicates that two variables have significantly meaningful relations (Hair et al. 2006). According to calculations, each construct in the study have significantly meaningful relations. It means that corporate reputation and its sub dimensions managerial competence and trustworthiness, PSR and its sub dimensions frequent social contact, trust to sales people, ethical behavior an similarity, advertising/promotion, brand awareness, brand personality and its sub dimensions sincerity, excitement and competence, drug perceived quality and its sub dimensions efficacy and side effect have significantly meaningful relations with brand satisfaction and brand loyalty. Calculations shows that competence which is a sub dimension of brand personality factor has the highest relation ($r=0.614$) with brand satisfaction while frequent social contact has the lowest relation ($r=0.289$) with brand satisfaction. For the other dimensions, corporate reputation dimension has the highest relation ($r=594$) with brand loyalty while ethical behavior has the lowest relation ($r=251$) with brand loyalty.

Table 3.39: Correlation analysis

Correlations		Brand_Satisfaction	Brand_Loyalty
Corporate_Reputation	Pearson Correlation	.571(**)	.594(**)
	Sig. (2-tailed)	0,000	0,000
	N	331	331
Managerial_Competency	Pearson Correlation	.541(**)	.565(**)
	Sig. (2-tailed)	0,000	0,000
	N	331	331
Trustworthiness	Pearson Correlation	.535(**)	.556(**)
	Sig. (2-tailed)	0,000	0,000
	N	331	331
Pharmaceutical_Sales	Pearson Correlation	.483(**)	.503(**)
	Sig. (2-tailed)	0,000	0,000
	N	331	331
Frequent_social_contact	Pearson Correlation	.289(**)	.351(**)
	Sig. (2-tailed)	0,000	0,000
	N	331	331
Trust_sales_people	Pearson Correlation	.467(**)	.474(**)
	Sig. (2-tailed)	0,000	0,000
	N	331	331
Ethical_Behaviour	Pearson Correlation	.313(**)	.251(**)
	Sig. (2-tailed)	0,000	0,000
	N	331	331
Similarity	Pearson Correlation	.404(**)	.450(**)
	Sig. (2-tailed)	0,000	0,000
	N	331	331
Advertising_Promotion	Pearson Correlation	.258(**)	.328(**)
	Sig. (2-tailed)	0,000	0,000
	N	331	331
Brand_Awareness	Pearson Correlation	.577(**)	.478(**)
	Sig. (2-tailed)	0,000	0,000
	N	331	331
Brand_Personality	Pearson Correlation	.614(**)	.575(**)
	Sig. (2-tailed)	0,000	0,000
	N	331	331
Sincerity	Pearson Correlation	.558(**)	.535(**)
	Sig. (2-tailed)	0,000	0,000
	N	331	331
Excitement	Pearson Correlation	.462(**)	.444(**)
	Sig. (2-tailed)	0,000	0,000
	N	331	331
Competence	Pearson Correlation	.595(**)	.534(**)
	Sig. (2-tailed)	0,000	0,000
	N	331	331
Drug_Perceived_Quality	Pearson Correlation	.578(**)	.506(**)
	Sig. (2-tailed)	0,000	0,000
	N	331	331
Efficiency	Pearson Correlation	.560(**)	.500(**)
	Sig. (2-tailed)	0,000	0,000
	N	331	331
Side_Effect	Pearson Correlation	.396(**)	.329(**)
	Sig. (2-tailed)	0,000	0,000
	N	331	331
Brand_Satisfaction	Pearson Correlation	1	.799(**)
	Sig. (2-tailed)		0,000
	N	331	331
Brand_Loyalty	Pearson Correlation	.799(**)	1
	Sig. (2-tailed)	0,000	
	N	331	331
**. Correlation is significant at the 0.01 level (2-tailed).			
*. Correlation is significant at the 0.05 level (2-tailed).			

3.4.2.9 Regression analysis results

After the SEM analysis, to understand the impacts of factors on prescription behavior which are approved by the path analysis, multiple regressions has been applied to test the hypothesis due to complexity of research model. It has been suggested in literatures when the number of factors is larger than six, sample size requirements may exceed 500 for SEM analysis (Hair et al, p. 742). In this model sample size is 331 and factors are larger than six. For this reason, sub dimensions impact on prescription behavior such as managerial competence, sincerity and similarity has been measured by multiple regression technique. As emphasized in the section 3.4.2.5, constructs of these dimensions such as company linked factors and product linked factors impact on brand satisfaction and brand personality have been found statistically found meaningful. Finally enter method is implied in multiple regression analysis.

3.4.2.9.1 Company linked factor relations with brand satisfaction

In this section, company linked factors and brand satisfaction relations are investigated. As mentioned in the previous chapters, company linked factors have three dimensions and these dimensions have various sub dimensions. Corporate reputation has two dimensions such as managerial competence and trustworthiness. PSR has four dimensions such as similarity, frequent social contact, ethical behavior and trust to PSR. Finally advertising and promotion dimesion is a part of corporate reputation but it has not sub dimension.

To predict the relation between company linked factors and brand satisfaction, a multiple regression analysis was conducted to evaluate VO_2 max from managerial competency, trustworthiness, trust to sales people, ethical behavior, frequent social contact, similarity and advertising/promotion. Among the seven variables, four variables added statistically significantly to the prediction $p < 0,05$. Managerial competency, trustworthiness, ethical behavior and similarity significantly predicted VO_2 max $F(4,326)=49.835$, $P < ,0005$. R square value is 0.37 (table 3.40) and it means that company linked factors explain 37% of brand satisfaction. According to results, it can be concluded that final model (0,000) is statistically meaningful.

Table 3.40: Regression analysis of company linked factors and brand satisfaction

	R	R Square	Adjusted R Square	Sum of Squares	Df	Mean Square	F	P
Regression	0.616	0.379	0.372	56.641	4	14.160	49.835	.000(a)
Residual				92.631	326	0.284		
Total				149.272	330			

In table 3.40, company linked factors' sub-dimensions and brand satisfaction relation is presented. It has been observed that brand satisfaction is impacted by managerial competency, trustworthiness, ethical behavior and similarity.

Table 3.41: Company linked factors and brand satisfaction regression coefficients

	B	Std. B	Std. Error	t	P
(Constant)	0.963	-	0.197	4.882	0.000
Managerial_Competency	0.276	0.255	0.078	3.521	0.000
Trustworthiness	0.211	0.224	0.067	3.150	0.002
Ethical_Behaviour	0.180	0.200	0.040	4.482	0.000
Similarity	0.124	0.146	0.043	2.854	0.005
Dependent Variable: Brand_Satisfaction					

As a result, hypothesis for advertising and promotion, trust to sales people and frequent social contact are rejected and managerial competency, trustworthiness, ethical behavior and similarity are not rejected. Hypothesis and results are summarized in table 3.42.

Table 3.42: Hypothesis list for company linked factors on brand satisfaction

Hypothesis	Status
H ₁ : Managerial competence has an impact on physicians' brand satisfaction	Supported
H ₂ : Trustworthiness has an impact on physicians' brand satisfaction	Supported
H ₅ : Sales Representatives' ethical behavior has an impact on physicians' brand satisfaction	Supported

H ₆ : Trust to Sales Representatives has an impact on brand satisfaction	Not supported
H ₇ : Sales Representatives' similarity has an impact on physicians' brand satisfaction	Supported
H ₈ : Frequent contact with Sales Representatives has an impact on physicians' brand satisfaction	Not supported
H ₁₃ : Advertising/promotion activities and tangible rewards has impact on physicians' brand satisfaction	Not supported

3.4.2.9.2 Company linked factor relations with brand loyalty

In proposed model, company linked factor and brand loyalty has no relation. After the modification in the model, it has been observed that company linked factors have relation with brand loyalty. Therefore, model is revised and reached more meaningful statistical data as a result of modifications. As detailed in the previous chapters, corporate reputation has two dimensions such as managerial competence and trustworthiness. PSR has four dimensions such as similarity, frequent social contact, ethical behavior and trust to PSR. And the final dimension advertising and promotion has no sub-dimension.

To predict the relations between company linked factors and brand loyalty, a multiple regression analysis was conducted to evaluate VO₂ max from managerial competency, trustworthiness, trust to sales people, ethical behavior, frequent social contact, similarity and advertising/promotion. Among the seven variables, five variables added statistically significantly to the prediction $p < 0,05$. Managerial competency, trustworthiness, ethical behavior, similarity and advertising/promotion significantly predicted VO₂ max $F(5,325)=44.142$, $P < ,0005$. R square value is 0.41 (table 3.43) and it means that company linked factors explain 41% of brand loyalty. According to results, it can be concluded that final model (0,000) is statistically meaningful.

Table 3.43: Regression analysis of company linked factors and brand loyalty

	R	R Square	Adjusted R Square	Sum of Squares	Df	Mean Square	F	P
Regression	0.636	0.410	0.401	62.469	5	12.494	44.142	.000(a)
Residual				91.887	325	0.283		
Total				154.406	330			

In table 3.44, company linked factors' sub-dimensions and brand satisfaction relation is presented. It has been observed that brand satisfaction is impacted by managerial competency, trustworthiness, ethical behavior, similarity, advertising, and promotion.

Table 3.44: Company linked factors and brand loyalty regression coefficients

	B	Std. B	Std. Error	t	P
(Constant)	0,747		0,199	3,748	0,000
Managerial_Competency	0,275	0,250	0,078	3,510	0,001
Trustworthiness	0,206	0,215	0,067	3,056	0,002
Ethical_Behaviour	0,123	0,135	0,040	3,060	0,002
Similarity	0,150	0,173	0,044	3,389	0,001
Advertising_Promotion	0,067	0,097	0,032	2,063	0,040
Dependent Variable: Brand_Loyalty					

As a result, hypothesis for trust to sales people and frequent social contact are rejected and managerial competency, trustworthiness, ethical behavior, advertising and promotion and similarity are not rejected. Hypothesis and results are summarized in table 3.45.

Table 3.45: Hypothesis list for company linked factors on brand loyalty

Hypothesis	Status
H ₃ : Managerial competence has an impact on physicians' brand loyalty	Supported
H ₄ : Trustworthiness has an impact on physicians' brand loyalty	Supported
H ₉ : Sales Representatives' ethical behavior has impact on physicians' brand loyalty	Supported
H ₁₀ : Trust to Sales Representatives has an impact on brand loyalty	Not supported
H ₁₁ : Sales Representatives' similarity has an impact on physicians' brand loyalty	Supported
H ₁₂ : Frequent contact with Sales Representatives has an impact on physicians' brand loyalty	Not supported
H ₁₄ : Advertising/promotion activities and tangible rewards has impact on physicians' brand loyalty	Supported

3.4.2.9.3 Product linked factor relations with brand satisfaction

In this section, product linked factors and brand satisfaction relations are investigated. As mentioned in the previous chapters, product linked factors have three dimensions and these dimensions have various sub dimensions. Brand awareness has not sub-dimensions. Brand personality has three dimensions such as competence, sincerity and excitement. And the final dimension perceived quality has two dimensions such as efficacy and side effect.

To predict the relations between product linked factors and brand satisfaction, a multiple regression analysis was conducted to evaluate VO₂ max from managerial brand awareness, sincerity, competence, excitement, efficacy and side effect. Among the six variables, five variables added statistically significantly to the prediction $p < 0,05$. Managerial competency, trustworthiness, ethical behavior, similarity and advertising/promotion significantly predicted VO₂ max $F(5,325)=64.081$, $P < ,0005$. R

square value is 0.49 (table 3.46) and it means that company linked factors explain 49% of brand satisfaction. According to results, it can be concluded that final model (0,000) is statistically meaningful.

Table 3.46: Regression analysis of product linked factors and brand satisfaction

	R	R Square	Adjusted R Square	Sum of Squares	Df	Mean Square	F	P
Regression	0.705	0.496	0.489	74.105	5	14.821	64.081	.000(a)
Residual				75.167	325	0.231		
Total				154.406	330			

In table 3.47, product linked factors' sub-dimensions and brand satisfaction relation is presented. It has been observed that brand satisfaction is impacted by brand awareness, competence and excitement which are sub-dimension of brand personality, side effect and efficacy of product which are also sub-dimension of perceived product.

Table 3.47: Product linked factors and brand satisfaction regression coefficients

	B	Std. B	Std. Error	t	P
(Constant)	0,137		0,202	0,675	0,500
Brand Awareness	0,282	0,282	0,050	5,618	0,000
Excitement	0,106	0,109	0,053	2,017	0,045
Competence	0,216	0,211	0,064	3,386	0,001
Efficacy	0,259	0,220	0,061	4,265	0,000
Side_Effect	0,078	0,088	0,041	1,917	0,043
Dependent Variable: Brand_Satisfaction					

As a result, hypothesis for trust to sales people and frequent social contact are rejected and managerial competency, trustworthiness, ethical behavior, advertising and promotion and similarity are not rejected. Hypothesis and results are summarized in table 3.48.

Table 3.48: Hypothesis List for Company Linked Factors on brand satisfaction

Hypothesis	Status
H ₁₅ : Drugs' personality attribute of sincerity has an impact on physicians' brand satisfaction	Not Supported
H ₁₆ : Drugs' personality attribute of excitement has impact on brand satisfaction	Supported
H ₁₇ : Drugs' personality attribute of competence has impact on brand satisfaction	Supported
H ₁₈ : Brand awareness has impact on physicians' brand satisfaction	Supported
H ₁₉ : Efficacy level of perceived drug quality has impact on physicians' brand satisfaction	Supported
H ₂₀ : Side effect level of perceived drug has impact on brand satisfaction	Supported

3.4.2.10 Multicollinearity

Multicollinearity is explained in methodology section 3.3.5. For making multicollinearity analysis VIF measure is taken as a reference. The tolerance value of VIF starts from 0.10 and ends up with a value of 10. For a multiple correlation value of 0.90, the tolerance is 0.19 and the VIF value is 5.3 (Hair et al. 2006, p.230).

The VIF values for the different factors are presented in table 3.49. As presented on the tables, the VIF values are between 1 and 3 which are less than 5, the cutoff point.

Table 3.49: VIF and tolerance values

	Brand Satisfaction		Brand Loyalty	
	Tolerance	VIF	Tolerance	VIF
Managerial_Competency	0,363	2,755	0,361	2,768
Trustworthiness	0,378	2,646	0,371	2,693
Ethical_Behaviour	0,951	1,051	0,948	1,054
Similarity	0,726	1,377	0,700	1,428
Advertising_Promotion			0,824	1,214
Brand_Awareness	0,616	1,622		
Excitement	0,535	1,869		
Competence	0,399	2,506		
Efficacy	0,580	1,723		
Side_Effect	0,728	1,374		

3.4.2.11 ANOVA tests for demographic variables

In this section, to understand the differences between different demographic variables one way ANOVA test is applied. The groups which the p value is below 0.05 accepted as statistically different. Namely, there is significant difference among the physicians hypothesis is accepted.

3.4.2.11.1 ANOVA test for specialty

Respondent group is consisted of 331 participants. As presented in profile of respondents table, (table 3.11) main specialties are family practitioners, ENT specialists, pediatricians and general surgeons. These groups are also the most prescriber group of related product according to this research and in depth analysis. Other specialties' details are in table 3.50.

Table 3.50: ANOVA test for speciality

		N	Mean	Std. Deviation	F	Sig.
Brand_Satisfaction	General Practitioner	138	3,65	0,600	0,814	0,517
	General Surgeon	49	3,46	0,756		
	ENT	41	3,54	0,561		
	Pediatric	38	3,58	0,651		
	Other	65	3,57	0,817		
	Total	331	3,59	0,673		
Brand_Loyalty	General Practitioner	138	3,44	0,659	0,493	0,741
	General Surgeon	49	3,29	0,656		
	ENT	41	3,45	0,593		
	Pediatric	38	3,46	0,579		
	Other	65	3,43	0,857		
	Total	331	3,42	0,684		

To understand the relations, one way ANNOVA test is conducted. As summarized in table 3.50, there were no significantly difference as determined by one way ANOVA, for both brand satisfaction ($F(4,326) = 0.814$, $p=0,517$) and brand loyalty ($F(4,326) = 0.493$, ($p=0,741$)). Table 3.51 summarizes the hypothesis results. Both hypotheses are not supported.

Table 3.51: Hypothesis for speciality

Hypothesis	Status
H ₂₁ : There is a significant difference among physicians' brand satisfaction and prescribers' specialty	Not Supported
H ₂₂ : There is a significant difference among physicians' brand loyalty and prescribers' specialty	Not Supported

3.4.2.11.2 ANOVA test types of institutions

In this study, there are more than five types of institutions (table 3.7). For making the right analysis and comparison, types of institution are categorized as regional healthcare center, state hospital and university hospital.

To understand the relations of types of institutions and brand satisfaction and brand loyalty, one way ANNOVA test is conducted. As summarized in table 3.35, there were no significantly difference as determined by one way ANOVA, for both brand satisfaction ($F(2,321) = 1.619$, $p=0,200$) and brand loyalty ($F(2,321) = 0.532$,

p=0,588). Table 3.52 summarizes the hypothesis results. Both hypotheses are not supported.

Table 3.52: ANOVA test for types of institution

		N	Mean	Std. Deviation	F	Sig.
Brand_Satisfaction	Healthcare Center	107	3,64	0,614	1,619	0,200
	State Hospital	59	3,69	0,676		
	University Hospital	158	3,53	0,699		
	Total	324	3,59	0,669		
Brand_Loyalty	Healthcare Center	107	3,40	0,641	0,532	0,588
	State Hospital	59	3,51	0,703		
	University Hospital	158	3,41	0,715		
	Total	324	3,43	0,688		

Table 3.53 summarizes the hypothesis. Both of them are rejected. It means that there is no difference between the types of institutions.

Table 3.53: Hypothesis for types of institutions

Hypothesis	Status
H ₂₇ : There is a significant difference among physicians' brand satisfaction and prescribers' institution	Not Supported
H ₂₈ : There is a significant difference among physicians' brand loyalty and prescribers' institution	Not Supported

3.4.2.11.3 ANOVA test for patient number per day

Daily patient number are categorized as 5 dimensions as summarized in table 3.7. To understand the relations of types of institutions and brand satisfaction and brand loyalty, one way ANNOVA test is conducted. As summarized in table 3.54, there were no significantly difference as determined by one way ANOVA for both brand satisfaction ($F(4,325) = 0,155$, $p=0,961$) and brand loyalty ($F(4,325) = 0,325$, $p=0,861$). Table 3.54 summarizes the hypothesis results. Both hypotheses are not supported

Table 3.54: ANOVA test for patient number per day

		N	Mean	Std. Deviation	F	Sig.
Brand_Satisfaction	0-20	59	3,54	0,810	0,155	0,961
	21-40	102	3,57	0,712		
	41-60	70	3,62	0,556		
	61-80	64	3,59	0,589		
	81-100	30	3,62	0,704		
	Total	325	3,58	0,674		
Brand_Loyalty	0-20	59	3,34	0,818	0,325	0,861
	21-40	102	3,47	0,738		
	41-60	70	3,44	0,578		
	61-80	64	3,41	0,639		
	81-100	30	3,39	0,553		
	Total	325	3,42	0,685		

Table 3.55 summarizes the hypothesis. Both of them are rejected. It means that there is no difference of patient number per day and brand satisfaction and brand loyalty.

Table 3.55: Hypothesis for patient number per day

Hypothesis	Status
H ₂₃ : There is a significant difference among physicians' brand satisfaction and prescribers' patient number per day	Not Supported
H ₂₄ : There is a significant difference among physicians' brand loyalty and prescribers' patient number per day	Not Supported

3.4.2.11.4 ANOVA test for physicians' experience

As summarized in table 3.12, physicians experience is categorized as three dimensions. It is concluded that there is no difference between brand loyalty and experience, however it has been found that there is a significant difference between brand satisfaction and physicians' experience (table 3.56). Results are summarized in table 3.56. As determined by one way ANOVA for both brand loyalty ($F(2,320) = 3.31$, $p=0,037$), there is a significant difference for physicians' experience and brand satisfaction. However, for brand loyalty ($F(2,320) = 1.239$, $p=0,291$) there is no significant difference as p value is below the recommended level.

Table 3.56: ANOVA test for physicians' experience

		N	Mean	Std. Deviation	F	Sig.
Brand_Satisfaction	0-10	133	3,49	0,709	3,321	0,037
	11-20	134	3,62	0,646		
	21-30	56	3,75	0,623		
	Total	323	3,59	0,674		
Brand_Loyalty	0-10	133	3,35	0,655	1,239	0,291
	11-20	134	3,46	0,704		
	21-30	56	3,49	0,713		
	Total	323	3,42	0,687		

To understand which groups have significant differences on brand satisfaction bonferroni analysis are applied which is presented at table 3.57.

Table 3.57: Bonferroni test of physicians' experience

Dependent Variable	(I) experience	(J) experience	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence	
						Upper Bound	Lower Bound
Brand_Satisfaction	0-10	11-20	-0,132	0,082	0,327	-0,33	0,07
		21-30	-.264(*)	0,107	0,041	-0,52	-0,01
	11-20	0-10	0,132	0,082	0,327	-0,07	0,33
		21-30	-0,132	0,106	0,643	-0,39	0,12
	21-30	0-10	.264(*)	0,107	0,041	0,01	0,52
		11-20	0,132	0,106	0,643	-0,12	0,39
Brand_Loyalty	0-10	11-20	-0,111	0,084	0,564	-0,31	0,09
		21-30	-0,142	0,109	0,583	-0,41	0,12
	11-20	0-10	0,111	0,084	0,564	-0,09	0,31
		21-30	-0,031	0,109	1,000	-0,29	0,23
	21-30	0-10	0,142	0,109	0,583	-0,12	0,41
		11-20	0,031	0,109	1,000	-0,23	0,29

According to analysis, the difference between groups 0-10 and 21-30 is significantly different. Additionally it is concluded that group 21-30 has more satisfaction level than 0-10 group. Table 3.58 summarizes the hypothesis. It has been found significant relation between physicians' experience and brand satisfaction

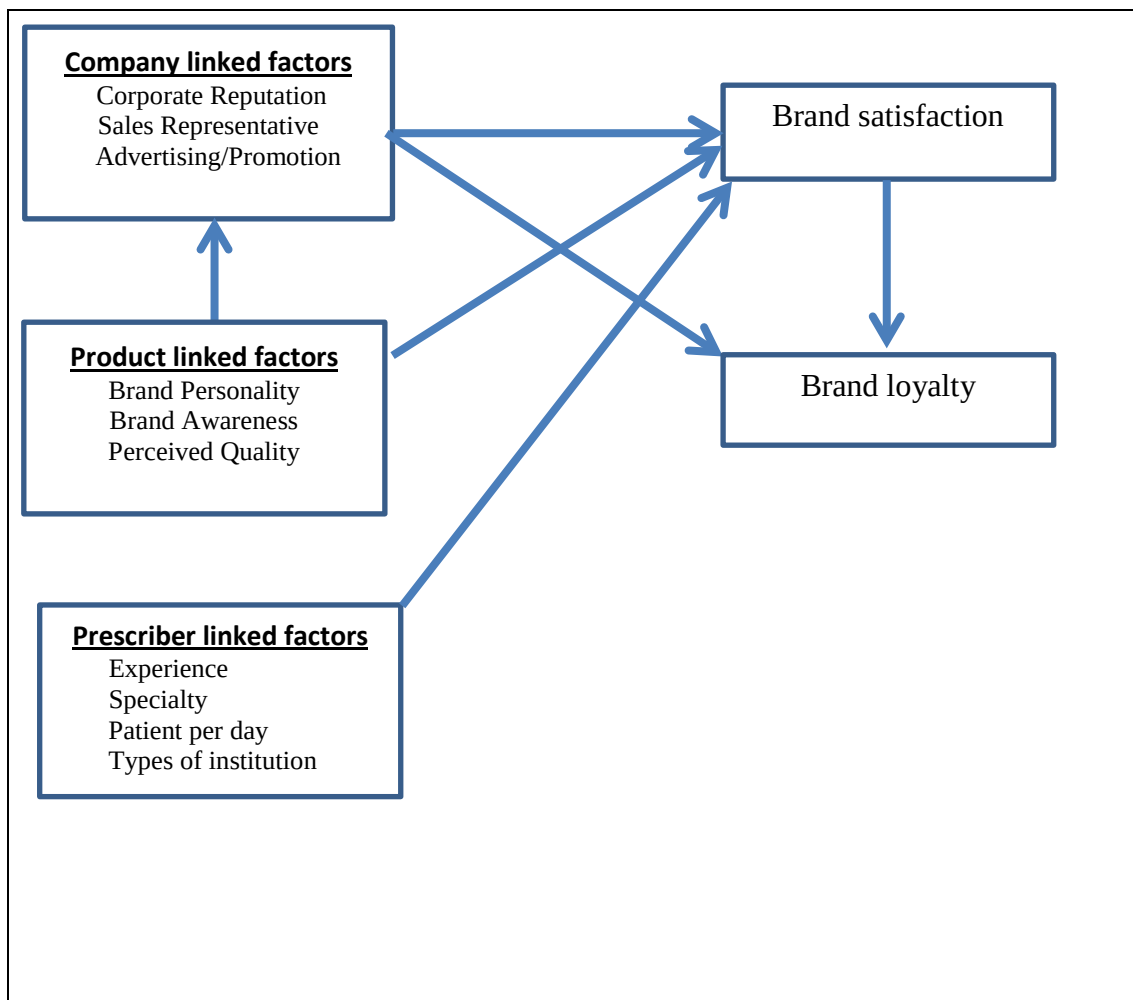
Table 3.58: Hypothesis for prescriber's experience

Hypothesis	Status
H ₂₅ : There is a significant difference among physicians' brand satisfaction and prescribers' experience	Supported
H ₂₆ : There is a significant difference among physicians' brand loyalty and prescribers' experience	Not Supported

3.4.3 Final Model of the Study

As seen in figure 3.17 and also detailed in revised SEM analysis, final model has different relations with dependent variables as compared to proposed model. It has been concluded that, company linked factors have impact on both dependent variables. Product linked factors have only impact on brand satisfaction but some of its dimensions have not statistically meaningful relation with brand satisfaction. Finally, it has been found that product linked factors have statistically meaningful relation with company linked factors. It is the indicator of how reference product awareness in this study is high and impacts the corporate reputation perception.

Figure 3.17: Final Model of the study



4. CONCLUSION

Pharmaceutical industry is one of the most important industries in the world. Especially with its high profit rates as compared to other industries, makes it an attractive area. It is also has the same attractiveness in Turkey with almost 75 million people population. However, due to its compelling regulations such as forbidden marketing activities to direct consumers, pharmaceutical marketing literature is not rich as the other industries such as FMCG industry. At the same time, there are various academic journals, academic researches and studies for the pharmaceutical marketing around the world, but they are very limited in Turkey.

During the dissertation project, to define the scope of the study more than hundred literatures and various books in different languages have been analyzed. Additionally in depth interviews have been done with the physicians and pharmaceutical experts. Finally, survey is completed with 331 respondents and answers are analyzed. There are minor changes between the proposed model and final model. It is the indicator of deep literature review and other researches supported the study model and established meaningful model. Company linked factors such as corporate reputation, PSR and advertising and promotion, product linked factors such as brand awareness, brand personality and perceived quality of drug have statistically meaningful relation with brand satisfaction and brand loyalty, namely prescription behavior.

In the next stage, the contributions and limitations of the study are presented and recommendations for future research are presented.

4.1 DISCUSSION AND RECOMMENDATIONS

The main aim of this study is to present the factors, which have impact on prescription behavior and analyze the relationships between the concepts, which are generally created in the literature. Additionally other aim of this study is to find out new impacting factors, which have not been mentioned and tested in the literature previously. In this respect, brand personality dimension is a new concept in the pharmaceutical industry and according to deep literature review; it is firstly tested in this study. Attribution of personality to pharmaceutical brands was also this study's main question beside the find out relation of personality and prescription behavior. It is interesting to note that, attribution of personality to pharmaceutical brands is possible and also this attribution can have impact on prescription behavior. Since the study is done with 331 physicians from the various locations of Turkey, it is also important to have common attribution to pharmaceutical brand. In this study, brand x is attributed with excitement and competence dimensions. As mentioned in the previous chapters, there are various literatures and academic studies about the prescription behavior in the pharmaceutical industry. However, most of these studies followed the similar concepts and tested the same dimensions.

In the proposed model, company linked factors only have relation with brand satisfaction. In the final model with the modifications in the SEM analysis, it has been reached that direction between company linked factors and brand loyalty have statistically meaningful relation and SEM model reached more meaningful fit indices (see figure 3.16). One of the important factors in this study is corporate reputation, which is also part of company linked factors. Corporate reputation is the rising curiosity of companies as intangible assets that provide firms with a competitive advantage in the marketplace (Ponzi et al. 2011). As mentioned in the literature review section (see 2.1.1) today it is crucial to have valuable intangible assets for entering new markets, fostering customer retention and to be advantageous in the competition area. In this study, it has been investigated the perceptions of the physicians about an antibiotic company in order to determine its relationship with the prescription behaviors of the physicians. Also in this study, corporate reputation quotient is used which was developed by Fombrun in 1997 (Fombrun, 1997). Originally, it has six dimensions as of emotional appeal, product and services, vision and leadership, workplace environment,

financial performance and social responsibility. After EFA and CFA, it is merged under two dimensions as managerial competency and trustworthiness. However, only three questions are excluded from the scale among the 21 questions and these questions are about the financial performance, which is really difficult to answer by the respondents. The supervisor committee and participants in depth interviews mentioned this situation. Additionally according to deep literature review, corporate reputation quotient scale, which is developed by Fombrun (1997), has not been used entirely in the pharmaceutical industry studies. Only some part of this scale is used in some studies but not entirely implied to the study (Waheed et al. 2011). Therefore, it is not possible to compare how dimensions were merged under different with new definitions in previous studies.

In this study's analysis, it has been found that managerial competence and trustworthiness have statistically meaningful relation with brand satisfaction and brand loyalty. It is the only dimension in this study which has an impact on both dependent variables. It is the indicator of how customers give importance to the corporate reputation in the pharmaceutical industry. However, as it is mentioned in the section 3.1.3, pharmaceutical industry reputation level is very low as compared to other industries. Pharmaceutical industry ranked in 9th place among the most popular fifteen industries. It can be concluded that pharmaceutical industry experts should focus on this important issue to increase the awareness and also the perception of reputation for their companies. Research based pharmaceutical companies provide very important solutions for the human health. Additionally, physicians who are the users of these solutions have only one way to treat the people. It is the prescribing a right pharmaceutical drug. In addition, it is the conclusion of why life expectancy, which is a statistical measure of how long a person may live, has increased in last 30 years. Therefore, pharmaceutical companies should use this power and should be in higher position in industry reputation ranking with right management strategies. Some of the global pharmaceutical companies started to establish corporate communication departments to increase the perception of reputation. They are following integrated strategies especially to increase the communication with the public side. It is expected that, in the future pharmaceutical companies should prefer to invest necessarily on this area more intensively (Harrison,

2014). Also this study supports, corporate reputation is quite important for brand loyalty, which provides the consistent success for the pharmaceutical companies.

The other important dimension, which is also the most costly department for the pharmaceutical companies, is field force, namely pharmaceutical sales representatives. It is mentioned that research based pharmaceutical companies have always relied on strong R&D (Research and Development), aggressive defense of patents and powerful sales force as the dominant promotional tool as being the three important ways to ensure their long term performance and success (Moss and Schuiling, 2003). On the other side, it has been argued that sales push was preferred to marketing pull and thus the sales force related costs represented about 50% of all marketing expenditures (Bednarik, 2005). During the literature researches, it has been found various studies about the PSR impact on prescription behavior. It is interesting to note that dimensions such as characteristics of the relationships impact on prescription behavior have not been tested. In this study, characteristics of the relationship and professional value have been tested and measured. There were four dimensions in the proposed model. Professional value dimensions are ethical behavior and trust to sales people, characteristics of the relationship dimensions are frequent social contact and similarity. According to statistical analysis similarity and ethical value dimensions have statistically meaningful relation with brand satisfaction and brand loyalty. There is a common belief that frequent social contact is one of the most important factors in the pharmaceutical industry to convince physicians. However, it has not been found statistically meaningful in this study. Companies generally allocates budgets for these type of organizations but this study reveals that similarity of PSR is more important than the frequent social contacts. It is very hard for pharmaceutical companies to hire a person who have similar characteristics with physicians or any person, but it can be concluded that training programs can be organized for ways to learn customers' mind and perception. Pharmaceutical companies can also improve the CRM strategy to understand their customers. Finally, ethical behavior has been found statistically meaningful on both brand satisfaction and brand loyalty, which is also the most important factor not only for pharmaceutical industry. Once again, this study proves that a salesperson's unethical behavior may negatively impact customer satisfaction and retention. To keep the ethical

behavior notion, companies must have to create code of conducts and must strictly control the people especially who have close relations with the target customers.

The last dimension of corporate linked factor is advertising and promotion. In this section, marketing activities of pharmaceutical companies are analyzed. Due to industry regulations, marketing activities are very restrictive and strictly controlled by ministry of health. Typical activities are promotional materials such as gimmicks, CME programs and also visit of pharmaceutical sales representatives. During the literature research, it has been reached various academic studies for advertising and promotional activities. However, it is recognized that some of the studies show that there is a positive relation between advertising or promotional materials but some of them indicates that physicians do not care about the marketing activities except the efficacy of a product. Actually pharmaceutical companies allocate serious budgets to marketing activities such as symposiums, stand-alone meetings and promotional materials.

This study concludes that advertising and promotional materials do not have meaningful relation with brand satisfaction. But relation with brand loyalty is statistically meaningful. It is interesting to note that only this dimension of company linked factors not showed statistically meaningful data with brand satisfaction. When we look at closely the correlations (appendix), advertising and promotion has the lowest correlations with brand satisfaction among the all dimension of company linked factors and product linked factors. However, statistically meaningful impact on brand loyalty indicates that advertising and promotional activities is crucial and it is essential to keep the relations in the long term. The participants have found especially organizations such as symposium, CME and informative meetings about the products and diseases important. On the other hand, without any marketing activity, PSR could not find a way to increase the relation with the physicians. Statistical results support that and the conclusion is brand loyalty is impacted by advertising and promotion.

As a result, it is concluded that only frequent social contact and trust to sales people dimensions did not show statistically meaningful relation with the dependent variables. However, trust to sales people and ethical behaviors are the part of professional value dimension and have similarities in some points. It can be concluded that professional value has impact on brand satisfaction and brand loyalty. On the other hand, advertising

and promotion has impact on brand loyalty more than brand satisfaction and it is found statistically meaningful.

All of the results for company linked factors indicate that pharmaceutical companies firstly should focus on reputation dimension because the result proves that corporate reputation dimension has statistically meaningful impact on brand satisfaction and brand loyalty. For pharmaceutical sales representatives, it is concluded that ethical behavior and similarity are the major factors on prescription behavior. For ethical behavior dimension, companies can create code of conduct and train the related employees in the company. For the similarity dimension, it is really hard to imply in general but with specific trainings which is in line with CRM strategy can increase the relations with target customers. Finally, advertising and promotion dimension indicates that pharmaceutical marketing environment has a specific framework and it reflected to the results of the study.

For the second stage, product linked factors and brand satisfaction dependent variable relation is investigated. In this study, there are three factors of product linked factors. These factors are brand awareness, brand personality and perceived drug quality. In totally it has been found that product linked factors relation found statistically significant with only brand satisfaction dependent variable.

One of the key factor among the product linked factor is brand awareness. It refers to strength of a brand's presence in the consumer mind (Aaker, 1996). There are several levels of brand awareness depending on the ease with which a consumer can recall the brand. In the pharmaceutical industry, some recent studies indicated that the physicians preferred well-known brands and they tend to differentiate the generic and branded ones while prescribing the drugs (Dadfer, Brege and Bayrami, 2012). This notion is also supported with the results of this study. Reference product in this study is very well known brand and the brand awareness relation with brand satisfaction has been found statistically meaningful.

This study's brand awareness scale is consisted of four questions and the questions are "I can recognize X among the other competing brands, I am aware of X, some characteristics of X come to my mind quickly, and I can quickly recall the symbol or logo of X". According to statistical results, mean of brand awareness questions is very

high and standard deviation is very low (appendix d2). Among the 132 questions in the questionnaire form, I am aware of brand X question has the highest mean value. It can be concluded that brand awareness is very crucial in the pharmaceutical industry. As emphasized in the literature review, decision making process has different paths for the physicians. Also mentioned by the physicians during the in-depth interviews, brand awareness importance mentioned frequently. One of the participants emphasized that he always prefer to prescribe a brand which comes to mind quickly.

At this point, pharmaceutical companies must focus on to increase the awareness of its brands. Despite the restricted marketing tools in the industry, awareness is a result of intensive marketing activities such as visual materials, CME about the product and also intensive PSR visit to physicians. Also it will help to company to differentiate its product against to generic substitution. Brand awareness is also crucial from the patient side. One of the respondents who (K.K) work at regional healthcare center stated that, some of the patients come to him with the package of finished drug medicine and insist to prescribe the same brand again. This kind of behaviors from the patients also impacts their decision and also increases loyalty to the brand.

The other factor of product linked factor is brand personality dimension. As emphasized in the literature review section 2.2.2, brand personality dimension has not been tested and mentioned in the literature from the physicians' perceptions. There is only one study in the literature which has been published in 2013 in Journal of Consumer Marketing which is one of the most popular marketing journal since 1984 (Leonard and Katsanis, 2013). This study just investigates the brand personality dimension from the point of patient view. It is important to note that editor of the article stated that study have important implications for the development of innovative marketing strategies, and this study lays the groundwork for further investigation into the antecedents and consequences of prescription drug brand personality. In this study, same brand personality scale has been used as in this study. According to study results, it has been found that consumers are in fact able to attribute human personality traits to prescription drugs. Consumers attributed competence and innovativeness personality dimensions to prescription drugs. However, innovativeness is not a standard dimension of Aaker's brand personality scale. They had to make some modifications in the scale and rename the unique, innovative and original sub-dimension as innovativeness. In this study, it is

needed to make similar modifications during the exploratory factor analysis. Normally brand personality scale is consisted of five dimensions as competence, sincerity, ruggedness, sophistication and excitement. However as a result CFA, ruggedness and sophistication dimensions are eliminated as expected. This feedback was also made by the respondents of in depth interviews. Each participant emphasized that sophistication and ruggedness dimensions are not meaningful attribute to pharmaceutical drugs. One of the participants stated about the brand personality dimension:

“But product concepts or visual of the materials can impact our perception. For Instance, colors in the material or logo of the product can change our minds. Some of products really have very colorful leaflets. I think it reflects the excitement of product. It sounds interesting but it is also the reality”. (O.E)

According to this study, two dimensions of brand personality have statistically meaningful relation with brand satisfaction. These dimensions are competence and excitement. Sincerity dimension is also validated by EFA and CFA but this dimension has not been found meaningful. First of all, this result indicates that physicians can attribute personality to pharmaceutical brands. In addition, it is possible to say that they have tendency to attribute positive things to pharmaceutical brands which can be also the outcome of the reference product in the study. However, statistically meaningful impact on brand satisfaction, namely on prescription behavior proves that brand personality dimension can be an important factor in the pharmaceutical industry. While other important dimensions such as frequent social contact did not show meaningful impact on prescription behavior, impact of personality attribution on the prescription behavior makes this result more interesting and an area to analyze more deeply. Also, pharmaceutical companies may investigate this area and develop strategies to characterize their products.

The last factor of product linked factor is perceived drug quality. It is indicated that the high quality of a drug is a key factor which contributes to the success of any pharmaceutical company on the market as a consequence of the fact that this represents a priority for the majority of physicians/pharmacists when they recommend or prescribe a certain product (Harrison and Hart, 1987). In this study for measuring perceived quality, different two scales were merged at first and it had no sub-dimension at first. However, after the exploratory factor analysis it is merged under the efficacy and side effect dimensions.

In one study, factors influence the prescribing behavior was investigated (Girdharwal and Singh, 2007). The most important of the identified factors in the study were the quality of the product prescribed by the doctor, for reasons related to the fact that it helps in the cure of an illness but also related to the contribution to the reputation. In this study, reference product is also known with its quality on the treatment of disease. According to statistical results, mean value of the efficacy and side effect question is high. Most importantly, it has been found that efficacy and side effect have statistically meaningful relations with brand satisfaction. This result once again proves that product quality is an important factor which had been found as the most important factor in various studies. It should be the expected consequence if the product is used for healthcare of humanity. In addition, every product must to have approval of legal authorities. Therefore, it is not possible to launch a product without any legal permission. However, despite the strong clinical trials of the product, physicians experience and also answers of the patients are the most important factors. At this point, pharmaceutical companies may focus on to convince the physicians to use the product.

In last section, product linked factors relations with prescription is evaluated. As emphasized in the previous sections, product linked factors are consisted of brand awareness, brand personality and perceived drug quality. According to statistical results, brand awareness is found statistically an important factor on brand satisfaction. For this reason, pharmaceutical companies may focus on to increase the awareness with using marketing tools.

Brand personality dimension which is tested for the first time in the literature also has been found as an important factor on brand satisfaction. Attribution of personality to pharmaceutical brands is not an easy process for the pharmaceutical companies, but when creating a concept for the products which is also part of the branding can impact the attribution process. Finally, perceived quality of drug has been found significantly an important factor on prescription behavior which is also the expected result.

Finally demographic variables tested and it has been concluded there are no differences except the brand satisfaction and physicians' experience. Most probably, the reason is reference product. Every physician without any healthcare report can prescribe this product and it has been in the market for more than 20 years. Field force of the

company, visit every type of institution and physician awareness is quite high as statistical result approves. However, the difference between experience and the brand satisfaction is an interesting result and it can be the indicator of new generation physicians do not find the brand as an innovative treatment method. This is the specific issue for the reference product in this study.

4.2 CONTRIBUTIONS OF THE STUDY

There are various studies for pharmaceutical marketing in the literature. Also, it is observed that each year different dimensions of pharmaceutical marketing are analyzed. For instance, digital marketing area is very new for pharmaceutical industry. It is observed that digital marketing is an increasing concept in last two years. However, due to very restrictive regulations in the industry, it is forbidden to make direct communication with drug users, who are the patients. For these kinds of reasons, pharmaceutical companies are trying to find different solutions such as supporting the healthcare associations with increasing the awareness of disease.

Corporate reputation is an essential factor for the pharmaceutical companies. If physicians assume that the company's reputation is well deserved, they tend to always prescribe its drugs based on the company's history of effective drugs (Waheed et al. 2011). In this study, corporate reputation quotient is used for measuring the reputation which is developed by Fombrun in 1997. This scale is used by the research companies to declare yearly report of corporate reputation list. It is also commonly used for the academic researches. This study indicates with using this highly accepted scale, corporate reputation has impact on brand satisfaction and brand loyalty. Also this is the first study in the pharmaceutical literature which uses the corporate reputation quotient with measuring impact on brand satisfaction and brand loyalty. This method, also finding the significant results on the both dependent variables is a significant contribution to the literature.

In the second dimension of company linked factors, pharmaceutical sales representatives' impact on prescription behavior is analyzed under the characteristics of the relationship and sales PSR's professional value. According to deep literature review, generally influence on PSR physicians was measured in these studies. However, in this project, PSR impact on brand satisfaction and brand loyalty is measured. Combining

different dimensions of pharmaceutical sales representatives and directing it to prescription behavior is a significant contribution to the literature.

Advertising and promotion has not been found an important factor on brand satisfaction but it has a significant relation with brand loyalty. As a practitioner who has an experience more than 10 years in the industry, most of the marketing experts assume that advertising and promotion directly impact satisfaction. It can be the opportunity for pharmaceutical companies to analyze this perception level. According to this unexpected result, it could be significant research area for the literature side and also for the practice side.

The current study analyzes the personality dimensions of pharmaceutical brands and investigates the relation of prescription behavior. This is the first study in the literature which investigates the possibility of personality attribution to pharmaceutical drugs by physicians and measures their impact on the prescription behavior. During the in depth interviews, some of the participants' reactions was very conservative. They strictly defended it must be very difficult to attribute a personality to pharmaceutical drugs. However, this study proves that, firstly it is possible to attribute a personality to pharmaceutical drugs. Secondly, personality of drugs has an impact on prescription behavior. From this perspective, working on innovative notions and finding the results meaningful for the literature are significant contribution to the literature.

4.3 LIMITATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

The current study analyzes the multidimensional impacting factors on prescription behavior and their impact on prescription behavior. Despite the meaningful results and positive relations, this study has some limitations.

First of all this study is done with physicians. There are almost 100k physicians in Turkey and in this study it is reached 331 physicians from various locations of Turkey. 15 pharmaceutical sales representatives per day visit them averagely. Turnover rate is very high in the industry and pharmaceutical sales representatives' working period at the same company is very short. This can be the main limitation for the study. Also perceptions of the physicians for the pharmaceutical companies can impact their decision while filling the questionnaire forms.

The other limitation is for the current study is concepts or wordings which are used in the questionnaire. For instance, definitions or wordings in the brand personality scale had been commented for the first time by the physicians. Most probably, they had never thought about the attribution of personality to pharmaceutical drugs. Additionally brand personality scales directly translated to Turkish. Some of the personality items in the scale do not match with Turkish traditions or cultures. This is the limitation for the study.

The other limitation is perception of physicians for the marketing activities of pharmaceutical companies. Physicians are the main customers for the pharmaceutical drugs. However, physician interaction with the pharmaceutical industry raises many ethical concerns. This relationship is complex, owing to a pluralism of beliefs held by physicians, patients, and third parties (Vashi, 2012). This situation can cause bias when answering the questions especially which are about the advertising and promotion section.

Additionally this study may also have limitations about the methodology used. SEM analysis has some disadvantages as mention in the literature. For instance many parameters related with various hypotheses are estimated simultaneously which works if the empirical data provides enough information. But this is not the desired situation especially for the social sciences. The second issue is the estimation methods In this model, many different relationships are built by SEM and estimations are done by iterative algorithms to reach an optimal solution. As a result, SEM analysis can reach an optimal solution but estimated parameters do not make sense. The final challenge is the interpretation of results which is difficult in many cases since it is a complex process and has various procedures (Werner and Engel, 2009).

The final limitation of this study is the reference product which is used in the analysis. Despite very positive feedbacks about the product from experts and physicians, high reputation of the product has possibility to manipulate the results.

Considering all these limitations and reviewing the results of the study, some recommendations for future research can be done. First of all this study can be done with larger sample size. In this study 331 physicians answered the question in the study.

Additionally this model can be tested with the other therapeutic classes' products. In the current study, only one product is used which is an antibiotic drug. Combination of different products from different class may help to reach more meaningful outcome. For instance, what will be the personality dimension of an oncology drug?

On the other hand, physicians' perception and also patients' perception can be compared for the brand personality dimension. These types of studies can expand the this project's outcome and help to reach new and innovate ideas in the literature.

REFERENCES

Books

- Aaker, D.A., 1996. *Building Strong Brands*. Free Press, New York.
- Aaker, D.A., 1991. *Managing Brand Equity: Capitalizing on the Value of a Brand Name*. The Free Press U.S.A.
- Aaker, D. A., & Biel, A., 2013. *Brand equity & advertising: advertising's role in building strong brands*. Psychology Press.
- Aron, Arthur., 2012. *Statistics for Psychology 6th Edition*. Pearson,.
- Babbie, Earl R.,2010. *The Practice of Social Research*. 12th ed. Belmont, CA: Wadsworth Cengage
- Bagozzi, R.P., 1986. *Principles of Marketing Management*. Chicago: Science Research Associates
- Bandura, A., 1989. Social cognitive theory. In R. Vasta (Ed.), *Annals of child development*. Vol.6. *Six theories of child development*. Greenwich, CT: JAI Press.
- Biel, Alexander L., 1993. Converting image into equity. *Brand equity and advertising: Advertising's role in building strong brands*. pp.67-82.
- Bond, Ronald S., and David F. Lean.,1977. *Sales, promotion, and product differentiation in two prescription drug markets*. For sale by the Supt. of Docs., US Govt. Print.
- Boone, L., 2001. *Contemporary marketing 10th edition*. L. Boone, D. Kurtz. Harcourt,
- Brians, Craig Leonard et al., 2011. *Empirical Political Analysis: Quantitative and Qualitative Research Methods*. 8th ed. Boston, MA: Longman,
- Byrne, B.M., 1998. *Structural Equation Modeling with LISREL, PRELIS and SIMPLIS: Basic Concepts, Applications and Programming*. Mahwah, New Jersey: Lawrence Erlbaum Associates.
- Connelly, L. M., 2008. *Pilot studies*. Medsurg Nursing.
- Comrey AL. , 1973, *A First Course in Factor Analysis*. New York: Academic Press.
- Conner,M.,&Norman,P., 2005. *Predicting health behaviour*. McGraw-Hill International.
- Crane, A., Matten, D., Moon, J., & Moon, J., 2008. *Corporations and citizenship*. Cambridge. Cambridge University Press.

- Donald P. Connelly et al., 1990. *Knowledge Resource Preferences of Family Physicians*. 30 J.FAM. PRAC.
- Davies, B. J. and P. Ward., 2001. *Managing Retail Consumption*. England: John Wiley & Sons Ltd.
- Davies, G., Chun, R., Vinhas, R., & Roper, S., 2001. *The personification metaphor as a measurement approach for corporate reputation*. Henry Stewart Publications, 4, pp.113-127
- Denzin, N. And Lincoln, Y., 2005. *The Sage Handbook of Qualitative Research*, Sage Publications., USA.
- Diamantopoulos, A. and Sigua, J.A., 2000. *Introducing LISREL*. London: Sage Publications.
- Dinnie, K., 2008. *Nation branding*. Routledge.
- Dogramatzis, D., 2002. *Pharmaceutical marketing: a practical guide*. Taylor & Francis.
- Etzel, M., B. Walker and W. Stanton., 1997. *Marketing 11th edition*, New Jersey.
- Fill, C. (2006). *Simply marketing communications*. Pearson Education.
- Fombrun, C.J, 2001. *Reputation: Realizing Value from the Corporate Image*. Cambridge: MA Harvard Business School Press.
- Given, Lisa M., 2008. *The Sage encyclopedia of qualitative research methods*. Los Angeles, Calif.: Sage Publications.
- Greene J., 2000. *Drug representative targeting non-physicians*. American Medical News.
- Güse, Katharina S. , 2011. *Brand Personalities and Consumer-brand Relationships as elements of successful brand management*. Vol. 3. University of Bamberg Press,
- Hair, Joseph F., et al., 2006. *Multivariate data analysis*. Vol. 6. Upper Saddle River, NJ: Pearson Prentice Hall.
- Hair J, Anderson RE, Tatham RL, Black WC., 1995. *Multivariate data analysis*. 4th ed. New Jersey: Prentice-Hall Inc
- Isaac, S., & Michael, W. B., 1995. *Handbook in research and evaluation*. San Diego, CA: Educational and Industrial Testing Services.
- Jöreskog, Karl G., and Dag Sörbom., 1993. *LISREL 8: Structural equation modeling with the SIMPLIS command language*. Scientific Software International,
- Jobber, David, and Geoffrey Lancaster., 2005. *Selling and sales management*. Pearson education
- Jöreskog, K. and Sörbom, D. , 1993. *LISREL 8: Structural Equation Modeling with the SIMPLIS Command Language*. Chicago, IL: Scientific Software International Inc.

- Kapferer, J. N., 2012. *The luxury strategy: break the rules of marketing to build luxury brands*. Kogan Page Publishers
- KINNEAR, Te, and Kenneth L. Bernhardt. , 1990. *Principies of Marketing*. Scott, Foresman and Company, Illinois
- Kline, R.B., 2005. *Principles and Practice of Structural Equation Modeling* (2nd Edition ed.). New York: The Guilford Press.
- Kotler, P. Keller. KL., 2006. *Marketing management*, 12, pp.181-183.
- Kotler, P., & Armstrong, G., 2008. *Principles of marketing*. Pearson Education
- Kotler, P., 2000. *Marketing Management*. 10th ed., New Jersey, Prentice-Hall.
- Kotler, P., & Armstrong, G., 2008. *Principles of marketing*. Pearson Education.
- Keller, K. L., 2008. *Strategic Brand Management - Building, Measuring, and Managing Brand Equity*. N.Y: Prentice-Hall.
- Kotler, P. Keller. KL., 2006. *Marketing management*, 12, N.Y: Prentice-Hall.
- Kotler, Philip, and Kevin Lane Keller., 2006. *Identifying Market Segments&Target*. N.Y: Prentice-Hall.
- Lamb, Charles W., Joseph F. Hair, and Carl McDANIEL., 2004. *Princípios de marketing*. Thomson.
- Lleras, C., 2005. *Path analysis, Encyclopedia of Social Measurement*. 3, Sage Publications, pp. 25-30.
- Lukas, B., Hair , J. and Ortinau, D., 2004. *Marketing research*. North Ryde, N.S.W: McGraw-Hill.
- Malhotra, N. K., 2004. *Marketing research. International Edition*, New Jersey: Pearson Education Inc.
- Malhotra, Naresh K., and David F. Birks., 2000. *Marketing research: an applied approach*. Harlow: Financial Times/Prentice Hall.
- Marsh, Herbert W., John R. Balla, and Kit-Tai Hau., 1996. *Advanced structural equation modeling: Issues and techniques*. Lawrance Publications, pp.315-353.
- McCarthy, E. J., Shapiro, S. J., & Perreault, W. D., 1975. *Basic marketing*. Georgetown, Ont.: Irwin-Dorsey.
- Mehrabian, A. and Russell, J.A., 1980. *An Approach to Environmental Psychology*, MIT Press, Cambridge, MA.
- Norman, G. R. & Streiner, D. L., 2003. *PDQ Statistics, 3rd Ed.*, Shelton: People's Medical Publishing House.

- Nunnally, Jum C., Ira H. Bernstein, and Jos MF ten Berge., 1979. *Psychometric theory*. Vol. 226. New York: McGraw-Hill.
- Palmer, A., 2012. *Introduction to marketing: theory and practice*. Oxford University Press.
- Pallant, J., 2011. *SPSS Survival Manual*. Australia: Allan&Unwin.
- Percy, L., & Elliot, R., 2007. *Strategic brand management*. Oxford: Oxford University Press.
- Robinson, J. P., Shaver, P. R., & Wrightsman, L. S., 1991. Criteria for scale selection and evaluation. *Measures of personality and social psychological attitudes*. Elsevier Publications.
- Romaniuk, J., & Nicholls, E., 2006. *Evaluating advertising effects on brand perceptions: incorporating prior knowledge*. NTC Publications.
- Rossiter JR & Percy L., 1987. *Advertising and Promotion Management*. Singapore: McGraw-Hill.
- Stanton, W. J., Etzel, M. J., Walker, B. J., Báez, E. P., Martínez, J. F. J. D., Nicolesco, J. D., & Garza, A. C., 1980. *Fundamentos de marketing*. McGraw-hill.
- Suhr, Diana D., 2006. *Exploratory or confirmatory factor analysis?*. Cary: SAS Institute.
- Tabachnick, B.G. and Fidell, L.S., 2007. *Using Multivariate Statistics* (5th ed.). New York: Allyn and Bacon.
- Treece, E. W., & Treece, J. W., 1982. *Elements of research in nursing* (3rd ed.). St. Louis, MO: Mosby.
- VanAuken, B., 2003. *Brand aid: An easy reference guide to solving your toughest branding problems and strengthening your market position*. AMACOM American Management Association.
- Van Auken, Brand., 2010. *Branding*. Jaico Publishing House.
- Zatalman, G. & Brger, P. C., 1975. *Marketing research-fundamentals and dynamics*. Hinsdale, IL: The Dryden Press.
- Zikmund, W. G., 2003. *Business research method*, 8th Ed., Cincinnati, Ohio: Thomson/South-Western.

Periodicals

- Aaker, J., Fournier, S., & Brasel, S. A., 2004. When good brands do bad. *Journal of Consumer research*, **31**(1), pp. 1-16.
- Aaker, J. L. 1997., Dimensions of brand personality. *Journal of marketing research*. pp. 347-356.
- Abdul Waheed, K., Jaleel, M., & Laeequddin, M., 2011. Prescription loyalty behavior of physicians: an empirical study in India. *International Journal of Pharmaceutical and Healthcare Marketing*. **5**(4), pp. 279-298.
- Abratt, R., & Lanteigne, J., 2000. Factors influencing general practitioners in the prescription of homeopathic medicines. *South African Journal of Business Management*. **31**(3).
- Ahmed, R.R., Vishnu, P., & Ahmed, J., 2012. Actors that affect attitude towards generic drugs perception: Comparison of physicians & general practitioners of Karachi city. *International Journal of Management, IT and Engineering*, **2**(11), pp. 151-178.
- Ahmed, R.R., 2014. Pharmaceutical marketing mix strategy and physician's prescription behavior. *The Pharma Innovation Journal*, **3**(7), pp. 8-12.
- Ajzen, I., 1991. The theory of planned behavior. *Organizational behavior and human decision processes*. **50**(2), pp. 179-211.
- Alssageer, M. A., & Kowalski, S. R., 2012. A survey of pharmaceutical company representative interactions with doctors in Libya. *Libyan Journal of Medicine*, **7**(1).
- Alrubaiee, L., 2012. Exploring the relationship between ethical sales behavior, relationship quality, and customer loyalty. *International Journal of Marketing Studies*, **4**(1), pp. 7.
- Alrubaiee, L., & Alkaa,ida, F., 2011. The mediating effect of Patient satisfaction in the Patients' perceptions of healthcare quality – Patient trust relationship. *International Journal of Marketing Studies*. Vol. **3**, No. 1; February, pp. 103-127.
- Alt, M., & Griggs, S., 1988. Can a brand be cheeky?. *Marketing Intelligence & Planning*. **6**(4), pp. 9-16.
- Amir, M., & Zaman, K., 2011. Review of Pharmaceutical Industry. *International Journal of Business & Information Technology*. pp. 1-11.
- Anderson, James C. and David W. Gerbing., 1988. Structural Equation Modeling in Practice: A Review and Recommended Two-Step Approach. *Psychological Bulletin*. **103** (May), pp. 411-23.
- Argo, J.J., Dahl, D.W. and Manchanda, R.V., 2005. The Influence of a Mere Social Presence in A Retail Context. *Journal of Consumer Research*. **32** (2), pp. 207-212.

- Asadollahi, A., Jani, M., Mojaveri, P.P., & Allahabadi, F.B., 2012. Investigating the Effect of Brand Satisfaction, Brand Trust and Brand Attachment on Purchase Behavior of Customers, Research. *Journal of Applied Sciences, Engineering and Technology*. **4**(17), pp.3182-3187.
- Avorn J, Chren MM, Hartley R., 1982. Scientific versus commercial sources of influences on the prescribing behaviour of physicians. *American Journal of Medicals*, **73**, 4-8, pp.1-23.
- Ayyıldız , H., Cengiz, E., 2006. Pazarlama Modellerinin Testinde Kullanılabilecek Yapısal Eşitlik Modeli (YEM) Üzerine Kavramsal Bir İnceleme. *Süleyman Demirel Üniversitesi, İktisadi ve İdari Bilimler Fakültesi*, Y. 2006, **C. 11**, S.1, pp. 63-84.
- Azoulay, A., & Kapferer, J. N., 2003. Do brand personality scales really measure brand personality?. *The Journal of Brand Management*. **11**(2), pp. 143-155.
- Babin, B. J., & Griffin, M., 1998. The nature of satisfaction: an updated examination and analysis. *Journal of Business research*. **41**(2), pp. 127-136.
- Bagozzi, R. P., & Warshaw, P. R., 1990. Trying to consume. *Journal of consumer research*. pp. 127-140.
- Bagozzi, Richard P. and Lynn W. Phillips., 1982. Representing and Testing Organizational Theories: A Holistic Construal. *Administrative Science Quarterly*. **27**, pp. 459-89.
- Bandura, A., 1991. Social cognitive theory of self-regulation. *Organizational behavior and human decision processes*. **50**(2), pp. 248-287.
- Banks JWI, Mainous AGI., 1992. Attitudes of medical school faculty toward gifts from the pharmaceutical industry. *Academic Medicine*. **67**, pp. 610–612.
- Bates A, Bailey E. Marketing to win market share – The role of doctor sentiment and benchmarking. *International Journal of Medical Marketing*. Feb 2003; **3**(2): pp. 145–152.
- Batra, R., Lehmann, D. R., & Singh, D. , 1993. The brand personality component of brand goodwill: some antecedents and consequences. *Brand Equity and Advertising*. pp. 83-96.
- Bednarik, J. , 2005. Does brand differentiate pharmaceuticals?. *Neuroendocrinology Letters*. **26** (6), pp. 635-52.
- Belén del Río, A., Vazquez, R., & Iglesias, V., 2001. The effects of brand associations on consumer response. *Journal of consumer marketing*. **18**(5), pp. 410-425.
- Bentler, P.M. and Bonnet, D.C., 1980. Significance Tests and Goodness of Fit in the Analysis of Covariance Structures, *Psychological Bulletin*. **88** (3), pp. 588-606.
- Bernays, F.I. (1977), ``Down with image, up with reality'', *Public Relations Quarterly*. Vol. 22 No. 1, pp. 12-14.

- Berthon, P., Hulbert, J. M., & Pitt, L. F. (1999). Brand management prognostications. *Sloan Management Review*, **40**(2), pp. 53-65.
- Berry, Leonard L., 1995. Relationship marketing of services—growing interest, emerging perspectives. *Journal of the Academy of marketing science*, **23** (4), pp. 236-245.
- Bhat, S., & Reddy, S. K., 1998.. Symbolic and functional positioning of brands. *Journal of consumer marketing*, **15**(1), pp. 32-43.
- Bitner, M. J., 1992. Servicesapces: The Impact of Physical Surroundings on Customers and Employees. *Journal of Marketing*, **6**, pp. 56-71.
- Blackett, A., 2001. Global governance, legal pluralism and the decentered state: a labor law critique of codes of corporate conduct. *Indiana Journal of Global Legal Studies*. pp. 401-447.
- Blackett, T., & Harrison, T., 2001. Brand medicine: Use and future potential of branding in pharmaceutical markets. *Journal of Medical Marketing: Device, Diagnostic and Pharmaceutical Marketing*, **2** (1), pp. 33-49.
- Bhat, Subodh, and Srinivas K. Reddy., 1998. Symbolic and functional positioning of brands. *Journal of consumer marketing* **15** (1), pp. 32-43.
- Burnett, .M., Pettijohn, C., and Keith, N., 2008. A Comparison of the Ethical Perceptions prospective personal selling and advertising employees. *The Marketing Management Journal*, **18**, 1, pp. 77- 83.
- Boltri, J. M., Gordon, E. R., & Vogel, R. L., 2002. Effect of antihypertensive samples on physician prescribing patterns. *Family Medicine-Kansas City*-, **34**(10), pp. 729-731.
- Brakus, J. J., Schmitt, B. H., & Zarantonello, L. , 2009. Brand experience: what is it? How is it measured? Does it affect loyalty?. *Journal of marketing*, **73** (3), pp. 52-68.
- Brett, Allan S., Wayne Burr, and Jamaluddin Moloo., 2003, Are gifts from pharmaceutical companies ethically problematic?. a survey of physicians." *Archives of internal medicine* **163**,18, pp. 2213-2218.
- Briggs, S. R., 1992. Assessing the Five-Factor Model of Personality Description. *Journal of Personality*, **60** (2), pp. 253-293.
- Budd, J., 1969. A mirror of the corporate image. *SAM Advanced Management Journal. Part 34*, January, pp. 45-50.
- Capon, N., Berthon, P. R., Hulbert, J. M., & Pitt, L. F., 2001. Brand Custodian: The New Role of Senior Management. *European Management Journal*, **19**, pp. 215-227.
- Caplow, Theodore, and John J. Raymond., 1954. Factors influencing the selection of pharmaceutical products. *The Journal of Marketing*. pp. 18-23.

- Carmeli A. & Freund A., 2002. The relationship between work and workplace attitudes and perceived external prestige. *Journal of Corporate Reputation Review*. 5, pp. 51-68.
- Cater, Barbara, and Vesna Zabkar., 2009. Antecedents and consequences of commitment in marketing research services: The client's perspective. *Industrial Marketing Management*. 38 (7), pp. 785-797.
- Caudill, T. Shawn, et al. , 1996. Physicians, pharmaceutical sales representatives, and the cost of prescribing. *Archives of family medicine*. 5 (4), pp. 201
- Chaudhuri, A., & Holbrook, M. B., 2001. The chain of effects from brand trust and brand affect to brand performance: the role of brand loyalty. *Journal of marketing*. 65 (2), pp. 81-93.
- Chaix-Couturier, C., Durand-Zaleski, I., Jolly, D., & Durieux, P., 2000. Effects of financial incentives on medical practice: results from a systematic review of the literature and methodological issues. *International Journal for Quality in Health Care*, 12 (2), pp. 133-142.
- Chang, I-Chiu, Li, Yi-Chang, Hung, Wong-Fu and Hung, Hisn-Ginn., 2005. An empirical study on the impact of quality antecedents on taxpayers' acceptance of Internet tax filing systems. *Government Information Quarterly*. 22 (3), pp. 389-410.
- Chi, H. K., Yeh, H. R., & Yang, Y. T., 2009. The impact of brand awareness on consumer purchase intention: The mediating effect of perceived quality and brand loyalty. *Journal of International Management Studies*, 4(1), pp. 135-144.
- Chinomona, R., 2013. The influence of brand experience on brand satisfaction, trust and attachment in South Africa. *International Business & Economics Research Journal. (IBER)*, 12 (10), pp. 1303-1316
- Chiu, K. K. S., Lin, R. J., Hsu, M. K., & Chen, S. C., 2011. Symbolic and functional brand effects for market segmentation. *Australian Journal of Business and Management Research* 1 (6), pp. 75-86.
- Chew, L. D., O'Young, T. S., Hazlet, T. K., Bradley, K. A., Maynard, C., & Lessler, D. S., 2000. A physician survey of the effect of drug sample availability on physicians' behavior. *Journal of General Internal Medicine*. 15 (7), pp. 478-483.
- Chun, Rosa. , 2005. Corporate reputation: Meaning and measurement. *International Journal of Management Reviews*. 7.2 (2005): pp. 91-109.
- Çiftçioğlu, A., 2010. Exploring the role of perceived external prestige in employee's emotional appeal: evidence from a textile firm, *Business and Economics Research Journal* .1 (4), pp. 85-96.
- Clark, N. M., Gong, M., Schork, M. A., Evans, D., Roloff, D., Hurwitz, M. & Mellins, R. B., 1998. Impact of education for physicians on patient outcomes. *Pediatrics*, 101(5), pp. 831-836.

- Cleff, T., Dörr, S., Vicknair, A., & Walter, N. , 2013. Brand Experience—How It Relates To Brand Personality, Consumer Satisfaction And Consumer Loyalty. An Empirical Analysis Of The Adidas Brand. *Interdisciplinary Management Research*, **9**, pp. 731-754.
- Cockburn, Jill, and Sabrina Pit., 1997. Prescribing behaviour in clinical practice: patients' expectations and doctors' perceptions of patients' expectations—a questionnaire study. *BMJ*. **315**.7107 pp. 520-523.
- Cooper, Robert W., and Garry L. Frank., 2002. Ethical challenges in the two main segments of the insurance industry: Key considerations in the evolving financial services marketplace. *Journal of Business Ethics*. **36** (2), pp. 20.
- Cooil, B., Keiningham, T. L., Aksoy, L., & Hsu, M., 2007. A longitudinal analysis of customer satisfaction and share of wallet: Investigating the moderating effect of customer characteristics. *Journal of Marketing*, **71** (1), pp. 67-83.
- Cortina, J.M., 1993. "What is coefficient alpha? An examination of theory and applications". *Journal of Applied Psychology*. **78**, pp. 98–104.
- Coscelli, A., 2000. The importance of doctors' and patients' preferences in the prescription decision. *The Journal of Industrial Economics*, **48**(3), pp. 349-369.
- Crissy, W.J., 1971. Image: what is it?' *MSU Business Topics*, Winter, pp. 77-80.
- Cunningham, L., 2006. Branding of learning and development: evidence from research. *Development and Learning in Organizations: An International Journal*, **20** (2), pp. 7-9.
- Davis, D. F., Golcic, S. L., & Marquardt A. J., 2008. Branding a B2B service: Does a brand differentiate a logistics service provider? *Industrial Marketing Management*, **37**, pp. 218-227.
- de Carvalho, Jackson, and Felix O. Chima., 2014. Applications of Structural Equation Modeling in Social Sciences Research. *American International Journal of Comtemporary Research*, **4** (1), pp. 6-11
- De Chernatony, L., Harris, F., & Riley, F. D. O., 2000. Added value: its nature, roles and sustainability. *European Journal of marketing*, **34** (1/2), pp. 39-56.
- Dekimpe, M. G., Steenkamp, J. B. E., Mellens, M., & Abeele, P. V., 1997. Decline and variability in brand loyalty. *International journal of Research in Marketing*, **14**(5), pp. 405-420.
- Delgado-Ballester, E., & Luis Munuera-Alemán, J., 2005.. Does brand trust matter to brand equity?. *Journal of product & brand management*, **14** (3), pp. 187-196.
- DeLorme, Denise E., et al., 2010. The state of public research on over-the-counter drug advertising. *International Journal of Pharmaceutical and Healthcare Marketing*. **4** (3), pp. 208-231.

- Deshpande, S., Chreim, S., Bello, R., & Ross Evashkevich, T. , 2013. An exploration of seniors' relationships with prescription pharmaceutical brands: An application of “arranged marriage” metaphor framework. *International Journal of Pharmaceutical and Healthcare Marketing*, **7** (2), pp. 142-159.
- Diehl, Sandra, Barbara Mueller, and Ralf Terlutter. , 2008. Consumer responses towards non-prescription and prescription drug advertising in the US and Germany: they don't really like it, but they do believe it. *International Journal of Advertising* **27** (1), pp. 99-131.
- Dubinsky, Alan J., Marvin A. Jolson, Ronald E. Michaels, Masaaki Kotabe and ChaeUn Lim., 1992. Ethical Perceptions of Field Sales Personnel: An Empirical Assessment. *Journal of Personal Selling and Sales Management*, **Vol. XII** (Fall), pp. 9-21
- Doney, Patricia M., and Joseph P. Cannon., 1997. An examination of the nature of trust in buyer-seller relationships. *the Journal of Marketing* . pp. 35-51.
- Donovan, R. J. and J. R. Rossiter., 1982. Store Atmosphere: An Environmental Psychology Approach. *Psychology of Store Atmosphere*, **58** (1), pp. 34-57.
- Eccles, M. P., Hrisos, S., Francis, J., Kaner, E. F., Dickinson, H. O., Beyer, F., & Johnston, M., 2006. Do self-reported intentions predict clinicians' behaviour: a systematic review. *Implement Science*, **1** (1), pp. 28-50.
- Enis, B.M., 1967. An analytical approach to the concept of image. *California Management Review*. **9**, pp. 51-8.
- Ergin, E. A., Özdemir, H., & Özsaçmacı, B. , 2011. The Effect Of Brand Associations: A Field Study On Turkish Consumers. *International Business & Economics Research Journal (IBER)*. **5**(8), pp. 1-22
- Evans, Kenneth R., and Richard F. Beltramini., 1986. Physician acquisition of prescription drug information. *Journal of health care marketing*. **6** (4), pp. 15-25.
- Fan, X., Thompson, B., and Wang, L., 1999. Effects of Sample Size, Estimation Methods, and Model Specification on Structural Equation Modeling Fit Indexes. *Structural Equation Modeling*. **6** (1), pp. 56-83.
- Fassold, R. W., and C. W. Gowdey., 1968. A survey of physicians' reactions to drug promotion." *Canadian Medical Association Journal*. **98** (14), p. 701.
- Fennis, B. M., & Pruyn, A. T. H., 2007. You are what you wear: Brand personality influences on consumer impression formation. *Journal of Business Research*. **60** (6), pp. 634-639.
- Festinger, Leon, and James M. Carlsmith., 1959. Cognitive consequences of forced compliance." *The Journal of Abnormal and Social Psychology* **58** (2), pp. 203.
- Flatt, S. J. &Kowalczyk, S. J., 2006. *Corporate Reputation as a Mediating Variable between Corporate Culture and Financial Performance*. Academic Paper, Reputation Institute Conference.

- Fombrun, C.J. and van Riel, C.B.M., 1997. The reputational landscape. *Corporate Reputation Review*. **1** (1/2), pp. 6–13
- Fournier, S., & Yao, J. L., 1997. Reviving brand loyalty: A reconceptualization within the framework of consumer-brand relationships. *International Journal of Research in Marketing*, **14**(5), pp. 451-472.
- Fransen, M. L., & Lodder, P., 2010. The Effects of Experience-Based Marketing Communication on Brand Relation and Hedonic Brand Attitudes: The Moderating Role of Affective Orientation. *Advances in Consumer Research*. **37**, pp. 801-802.
- Fullerton Gordon., 2005. The Impact of Brand Commitment on Loyalty to Retail Service Brands", Canadian. *Journal of Administration and Sciences* **22** (2), pp. 97-110.
- Gaedeke RM, Tootelian DH, Sanders EE., 1999. Value of services provided by pharmaceutical companies: perceptions of physicians and pharmaceutical sales representatives. *Health Marketing Quarterly*, **17**, pp. 23–31.
- Gail Eaton & Peter Parish., 1976. Sources of Drug Information Used by General Practitioners: *Prescribing in General Practice*, 26 J. ROYAL C. GEN. PRAC. 58 (Supp. 1976).
- Ganesan, Shankar., 1994. Determinants of long-term orientation in buyer-seller relationships. *Journal of Marketing*. (1994): pp. 1-19.
- Gardberg, Naomi A., and Charles J. Fombrun., 2006. Corporate citizenship: Creating intangible assets across institutional environments. *Academy of management Review* **31** (2), pp. 329-346.
- Garbarino & Johnson S.Mark., 1999. The Different Roles of Satisfaction, Trust, and Commitment In Customer Relationships. *Journal of Marketing*. Vol.**63** (April 1999), pp. 70-87
- Gates and McDaniel., 1972. Profiling the utility image. *Public Relations Utilities Fortnightly*, **11**, pp. 32-9.
- Gehlbach, S. H., Wilkinson, W. E., Hammond, W. E., Clapp, N. E., Finn, A. L., Taylor, W. J., & Rodell, M., 1984. Improving drug prescribing in a primary care practice. *Medical care*, **22**(3), pp. 193-201.
- Geuens, M., Weijters, B., & De Wulf, K., 2009. A new measure of brand personality. *International Journal of Research in Marketing*, **26**(2), pp. 97-107.
- Gibbons, Robert V., et al., 1998. A comparison of physicians' and patients' attitudes toward pharmaceutical industry gifts. *Journal of General Internal Medicine* **13** (3), pp. 151-154.
- Godin, G., Bélanger-Gravel, A., Eccles, M., & Grimshaw, J., 2008. Healthcare professionals' intentions and behaviours: a systematic review of studies based on social cognitive theories. *Implement Scienced*, **3** (36), pp.1-12.

- Goodwin, M., 2004. The importance of brand continuity in epilepsy drugs. *Nursing Times*, **101**(25), pp. 26-37
- Gotsi, Manto, and Alan M. Wilson., 2001. Corporate reputation: seeking a definition. *Corporate Communications: An International Journal* **6** (1), pp. 24-30.
- Gönül, F. F., Carter, F., Petrova, E., & Srinivasan, K., 2001. Promotion of prescription drugs and its impact on physicians' choice behavior. *Journal of Marketing*, **65** (3), pp. 79-90.
- Goyal, R., & Pareek, P., 2013. A review article on prescription behavior of doctors, influenced by the medical representative in Rajasthan, India. *IOSR Journal of Business and Management*. **8** (1), pp.56-60.
- Greene, Jeremy A., 2004. Attention to 'details': etiquette and the pharmaceutical salesman in postwar American. *Social Studies of Science*. **34** (2), pp. 271-292.
- Grisaffe, D. B., & Nguyen, H. P., 2011. Antecedents of emotional attachment to brands. *Journal of Business Research*. **64** (10), pp.1052-1059.
- Grimshaw, J. M., Eccles, M. P., Walker, A. E., & Thomas, R. E., 2002. Changing physicians' behavior: what works and thoughts on getting more things to work. *Journal of Continuing Education in the Health Professions*. **22** (4), pp. 237-243.
- Groves KE, Sketris I, Tett SE., 2003. Prescription drug samples— does this marketing strategy counteract policies for quality use of medicines? *J Clin Pharm Ther*. **28**, pp. 90 –109.
- Guadagnoli E, Velicer WF., 1998. Relation of sample size to the stability of component patterns. *Psychological Bulletin*. **103** (2), pp. 265-75.
- Grunwald, Guido, and Bernd Hempelmann., 2010. Impacts of reputation for quality on perceptions of company responsibility and product-related dangers in times of product-recall and public complaints crises: Results from an empirical investigation. *Corporate Reputation Review* **13** (4), pp. 264-283.
- Guthrie, M. F., & Kim, H. S., 2009. The relationship between consumer involvement and brand perceptions of female cosmetic consumers. *Journal of Brand Management*, **17** (2), pp. 114-133.
- Güldal, D., and S. Semin., 2000. The influences of drug companies' advertising programs on physicians. *International Journal of Health Services* **30** (3), pp. 585-596.
- Gülöksüz, Sinan, E. Timuçin Oral, and Halis Ulaş., 2009. Attitudes and behaviors of psychiatry residents and psychiatrists working in training institutes towards the relationship between the pharmaceutical industry and physicians. *Türk Psikiyatri Dergisi*. **20** (3), pp. 236-42.

- Guthrie, M. F., & Kim, H. S., 2009. The relationship between consumer involvement and brand perceptions of female cosmetic consumers. *Journal of Brand Management*. **17** (2), pp. 114-133.
- Haefner, J. E., Deli-Gray, Z., Rosenbloom, A., 2011. The Importance of Brand Liking and Brand Trust in Consumer Decision Making: Insights from Bulgarian and Hungarian Consumers During the Global Economic Crisis. *Managing Global Transitions*, **9** (3), pp. 249–273.
- Hall, D. V., & Jones, S. C., 2007. Branding of prescription medicines to Australian consumers. *Australasian Marketing Journal (AMJ)*. **15** (2), pp. 97-107.
- He, H., Li, Y., & Harris, L. (2012). Social identity perspective on brand loyalty. *Journal of Business Research*. **65** (5), pp. 648-657.
- Handa, M., Vohra, A. and Srivastava, V., 2013. Perception of Physicians towards Pharmaceutical Promotion in India. *Journal of Medical Marketing: Device, Diagnostic and Pharmaceutical Marketing*, **13**, pp. 82-92.
- Hansen, F., & Scotwin, L., 1995. An experimental enquiry into sponsoring: what effects can be measured. *Marketing and Research Today*. **23** (3), pp. 173-181.
- Harrison, Richard T.- Mark, Hart., 1987. Innovation and Market Development: the Experience of Small firms in a Peripheral Economy. *International Journal of Management Science*. **15** (6), pp.445-454
- Hartmann, P., Ibanez, V. A., & Sainz, F. J. F., 2005. Green branding effects on attitude: functional versus emotional positioning strategies. *Marketing Intelligence & Planning*. **23**(1), pp. 9-29.
- He, H., Li, Y., & Harris, L., 2012. Social identity perspective on brand loyalty. *Journal of Business Research*. **65** (5), pp. 648-657.
- Heitmann, Mark, Lehman, Donald R., And Herrmann, Andreas., 2007. Choice Goal Attainment and Decision and Consumption Satisfaction, *Journal of Marketing Research*. **10**, p. 234-250.
- Helgeson, J. G., & Supphellen, M., 2004. A conceptual and measurement comparison of self-congruity and brand personality-The impact of socially desirable responding. *International Journal of Market Research*, **46** (2), pp. 205-233.
- Hellerstein, J. K., 1998. The importance of the physician in the generic versus trade-name prescription decision. *The Rand Journal of Economics*, pp. 108-136.
- Hess Jeff, Story John., 2005. Trust-Based Commitment: Multidimensional Consumer-Brand Relationships. *Journal of Consumer Marketing*. **22** (6), pp. 313-322.
- Henson, Robin K., and J. Kyle Roberts., 2006. Use of exploratory factor analysis in published research common errors and some comment on improved practice. *Educational and Psychological measurement* **66** (3), pp. 393-416.

- Hieronimus, F., 2003. Persönlichkeitsorientiertes Markenmanagement, Peter Lang, Frankfurt am Main
- Hill, R., 1998. What sample size is “enough” in internet survey research? *Interpersonal Computing and Technology: An Electronic Journal for the 21st Century*. **6** (4), pp. 1-12.
- Hoeffler, S., & Keller, K. L., 2002. Building brand equity through corporate societal marketing. *Journal of Public Policy & Marketing*. **21** (1), pp. 78-89.
- Hooper, D., Coughlan, J., & Mullen, M. R., 2008. Structural equation modelling: Guidelines for determining model fit. *The Electronic Journal of Business Research Methods*. **6**, pp. 53–60.
- Horn, J. L., 1965. A rationale and test for the number of factors in factor analysis. *Psychometrika*. **30** (2), pp. 179-185.
- Hossain, M.M., Kawsar, S., Tanmy, T.T., & Yousuf., 2013. Assessment of influencing factors on prescription practices of physicians in Bangladesh. *International Research Journal of Pharmacy*, **4** (8), pp. 112-116.
- Hu, Li-tze, and Peter M. Bentler., 1999. Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives." *Structural equation modeling: a multidisciplinary journal*. **6** (1), pp. 1-55.
- Hoffman, KD., Howe, V. and Hardigree, D.W., 1991. Ethical Dilemmas Faced in the Selling of Complex Services: Significant Others and Competitive Pressures. *Journal of Personal Selling and Sales Management*. **11**, pp. 13-25
- Inglis, R, Morley, C & Sammut, P., 2006. Corporate reputation and organizational performance: an Australian study. *Managerial Auditing Journal*. **21**, pp. 934 – 947.
- Ion, L.M. , 2013. Qualitative study on physicians’ motivations and drug prescribing behavior. *CES Working Papers*, 29-40.
- James, C. D., Peabody, J., Solon, O., Quimbo, S., & Hanson, K., 2009. An unhealthy public-private tension: pharmacy ownership, prescribing, and spending in the Philippines. *Health Affairs*. **28** (4), pp. 1022-1033.
- Jevons, C., 2005. Names, brands, branding: beyond the signs, symbols, products and services. *Journal of Product & Brand Management*. **14** (2), pp. 117-118.
- Johnson, D. W. and S. Johnson., 1972. The Effects of Attitude Intensity, Expectation of Goal Facilitation, and Actual Goal Facilitation, and Interpersonal attraction. *Journal of Experimental Social Psychology*. **8** (3), pp. 197-206.
- Jung, Jaehee, and Eunyoung Sung., 2008. Consumer-based brand equity: Comparisons among Americans and South Koreans in the USA and South Koreans in Korea. *Journal of Fashion Marketing and Management: An International Journal* **12** (1), pp. 24-35.

- Junior Ladeira, Wagner, et al., 2011. Drug prescription practices in Brazil: a structural equation model. *International Journal of Pharmaceutical and Healthcare Marketing*. 5 (4), pp. 262-278.
- Keller, K. L. (1993). Conceptualizing, measuring, and managing customer-based equity. *Journal of Marketing*. 57 (1), pp. 1-22.
- Kennedy, S.H., 1977. Nurturing corporate images: total communication or ego trip?. *European Journal of Marketing*. 11 (3), pp. 120-64.
- Kenny, D.A. and McCoach, D.B., 2003. Effect of the Number of Variables on Measures of Fit in Structural Equation Modeling. *Structural Equation Modeling*. 10 (3), pp. 333-51.
- Klemenc-Ketis, Zalika, and Janko Kersnik., 2013. The assessment of pharmaceutical sales representatives by family physicians—does it affect the prescribing index?. *Family practice*. 30 (3), pp. 320-324.
- Kuenzel, S., & Vaux Halliday, S., 2008. Investigating antecedents and consequences of brand identification. *Journal of Product & Brand Management*. 17(5), pp. 293-304.
- Kumar, S.J. and R.K. Srivastava, 2013. An exploratory study of product and brand positioning typologies with respect to pharmaceutical companies. *Rev. Integr. Bus. Econ. Res.*, 2: 638-654.
- Ladha, Z., 2007. Marketing strategy: are consumers really influenced by brands when purchasing pharmaceutical products?. *Journal of Medical Marketing: Device, Diagnostic and Pharmaceutical Marketing*, 7 (2), pp. 146-151.
- Lagace, Rosemary R., Robert Dahlstrom, and Jule B. Gassenheimer., 1991. The relevance of ethical salesperson behavior on relationship quality: The pharmaceutical industry. *Journal of Personal Selling & Sales Management* 11 (4), pp. 39-47.
- Lardinoit, T., & Derbaix, C., 2001. Sponsorship and recall of sponsors. *Psychology & Marketing*, 18 (2), pp. 167-190.
- Laurent, G., Kapferer, J.-N., Roussel, F., 1995. The Underlying Structure of Brand Awareness Scores. *Marketing Science* 14 (3), p. 170-179.
- Lee, H. Lee, C. & Wu, C., 2011. Brand image strategy affects brand equity after M&A. *European Journal of Marketing*. 45 (7/8), pp. 1091-1111.
- Leonard, Erica, and Lea Prevel Katsanis., 2013. The dimensions of prescription drug brand personality as identified by consumers. *Journal of Consumer Marketing*. 30 (7), pp. 583-596.
- Ljubojevic, C. & Ljubojevic, G., (2008). Building corporate reputation through corporate governance. *Management*. 3, pp. 221–233.

- Lichstein PR, Turner RC, O'Brien K , 1992. Impact of pharmaceutical company representatives on internal medicine residency programs. *Archives of Internal Medicine*. **152**, pp. 1009–1013.
- Lundin, D., 2000. Moral hazard in physician prescription behavior. *Journal of Health Economics*. **19** (5), pp. 639-662.
- Lurie, Nicole, et al., 1990. Pharmaceutical representatives in academic medical centers. *Journal of General Internal Medicine*. **5** (3), pp. 240-243.
- MacCallum, R.C., Browne, M.W., and Sugawara, H., 1996. Power Analysis and Determination of Sample Size for Covariance Structure Modeling, *Psychological Methods*. **1** (2), pp. 130-49.
- Malik, M. E., Ghafoor, M. M., Iqbal, H. K., Riaz, U., ul Hassan, N., Mustafa, M., & Shahbaz, S., 2013. Importance of brand awareness and brand loyalty in assessing purchase intentions of consumer. *International Journal of Business and Social Science*. **4** (5), pp. 167-171.
- McDonald, R. P. and Ho, M.-H.R., 2002. Principles and practice in reporting statistical equation analyses. *Psychological Methods*. **7** (1), pp. 64-82.
- McIntosh, C., 2006. Rethinking fit assessment in structural equation modelling: A commentary and elaboration on Barrett. *Personality and Individual Differences*. **42** (5), pp. 859-67.
- Madhavan, Shantha, et al., 1997. The gift relationship between pharmaceutical companies and physicians: an exploratory survey of physicians. *Journal of clinical pharmacy and therapeutics*. **22** (3), pp. 207-218.
- Manchanda, Puneet, and Elisabeth Honka., 2005. Effects and Role of Direct-to-Physician Marketing in the Pharmaceutical Industry: An Integrative Review, *The Yale J. Health Pol'y L. & Ethics*. **5**, pp. 785.
- Mantel, Susan, Powell., 2005. Choice or perception: How affect influences choices among salespeople. *Journal of Personal Selling & Sales Management*. **30** (1), pp. 43–55.
- Martisiute, S., Vilutyte, G., & Grundey, D., 2010. Product or brand? How interrelationship between customer satisfaction and customer loyalty work. *European Journal of Interdisciplinary Studies*, **1** (2), pp. 5-15.
- Markowski, Carol A.; Markowski, Edward P., 1990. Conditions for the Effectiveness of a Preliminary Test of Variance. *The American Statistician* **44** (4), pp. 322–326.
- Martineau, P., 1958. The personality of the retail store. *Journal of Retailing*, **52** (Fall), pp. 37-46
- Matthiesen, I. M., & Phau, I., 2010. Brand image inconsistencies of luxury fashion brands: A buyer-seller exchange situation model of Hugo Boss Australia. *Journal of Fashion Marketing and Management*, **14** (2), pp. 202-218.

- McKinney, W. Paul, et al., 1990. Attitudes of internal medicine faculty and residents toward professional interaction with pharmaceutical sales representatives. *Jama* **264** (13), pp. 1693-1697.
- Meenaghan, Tony., 2001. Understanding sponsorship effects. *Psychology & Marketing* **18** (2), pp. 95-122.
- Methlie, Leif B., and Herbjorn Nysveen., 1999. Loyalty of on-line bank customers. *Journal of Information Technology* **14** (4), pp. 375-386.
- Miles, J. and Shevlin, M., 1998. Effects of sample size, model specification and factor loadings on the GFI in confirmatory factor analysis. *Personality and Individual Differences*. **25**, pp. 85-90.
- Monaghan, Michael S., et al., 2003. Student understanding of the relationship between the health professions and the pharmaceutical industry. *Teaching and learning in medicine*. **15** (1), pp. 14-20.
- Morelli D, Koenigsbert MR., 1992. Sample medication dispensing in a residency practice. *The Journal of Family Practice*. **34**, pp. 42-48.
- Morgan, M. A., et al., 2006. Interactions of doctors with the pharmaceutical industry. *Journal of Medical Ethics*. **32** (10), pp. 559-563.
- Moss, Giles., 2001. Pharmaceutical brands: Do they really exist?. *Journal of Medical Marketing: Device, Diagnostic and Pharmaceutical Marketing*. **2** (1), pp. 23-32.
- Moss G, Schuiling I., 2003. A brand logic for pharma?: A possible strategy based on FMCG experience. *International Journal of Medical Marketing*, **4** (1), pp. 55-62
- Mulaik, S.A., James, L.R., Van Alstine, J., Bennet, N., Lind, S., and Stilwell, C.D., 1989. Evaluation of Goodness-of-Fit Indices for Structural Equation Models. *Psychological Bulletin*. **105** (3), pp. 430-45.
- Muniz Jr, A. M., & O'guinn, T. C., 2001. Brand community. *Journal of Consumer Research*. **27** (4), pp. 412-432.
- Nam, J., Ekinci, Y., & Whyatt, G., 2011. Brand equity, brand loyalty and consumer satisfaction. *Annals of Tourism Research*. **38** (3), pp. 1009-1030.
- Nandan, S., 2005. An exploration of the brand identity-brand image linkage: Acommunications perspective. *Journal of Brand Management*. **12** (4), pp. 264-278.
- Ogba, I. & Tan, Z., 2009. Exploring the impact of brand image on customer loyalty andcommitment in china. *Journal of Technology Management in China*. **4** (2), pp. 132-144.
- Orlowski, James P. Wateska, Leon., 1992. The effects of pharmaceutical firm enticements on physician prescribing patterns: there's no such thing as a free lunch. *Chest*. **102**, pp. 270-273.

- Pappu, R., & Quester, P., 2006. Does customer satisfaction lead to improved brand equity? An empirical examination of two categories of retail brands. *Journal of Product & Brand Management*. **15** (1), pp. 4-14.
- Peay, Marilyn Y., and Edmund R. Peay.,1988. The role of commercial sources in the adoption of a new drug." *Social science & medicine*. **26** (12), pp. 1183-1189.
- Peterson,R.A., 1994. A meta-analysis of Cronbach's coefficient alpha. *Journal of Consumer Research*. **21**, pp. 381–391.
- Pilling, D., 2000. Drug groups wrestle with seismic shifts in business practices. *Financial Times Survey of Life Sciences & Pharmaceuticals*. **6**, pp. 1-17.
- Pine, B. J., & Gilmore, J. H., 1998. Welcome to the experience economy. *Harvard business review*. **76**, pp. 97-105.
- Pitt, Leyland, and Deon Nel., 1988. Pharmaceutical promotion tools-their relative importance. *European Journal of Marketing*. **22** (5), pp. 7-14.
- Pitta, D. A., &Katsanis, L. P., 1995. Understanding brand equity for successful brand extension. *Journal of consumer marketing*. **12** (4), pp. 51-64.
- Plummer, J. T., 1985. Brand personality: A strategic concept for multinational advertising. In *Marketing Educators' Conference* (pp. 1-31). New York, NY: Young & Rubicam.
- Ponzi, Leonard J., Charles J. Fombrun, and Naomi A. Gardberg., RepTrak™ Pulse: Conceptualizing and validating a short-form measure of corporate reputation. *Corporate Reputation Review*. **14** (1), pp. 15-35.
- Prosser, H., Almond, S., &Walley, T., 2003. Influences on GPs' decision to prescribe new drugs—the importance of who says what. *Family Practice*,. **20** (1), pp. 61-68.
- Reynolds, K. E., & Arnold, M. J., 2000. Customer loyalty to the salesperson and the store: Examining relationship customers in an upscale retail context. *Journal of Personal Selling & Sales Management*. **20** (2), pp. 89-98.
- Roberts, P. W. & Dowling, G. R., 2002. Corporate reputation and sustained superior financial performance.*Strategic Management Journal*. **23**, pp. 1077–1093.
- Román, Sergio, and José Luis Munuera., 2005. Determinants and consequences of ethical behaviour: an empirical study of salespeople. *European Journal of Marketing*. **39** (6), pp. 473-495.
- Román, Sergio., 2003. The Impact of Ethical Sales Behaviour on Customer Satisfaction, Trust and Loyalty tothe Company: An Empirical Study in the Financial Services Industry. *Journal of Marketing Management*. **19** (10), pp. 915–939.
- Román, Sergio, and Salvador Ruiz., 2005. Relationship outcomes of perceived ethical sales behavior: the customer's perspective. *Journal of Business Research* **58** (4), pp. 439-445.

- Rotter, Julian B., 1980. Interpersonal trust, trustworthiness, and gullibility. *American psychologist*. **35** (1), pp.1
- Sahin, Azize, Cemal Zehir, and Hakan Kitapçı., 2011. The effects of brand experiences, trust and satisfaction on building brand loyalty; an empirical research on global brands." *Procedia-Social and Behavioral Sciences*. **24**, pp. 1288-1301.
- Sandler, D. M., &Shani, D., 1993. Sponsorship and the Olympic Games: The consumer perspective. *Sport Marketing Quarterly*. **2** (3), pp. 38-43.
- Sattar, I. &Maqsood, A. A., 2003. Marketing MixModel for Pharmaceutical Industry - APakistaniPerspective.*The Journal of Independent Studies andResearch*, **1** (2), pp. 38-56.
- Saurabh, M. K., Yadav, A. K., Gupta, P., Singhai, A., &Saurabh, A., 2010. Comparative study of prescribing behaviors of government doctors of teaching hospital and private practitioners in Jhalawar City (Rajasthan). *Journal of Pharmacy Sceinces Research*. **2**, pp. 208-15.
- Schafhauser., 1967. How to keep your company image. *Public Relations Journal*. October, p. 52.
- Schwaiger, M., 2004. Components and parameters of corporate reputation – an empirical study. *Schmalenbach Business Review*. **56**, pp. 46 – 71.
- Schuiling, I., & Moss, G., 2004. How different are branding strategies in the pharmaceutical industry and the fast-moving consumer goods sector?. *The Journal of Brand Management*. **11**(5), pp. 366-380.
- Segars, A.H., and Grover, V., 1993. Re-Examining Perceived Ease of Use and Usefulness: A Confirmatory Factor Analysis. *MIS Quarterly*. **17** (4), pp. 517-522.
- Sergeant, Myles D., et al., 1996. Interactions with the pharmaceutical industry: a survey of family medicine residents in Ontario. *CMAJ: Canadian Medical Association Journal* **155** (9), pp. 1243.
- Sergio Román & José Luis Munuera., 2005. Determinants and Consequences of Ethical Behaviour: An Empirical Study of Salespeople. *European Journal of Marketing*, **39** (5), pp 473–495.
- Sivadas, E., & Baker-Prewitt, J. L., 2000. An examination of the relationship between service quality, customer satisfaction, and store loyalty. *International Journal of Retail & Distribution Management*. **28** (2), pp. 73-82.
- Shamimulhaq, S., Raheem, A. R., Nawaz, A., Khoso, I., & Vishnu, P., 2014. Factors Influencing Prescription Behavior of Physicians. *The Pharma Innovation Journal*. **3** (5), pp. 30-35.
- Sharma, A., 2001. Consumer decision-making, salespeople's adaptive selling and retail performance. *Journal of Business Research*, **54** (2), pp. 125-129

- Sharma, S., Mukherjee, S., Kumar, A., and Dillon, W.R., 2005. A simulation study to investigate the use of cutoff values for assessing model fit in covariance structure models. *Journal of Business Research*. **58** (1), pp. 935-43.
- Sheeran, P., 2002. Intention—behavior relations: A conceptual and empirical review. *European review of social psychology*. **12** (1), pp. 1-36.
- Sheff, J., 2011. The Ethics of Unbranding. *Fordham Intellectual Property, Media & Entertainment Law Journal*. **21**, pp. 983.
- Sierra, Jeremy J., and Shaun McQuitty., 2005. Service providers and customers: social exchange theory and service loyalty." *Journal of Services Marketing*. **19** (6) , pp. 392-400.
- Singhapakdi, Anusorn, and Scott J. Vitell., 1993. Personal and professional values underlying the ethical judgments of marketers. *Journal of Business Ethics* **12** (7) pp. 525-533.
- Smith, M. C., Kolassa, E. M., Perkins, G., & Siecker, B., 2002. Pharmaceutical Marketing: Principles. *Environment, and Practice*. Pharmaceutical Product Press, Binghamton, New York.
- Song, Y., Won-Moo Hur, & Kim, M., 2012. Brand trust and affect in the luxury brand-customer relationship. *Social Behavior & Personality: An International Journal*. **40** (2), pp. 331-338.
- Spangenberg, E. R., Crowley, A. E., and P. W. Henderson., 1996. Improving the Store Environment: Do Olfactory Cues Affect Evaluations and Behaviors? *Journal of Marketing*. **60**, pp. 67-80.
- Spiller LD, Wymer WW., 2001. Physicians' perceptions and uses of commercial drug information sources: an examination of pharmaceutical marketing to physicians. *Health Marketing Quarterly*. **19**, pp. 91–106.
- Srivastava, R. K., Fahey, L., & Christensen, H. K., 2001. The resource-based view and marketing: The role of market-based assets in gaining competitive advantage. *Journal of management*. **27** (6), pp. 777-802.
- Steiger, J.H., 1990, Structural model evaluation and modification. *Multivariate Behavioral Research*. **25**, pp. 214-12.
- Subba Rao, C.S., 1990. Pharmaceutical Marketing in India. Concepts Cases and Strategy, 1st sub ed. *Hyderabad: Asian Institute of Pharmaceutical Marketing*. pp. 244-258.
- Suh, Jung-Chae and Youjae Yi., 2006, When Brand Attitudes Affect the Customer Satisfaction-Loyalty Relation: The Moderating Role of Product Involvement, *Journal of Consumer Psychology*. **16**, pp. 145-155.
- Sung, Y., & Tinkham, S. F., 2005. Brand personality structures in the United States and Korea: Common and culture-specific factors. *Journal of consumer psychology*. **15** (4), pp. 334-350.,

- Sung, Y. and Kim, J., 2010. Effects of brand personality on brand trust and brand affect. *Psychology & Marketing*. **27** (7), pp. 639-661.
- Supphellen, Magne, and Kjell Grønhaug., 2003. Building foreign brand personalities in Russia: the moderating effect of consumer ethnocentrism." *International Journal of Advertising*. **22** (2) , pp. 203-226.
- Swan, John E., I. Fredrick Trawick, and David W. Silva., 1985. How industrial salespeople gain customer trust. *Industrial Marketing Management* **14** (3), pp. 203-211.
- Syed S. Andaleeb & Robert F., 1996. Tallman, Relationships of Physicians with Pharmaceutical Sales Representatives and Pharmaceutical Companies: An Exploratory Study, 13 *Journal of Health Marketing*. **79**, pp. 84-85.
- Taylor, S. A., & Baker, T. L., 1994. An assessment of the relationship between service quality and customer satisfaction in the formation of consumers' purchase intentions. *Journal of retailing*. **70** (2), pp. 163-178.
- Taylor, S. A., Celuch, K., & Goodwin, S., 2004. The importance of brand equity to customer loyalty. *Journal of product & brand management*. **13**(4), pp. 217-227
- Taylor, ROSS J., and CHRISTINE M. Bond., 1991. Change in the established prescribing habits of general practitioners: an analysis of initial prescriptions in general practice. *British Journal of General Practice*. **41** (347), pp. 244-248.
- Torres-Moraga, E., Vasquez-Parraga, A.Z., Zamora-Gonza'lez, J. 2008. Customer satisfaction and loyalty: start with the product, culminate with the brand. *Journal of Consumer Marketing*. **25** (5), pp. 302-313.
- Teven JJ, Winters JL., 2007. Pharmaceutical representatives' social influence behaviors and communication orientations: relationships with adaptive selling and sales performance. *Human Communication* **10**, pp. 465-86
- Thomson, A. N., B. J. Craig, and P. M. Barham., 1994. Attitudes of general practitioners in New Zealand to pharmaceutical representatives. *British Journal of General Practice*. **44** (382), pp. 220-223.
- Tsai, S. P. (2011). Fostering international brand loyalty through committed and attached relationships. *International Business Review*, 20(5), 521-534.
- Tsaur, S. H., Chiu, Y. T., & Wang, C. H., 2007. The visitors behavioral consequences of experiential marketing: An empirical study on Taipei Zoo. *Journal of Travel & Tourism Marketing*. **21** (1), pp. 47-64.
- Ulusu, Y., 2011. Effects of brand image on brand trust. *Journal of Yasar University*. **6** (24), pp. 3932-3950.
- Vasiljev, Stevan, and Darko Pantelic., 2010. Pharmaceutical Market (ing): Theory and Reality. *Theory Methodology Practice*. **6**, pp. 85-91.

- Vashi, Neelam A., and Jo-Ann M. Latkowski., 2012. The ethics of the medical-pharmaceutical relationship. *Clinics in dermatology*. 30 (2), pp. 188-191.
- Vasquez-Parraga, A., & Alonso, S., 2000. Antecedents of customer loyalty for strategic intent. In J. Workman & W. Perrault (Eds.), *Marketing theory and applications* (pp. 82–83). Chicago: American Marketing Association
- Viitanen, K., 2004. Brand in Real Estate Business–Concept, Idea, Value?. In *FIG Working Week* . 4, pp. 1-9.
- Wang, Richard Y., and Diane M. Strong., 1996. Beyond accuracy: What data quality means to data consumers. *Journal of Management Information Systems*. Pp. 5-33.
- Wang, H., Li, N., Zhu, H., Xu, S., Lu, H., & Feng, Z., 2013. Prescription pattern and its influencing factors in Chinese county hospitals: A retrospective cross-sectional study. *PloS one*, 8(5), e63225.
- Wazana, Ashley., 2000. Physicians and the pharmaceutical industry: is a gift ever just a gift?. *JAMA* **283** (3), pp. 373-380.
- Weiwei, T., 2007. Impact of corporate image and corporate reputation on customer loyalty: a review. *Management Science and Engineering*, **1**, pp. 57-62.
- Weilbaker, Dan C., 1990. The identification of selling abilities needed for missionary type sales. *Journal of Personal Selling & Sales Management* **10** (3), pp. 45-58.
- Williams, Brett, Ted Brown, and Andrys Onsman. , 2010. Exploratory factor analysis: A five-step guide for novices." *Australasian Journal of Paramedicine*. **8** (3), pp.1.
- Wood, L., 2000. Brands and brand equity: definition and management. *Management decision*. 38 (9), 662-669.
- Wood, L. M., & Pierson, B. J., 2006. The brand description of Sainsbury's and Aldi: price and quality positioning. *International Journal of Retail & Distribution Management*. **34** (12), pp. 904-917.
- Wray, B., Palmer, A. and Bejou, D., 1994. Using Neural Network Analysis to Evaluate Buyer-Seller Relationships", *European Journal of Marketing*. **28** (10), pp.32-48
- Wright, S., 1921. Correlation and causation. *Journal of Agricultural Research*. **20**, pp. 557–585.
- Wright, Robert F., and William J. Lundstrom., 2004. Physicians' perceptions of pharmaceutical sales representatives: a model for analysing the customer relationship." *Journal of Medical Marketing: Device, Diagnostic and Pharmaceutical Marketing*. **4** (1), pp. 29-38.
- Yi Youjae And Suna La., 2004. What Influences The Relationship Between Customer Satisfaction And Repurchase Intention? Investigating The Effects of Adjusted Expectations and Customer Loyalty. *Psychology & Marketing*. **21** (5), p. 351-373.

- Yoo, B., & Donthu, N., 2001. Developing and validating a multidimensional consumer-based brand equity scale. *Journal of business research*. **52** (1), pp. 1-14.
- Youl Hong Ha; Perks, Helen., 2005. Effect of Consumer Perceptions of Brand Experience on The Web; Brand Familiarity, Satisfaction and Brand Trust. *Journal of Consumer Behavior*. **4** (6), p.438-452.

Other Publications

- A.O.Sykes "An Introduction to Regression Analysis", [online] Available: <http://www.law.uchicago.edu/files/files/20.Sykes..Regression.pdf> [accessed 05 March 2015].
- Aitken (2007): "IMS Health Forecasts 5 to 6 Percent Growth for Global Pharmaceuticals Market in 2007", Available at www.imshealth.com.
- Bilgic, H.E. (2007). The effect of store atmosphere on store loyalty intentions of department store customers. *Unpublished Master's Thesis*, Marmara University, Social Sciences Institute, Istanbul.
- Belli, S. (2011). The effects of brand associations on consumers' brand attitude, brand loyalty, brand preference and brand satisfaction in Turkish cola market for teenagers aged between 12 and 19. *Unpublished Master's Thesis*, Marmara University, Social Sciences Institute, Department of Production Management and Marketing, İstanbul.
- Botha, E., Sanders, A. & Viljoen, O. (2009). Corporate Reputation and Service Firms: Which Elements Impact Consumer Choice? The Impact of Corporate Reputation on Learners' Choice of University. Melbourne: Proceedings of ANZMAC Sustainable Management and Marketing Conference.
- Bülbüloğlu, S. (2014). The influencers of prescription decision and the relationship between doctors ethnocentric tendencies and prescription decision. *Unpublished Master's Thesis*, Yeditepe University, Department of Business Administration, Istanbul.
- Civaner, M., 2006. Türkiye'deki İlaç Şirketlerinin Kullandıkları Pazarlama Yöntemleri ve Hekimlerin Bu Konudaki Değerlendirmelerinin Etik Açısından Sorgulanması. *Unpublished doctorate thesis*. Ankara: Ankara Üniversitesi Sağlık Bilimleri Enstitüsü.
- Demirkıran, M., 2010. Hekimlerin ilaç reçeteleme davranışlarını etkileyen faktörlerin incelenmesi. *Unpublished master thesis*. Ankara: Hacettepe Üniversitesi Sağlık Bilimleri Enstitüsü.
- Garson, G. David. "Path analysis." *from Statnotes: Topics in Multivariate Analysis*. [accessed 28 April 2015]
- Girdharwal, N., Singh, A. (2007) A Study of Physicians Behaviour toward Marketing of Pharmaceutical Products (A Case Study of Indian Market, Vol.5, Issue, 6, 2007, available at <http://www.pharmainfo.net/>.
- Grütmacher, A. (2011). Reputation 2.0: The role of social media in corporate reputation - Case Nokia. *Unpublished Master of Arts Thesis*, Aalto University, Aalto.

- Harrison, K. Why a good corporate reputation is important to your organization. *Cutting Edge PR* http://www.cuttingedgepr.com/articles/corprep_important.asp [accessed 28 April 2015]
- İEİS, Yıllık Rapor, 2014, <http://www.ieis.org.tr/ieis/en/indicators/33/turkiye-ilac-pazari> [accessed 01.03.2015].
- Kaan, E, V., 1981. Specialty advertising and an empirical study in the Turkish pharmaceutical industry. *Unpublished master thesis*. Istanbul: Istanbul Boğaziçi Üniversitesi SBE.
- Kaiser Family Foundation. Trends and indicators in the changing health care marketplace; 2005. Available from: <http://www.kff.org/insurance/7031/ti2004-1-20.cfm> [downloaded 01.03.2015].
- Karaköse,T., (2006). The internal and external shareholders Perceptions regarding corporate reputation in educational organizations *Unpublished PhD thesis*, Fırat University Social Sciences Institute.
- Ladha, Z. (2005). The significance of branding in the pharmaceutical industry, *Unpublished Doctoral Dissertation*, Faculty of Business Administration-Simon Fraser University.
- Lückerath, B. (2011). How brands become people. *Unpublished Master's Thesis*, Copenhagen Business School, Department of Marketing Communication Management, Denmark
- Macdonald, E., & Sharp, B. (2003). Management perceptions of the importance of brand awareness as an indication of advertising effectiveness. *Unpublished Doctoral dissertation*, Massey University, Department of Marketing.
- Magno-Gatmaytan, M. C. D. (2013). Influencing physician prescribing behavior: direct-to-consumer advertising and the demand for me-too drugs, 1-149. Available at http://iris.lib.neu.edu/law_pub_pol_diss/13/
- Namati, A. R. (2009). Factors determining brand image, product comparison of proctor & gamble & uniliver of pakistan. *Unpublished manuscript*.
- Nayir, G., (2007). Türk İlaç Sektöründe Tutundurma Faaliyetleri. *Thesis for M.A Degree*. Sakarya: Sakarya Üniversitesi
- Nielsen, 2015. The reputation of most visible companies. <http://www.nielsen.com/us/en/insights/reports/2014/the-reputations-of-the-most-visible-companies.html> [accessed 07.03.2015]
- Onaran, D., 1987. Effectiveness of promotional activities of pharmaceutical firms: A comparative study among three multinational pharmaceutical firms in Turkey. *Unpublished master thesis*. Istanbul: Istanbul Boğaziçi Üniversitesi SBE.
- Özbay, B., 1981. The Pharmaceutical Industry in Turkey. *Unpublished master thesis*. Istanbul: Istanbul Boğaziçi Üniversitesi SBE.

- Parkinson, G., & Drislane, R. (2011). Qualitative research. In Online dictionary of the social sciences. Retrieved from <http://bitbucket.icaap.org/dict.pl>
- Qian-Li Xue., 2007, Introduction to Path Analysis [online], The Johns Hopkins University, <http://ocw.jhsph.edu/courses/structuralmodels/PDFs/Lecture3.pdf> [accessed 05 March 2015].
- Guide to citing internet sources [online], Poole, Bournemouth University, <http://www.bournemouth.ac.uk/library/using/guide> to citing internet source.html [accessed 4 November 2014]
- Sağlık Bakanlığı, 2015. .Türkiyede Sağlık Eğitimi ve Sağlık İnsangücü durum raporu <http://www.sb.gov.tr/TR/belge/1-2952/istatistik-yilliklari.html> [accessed 01 March 2015].
- Sakman, N.F. (2003). Kurumsal İtibarın Önemi ve Değişkenleri İncelemesi. *Unpublished Master's Thesis* İstanbul University, Social Sciences Institute, İstanbul.
- Seget, S.,2006. Pharmaceutical Branding Strategies [online], Business Insights, <http://www.amcp.org/WorkArea/DownloadAsset.aspx?id=11573> [accessed 24 February 2015]
- States, Marc., 2008. Understanding Why Physicians Choose A Certain Drug When Treating A Patient – What Product Attributes Matter Most <http://www.lexjansen.com/nesug/nesug08/ph/ph10.pdf> [accessed 24 February 2015]
- Strausbaugh, K. L. (1998). " Miss Congeniality" Or" No More Mr. Nice Guy?": On a Method for Assessing Brand Personality and Building Brand Personality Profiles. *Unpublished Doctoral Dissertation*, University of Florida
- Vural, Z. (2013). Determinants of brand equity dimensions: a consumer based model incorporating product value, brand trust-affect, risk aversion, country image and involvement. *Unpublished Master's Thesis*, İstanbul Technical University, Institute of Science and Technology, İstanbul
- Wolf, S. A. (2010). Corporate Image Building. Available at <http://fashionaccelerator.dk/file/127679/et.pdf> [accessed 24 February 2015]
- Yılmaz, P. (2008). Online marketing activities of pharmaceutical firms and their effects on physicians' prescription behavior. *Thesis for the M.A Degree*, İstanbul: İstanbul Technical University, Management Engineering Department.
- Zhang, X. (2011).Essays on social influence in shopper marketing.*Unpublished Doctorate Dissertation*, Kelley School of Business Indiana University.Available at Proquest.

APPENDICES

Appendix 1: Interview Questions

- i. What do you think about the corporate reputation in the pharmaceutical industry?
 - a. Do you think that it is important?
 - b. Do you think that it impacts the prescription behavior?
 - c. Which corporate reputation dimension is important from your side ?
(emotional appeal, social responsibility, financial dimension...)
- ii. What do you think about the pharmaceutical sales representatives in the pharmaceutical industry?
 - a. How many times you are visited by PSR per day?
 - b. Do you believe that they have mission to provide medical knowledge to you?
 - c. Do you think the social contact with the PSR impact your prescription decision?
 - d. Which dimension is the most important from your side? Frequent social contact or ethical behavior?
- iii. Do you think that pharmaceutical marketing activities impact your decision?
 - a. Do you think that companies should reward you for prescribing the related products?
 - b. Do you think that free samples convince you to try the product?
- iv. What do you think about the product that is chosen for our study?
- v. Do you think that it is possible to attribute personality to pharmaceutical drugs?
 - a. Which brand personality dimension you think that fit with the chosen product?
 - b. Do you prescribe this product and what comes to your mind first?

- vi. What do know about this product's perceived quality?
 - a. Is it the first line treatment method?
 - b. Is it recommended in the guidelines?
- vii. What do you think about the study model?
 - a. Which factor in your opinion is the most important factor from your side?
 - b. Do you have any additional factor to model?

Appendix 2: Main Study Questionnaire in Turkish



Sayın Katılımcı;

Bu anket, Bahçeşehir Üniversitesi İşletme doktora programı kapsamında yapılan tez için bir çalışma olup, ilaç sektöründeki firma ve marka unsurlarıyla ilgili ilişkiler incelenecektir. Bu nedenle, sizin değerli görüş ve katkılarınız bu çalışma için son derece önemlidir. Bu çalışma bilimsel olup, elde edilecek veriler ve kişisel bilgiler herhangi bir kamu, özel veya resmi bir kurum ile paylaşılmayacaktır. Akademik amaçlı bu çalışmanın doğru ve güvenilir bilgi vermesi için soruları tarafsız bir şekilde değerlendirmeniz önem taşımaktadır. Soruları değerlendirirken, Türk ilaç sektöründe kullanımı en yaygın ürünlerden biri olan X markalı ürünü ve firmasını düşünerek değerlendirmenizi rica ederiz. Çalışmamıza yaptığınız katkılardan dolayı çok teşekkür ederiz.

X ilacını hastalarınıza reçeteler misiniz?		☐ Evet	☐ Hayır (eğer cevabınız hayır ise anketimize harcadığınız zaman için teşekkür ederiz)	
Evet ise ne sıklıkla reçetelersiniz ?	Haftada 1-5	Haftada 6-10	Haftada 11-20	Diğer (.....)

Lütfen aşağıdaki cetvelden her tanım için en uygun değerlendirme puanını seçiniz ve yandaki kutucuğa yazınız.

Kesinlikle Katılmıyorum	Katılmıyorum	Ne katılıyorum Ne katılmıyorum	Katılıyorum	Kesinlikle Katılıyorum
1	2	3	4	5

Lütfen aşağıdaki yargıları X markasının firmasını düşünerek ne ölçüde katıldığınızı belirtiniz...	
Firmaya sempati duyuyorum	
Firmayı beğeniyorum	
Firmaya itibar ediyorum	
Firmaya çok güveniyorum	
Firma ürünlerinin/hizmetlerinin arkasında durur	
Firma yenilikçi ürünler/hizmetler geliştirir	
Firma yüksek kalitede ürünler/hizmetler sunar	
Firmanın ürün/hizmetleri ödenen bedele değer.	
Firmanın güçlü karlılık sicili vardır	
Firma düşük riskli yatırım gibi görünür	
Gelecekteki büyüme için güçlü olasılığı olan bir şirket gibidir	

Lütfen aşağıdaki yargıları X markasının firmasını düşünerek ne ölçüde katıldığınızı belirtiniz...	
Firma rakiplerinden daha iyi performans gösterir	
Firma liderliğe sahiptir	
Firma gelecek için net bir vizyona sahiptir	
Firma pazardaki fırsatları görerek avantaja çevirmekte başarılıdır.	
Firma iyi yönetilmektedir	
Firma çalışmak için iyi bir şirkettir	
Firmanın çalışanları işinde yetkin ve yeteneklidir.	
Firma sosyal sorunların çözümüne destek olmaktadır.	
Firma çevreye karşı duyarlıdır	
Firma insanlara davranışlarında yüksek standartlara sahiptir	



Lütfen aşağıdaki cetveldən her tanım için en uygun değerlendirme puanını seçiniz ve yandaki kutucuğa yazınız.

Kesinlikle Katılmıyorum	Katılmıyorum	Ne katılıyorum Ne katılmıyorum	Katılıyorum	Kesinlikle Katılıyorum
1	2	3	4	5

Lütfen aşağıdaki yargıları X markası için sizleri ziyaret etmiş olan ilgili satış temsilcisini düşünerek ne ölçüde katıldığınızı belirtiniz.	
Satış temsilcisi satış yapabilmek için ürün mevcut olmadığı halde “var” der	
Satış temsilcisi satış yapabilmek için rekabet hakkında doğru olmayan beyanda bulunur.	
Satış temsilcisi satış yapabilmek için soruların yanıtlarını bilmemesine rağmen cevap verir	
Satış temsilcisi ürünün benim için uygun olmadığını bildiği halde satış baskısı uygular	
Satış temsilcisi ürünü iyi gösterebilmek için pembe bir tablo çizer	
Satış temsilcisi bizim ile içten bir ilişkiye sahiptir	
Satış temsilcisi yanlış beyanlarda bulunmaz	
Satış temsilcisinin bizim ile olan ilişkilerinde yeterince açık olduğunu düşünmüyorum.	
Satış temsilcisi sadece kendini düşünür	
Satış temsilcisi benim ihtiyaçlarımı ile ilgilenir gibi gözükür	
Satış temsilcisi güvenilirdir	
Satış temsilcisi yetkin ve profesyoneldir	
Satış temsilcisi samimidir	
Satış temsilcisi ile iş yaparken risk olmadığını hissedirim	
Satış temsilcisi arkadaş canlısıdır	

Lütfen aşağıdaki yargıları X markası için sizleri ziyaret etmiş olan ilgili satış temsilcisini düşünerek ne ölçüde katıldığınızı belirtiniz.	
Satış temsilcisi bize karşı her zaman naziktir	
Satış temsilcisi çevremizde olmasını istediğimiz biridir	
Satış temsilcisi benimle benzer ilgilere sahiptir	
Satış temsilcisi benimle benzer değerlere sahiptir	
Satış temsilcisi bana benzer	
Satış temsilcisi benim iş yerimi gerektiği kadar ziyaret eder	
Satış temsilcisi ihtiyaçlarımı anlamak için zaman harcar	
Satış temsilcisi beni tanımak için yeterince zaman harcar	
Satış temsilcisi ile dışarıda görüşürüm	
Satış temsilcisi ile güncel konularda konuşurum	
Satış temsilcisi ile eğlence(spor,sinema,konser) etkinliklerine katılırım	
Satış temsilcisi ile dışarıda yemek yerim	
Satış temsilcisi ile eğlenmek için biraraya gelirim	
Satış temsilcisi ile ortak ilgilerimizi konuşuruz	
Satış temsilcisi ile ailece görüşürüz	

Lütfen aşağıdaki yargıları X markası ve şirketinin tanıtım faaliyetlerini düşünerek ne ölçüde katıldığınızı belirtiniz.	
Ürün promosyonları ürün reçetelememi etkiler	
Ürün ile ilgili ek hizmetler(sempozyum,toplantı) ürün reçetelememi etkiler	
Ücretsiz ürün numuneleri ürün reçetelememi etkiler	
Satış temsilcilerinin ziyareti ürün reçetelememi etkiler	
Firma ürününü reçetelemem karşılığında beni ödüllendirmesini beklerim	
X markasını düşünerek aşağıda verilen kıstaslara göre değerlendiriniz.	
Rakip markalar arasında X markasını hemen tanırım	
Augementin markasının farkındayım	
X deyince özellikleri hemen aklıma gelir	
X deyince markanın sembolünü veya logosunu hemen hatırlarım	
X markasını aklımda canlandırmakta zorlanıyorum	



Lütfen aşağıdaki cetvelden her tanım için en uygun değerlendirme puanını seçiniz ve yandaki kutucuğa yazınız.

Kesinlikle Katılmıyorum	Katılmıyorum	Ne katılıyorum Ne katılmıyorum	Katılıyorum	Kesinlikle Katılıyorum
1	2	3	4	5

X markasının insan olduğunu düşününerek aşağıda verilen kıstaslara göre değerlendiriniz.	
Gerçekçidir	
Aile odaklıdır	
Şehirlidir	
Dürüştür	
İçtendir	
Gerçekdir	
Sağlıklıdır	
Orjinaldir	
Neşelidir	
Duygusaldır	
Arkadaş canlısıdır	
Cüretkardır	
Modern	
Heyecan vericidir	
Şevkli	
Serinkanlıdır	
Gençtir	
Yaratıcıdır	
Eşsizdir	
Günceldir	
Bağımsızdır	

X markasının insan olduğunu düşününerek aşağıda verilen kıstaslara göre değerlendiriniz.	
Çağdaşdır	
Güvenilirdir	
Çalışkandır	
Emin	
Zekidir	
Tekniktir	
Kurumsaldır	
Başarılıdır	
Liderdir	
Kendinden emindir	
Üst sınıftır	
Göz alıcıdır	
İyi görünür	
Büyüleyici	
Kadınsıdır	
Sorunsuzdur	
Erkeksidir	
Batılıdır	
Güçlüdür	
Serttir	



Lütfen aşağıdaki cetvelden her tanım için en uygun değerlendirme puanını seçiniz ve yandaki kutucuğa yazınız.

Kesinlikle Katılmıyorum	Katılmıyorum	Ne katılıyorum Ne katılmıyorum	Katılıyorum	Kesinlikle Katılıyorum
1	2	3	4	5

X markasını ve firmasını düşünerek aşağıda verilen yargılara göre değerlendiriniz.				
Bu ilaç kolay bir dozajda sunulur				
Bu ilacın vücutta tatminkar bir etkisi vardır				
Bu ilaç hastalar için düşük maliyetlidir				
Bu ilacın üstünlüğü bilimsel veriler tarafından desteklenmektedir				
Bu ilaç uluslararası tedavi rehberleri tarafından desteklenmektedir.				
İlacın fiyatı sağladığı fayda düşünüldüğünde makuldür				
Bu ilaç hastaların gelecekte yaşayacakları yan etkilerin riskini azaltır				
Bu ilaç vücutta iyi tolere edilebildiğinden yan etkisi yok denenecek kadar azdır.				
Bu ilaç hastaların yaşam kalitesini yükseltir				
Bu ilaç hastalığın ilerlemesini yavaşlatmaktadır				
Bu ilaç hastalarımın durumu için en iyi tedavi yöntemidir.				
X markasını düşününerek aşağıda yer alan yargılara göre değerlendiriniz.				
Bu markadan çok memnunum				
Bu markayı reçetelemekten çok mutluyum				
Bu markanın sağladığı tedavi kalitesinden çok memnunum				
Bu marka doktor olarak ihtiyaçlarımı karşılamada iyidir				
Bu firma tarafından sağlanan ürün/hizmet çok tatminkardır				
Bu markayı kullanmak genellikle çok tatminkar bir tecrübedir				
Bu markayı karar vermekle doğru tercihi yapmışım				
Bir şekilde bu markaya sadakatim yüksektir				
X markasını ve firmasını düşününerek aşağıda yer alan yargılara göre değerlendiriniz.				
Bu markayı gelecekte reçetelemeyi düşünüyorum				
Bu firmanın başka ürünlerini de reçetelemeyi düşünürüm				
Bu marka ilgili tedavi alanında ilk tercihimdir				
Bu alanda bir ürüne ihtiyacım olduğunda yine bu markayı reçetelerim				
Bu ürün için sadık bir reçeteleyen doktor olmaya devam edeceğim				
Diğer firmaların tanıtım faaliyetleri bu markayı reçetelememi etkilemez				
Bu marka ile ilgili çevremdeki insanlara olumlu şeyler söylerim				
Bu markayı doktorlara da reçetelemeleri için öneririm.				
Bu markayı başkalarına (hasta, doktor) öneririm				
Bu marka gelecek yıllarda da reçetelerken ilk tercih olacaktır				



Demografik özellikler:	
Cinsiyet	☐ Erkek ☐ Kadın Çalıştığınız il:
Çalıştığınız kurum:	☐ Sağlık Ocağı ☐ Devlet Hastanesi ☐ Üniversite Hastanesi ☐ Özel Hastane ☐ Eğitim ve Araştırma Hastanesi ☐ Özel Klinik ☐ Bireysel muayenehane ☐ Diğer:
Uzmanlık alanınız:	☐ Pratisyen ☐ Asistan (daliniz):..... ☐ Uzman(daliniz):.....
Ünvanınız:	☐ Arş Gör ☐ Uzman ☐ Yard.Doçent ☐ Doçent ☐ Profesör
Kaç yıldır hekimsiniz?	
Günde ortalama kaç hasta görmektesiniz?	

Appendix 3 :Main Study Questionnaire in English



Dear Participant;

This questionnaire is part of a dissertation conducted for the Business PhD Programme at the University of Bahcesehir and is designed to analyze the relations about company and brand factors in the pharmaceutical industry. Therefore, your valued opinions and contributions are very important for this study. This is a scientific study and the gathered data and personal information will not be shared with any private or public institution. It is important that you evaluate the questions objectively for this study to deliver correct and reliable information. Please answer the questions considering Brand X and its company, one of the most commonly used brand in the Turkish pharmaceutical industry. Thank you very much for your contribution.

Do you prescribe Brand X to your patients?		☐ Yes	☐ No (if your answer is no, thank you for your time)	
If you answered yes, how often do you prescribe it?	1-5 times a week	6-10 times a week	11-20 times a week	Other (.....)

Please choose the adequate number for each description and write it in the box on the right side.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
1	2	3	4	5
Please indicate your opinion on the below statements considering the company of Brand X...			Please indicate your opinion on the below statements considering the company of Brand X...	
Have a good feeling about the company.			Tends to out-perform its competitors.	
Admire the company.			Has excellent leadership.	
Respect the company.			Has a clear vision for its future.	
Trust the company a great deal			Recognizes and takes advantage of market opportunities.	
Stands behind its products and services.			Is well-managed.	
Develops innovative products and services.			Looks like a good company to work for.	
Offers high quality products and services.			Looks like a company that would have good employees.	
Offers products and services that are a good value for the money.			Supports good causes.	
Has a strong record of profitability.			Is an environmentally responsible company.	
Looks like a low risk investment.			Maintains high standards in the way it treats people.	
Looks like a company with strong prospects for future growth.				



Please choose the adequate number for each description and write it in the box on the right side.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
1	2	3	4	5

Please indicate your opinion on the below statements considering the salesperson who has visited you for Brand X.	
The salesperson lies about availability in order to make a sale	
The salesperson lies about competition in order to make the sale	
The salesperson gives answers when he/she does not really know the answers	
The salesperson applies sales pressure even though he/she knows the product is not right for me	
The salesperson paints rosy pictures of the products to make them sound as good as possible	
This salesperson has been frank in dealing with us.	
This salesperson does not make false claims.	
We do not think this salesperson is completely open in dealing with us.	
This salesperson is only concerned about himself/herself.	
This salesperson does not seem to be concerned with our needs.	
This salesperson is trustworthy	
This salesperson was competent and professional	
This salesperson was sincere	
I felt very little risk was involved when dealing with this salesperson	
This salesperson is friendly.	

Please indicate your opinion on the below statements considering the salesperson who has visited you for Brand X.	
This salesperson is always nice to us.	
This salesperson is someone we like to have around.	
This salesperson shares similar interests with me.	
This salesperson has values similar with me.	
This salesperson is very similar with me	
This salesperson frequently visits our place of business.	
This salesperson takes a lot of time learning our needs.	
This salesperson spends considerable time getting to know our people	
Meet away from the workplace.	
Talk about family, sports or other personal interests.	
Attend entertainment events (sports, theater etc.)	
Meet over breakfast, lunch or dinner.	
Get together primarily to have fun.	
Talk about common interests besides work.	
Get together with other family members	

Please indicate your opinion on the below statements considering the Brand X brand and the promotion activities of its company.	
Promotion interferes with my prescription	
Complementary services offered by laboratories, such as events or sites, influences my prescription	
Gifts and souvenirs accompanying the product influence my prescription	
Visit by personal seller influence my prescription	



This company rewards me for my regular prescription of its drugs	
Please evaluate the Brand X brand according to the below criteria.	
I can recognize X among other competing brands.	
I am aware of X.	
Some characteristics of X come to my mind quickly.	
I can quickly recall the symbol or logo of X.	
I have difficulty in imagining X in my mind. (r)	

Please choose the adequate number for each description and write it in the box on the right side.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
1	2	3	4	5

Please evaluate the Brand X brand according to the below criteria assuming that it is human.	
down to earth	
family oriented	
small-town	
honest	
sincere	
real	
wholesome	
original	
cheerful	
sentimental	
friendly	
daring	
trendy	
exciting	
spirited	
cool	
young	
imaginative	
unique	
up-to-date	
independent	

Please evaluate the Brand X brand according to the below criteria assuming that it is human.	
contemporary	
reliable	
hard working	
secure	
intelligent	
technical	
corporate	
successful	
leader	
confident	
upper class	
glamorous	
good looking	
charming	
feminine	
smooth	
masculine	
western	
tough	
rugged	



Please choose the adequate number for each description and write it in the box on the right side.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
1	2	3	4	5

Please evaluate the Brand X brand and its company according to the below statements.				
The drug of this company is available in a comfortable dosage				
The drug of this company has a comfortable mode of action in the body				
The drug of this company costs less for the patient				
The drug is supported with wealth of original scientific data to back its superiority				
The drug is supported by international guidelines				
It is priced which is cost effective for my patient's and is worth paying more				
It reduces risk of my patients from future events and side effects				
Well tolerated and positive side effect profile				
Improves patient quality of life				
Delays progress of disease				
It is a best treatment available for patients' conditions				
Please evaluate the Brand X brand according to the below statements.				
I am very satisfied with this brand.				
I am very happy to prescribe this brand.				
I am very satisfied with the treatment quality provided by this brand.				
This brand does a good job of satisfying my needs.				
The service-products provided by this brand is very satisfactory				
I believe that using this brand is usually a very satisfying experience				
I made the right decision when I decided to use this brand.				
I am addicted to this brand in some way				
Please evaluate the Brand X brand and its company according to the below statements.				
I intend to prescribe this brand in the near future				
I intend to prescribe other products of this company				
I consider this brand as my first choice in this category				
The next time I need that product, I will prescribe the same brand				
I will continue to be loyal customer for this brand				
Commercials regarding to competing brands are not able to reduce my interest in prescribing this brand.				
I say positive things about this brand to other people				
I recommend this brand to someone who seeks my advice				
I intend to recommend this brand to other people				
I consider this brand my first choice in the next few years				



Demographic information:		
Gender	☐ Male ☐ Female	City:
Hospital:	☐ Regional health care center ☐ Public Hospital ☐ University Hospital ☐ Private hospital ☐ Education and Research Hospital ☐ Private Clinic ☐ Private Practice ☐ Other:	
Specialty:	☐ Practitioner ☐ Assistant (specialty): ☐ Specialist(specialty):	
Academic Title	☐ Research Assistant ☐ Specialist ☐ Asistan Professor ☐ Professor	
How long have you been a doctor?		
How many patients do you see per day?		

Appendix 4: Measures of the Constructs and Descriptive Statistic (N=331)

Item Code	Item Explanation	Mean	Std. Dev.	Skewness	Kurtosis
Corporate Reputation					
COR1	Have a good feeling about the company	2,92	1,05	-0,38	-0,42
COR2	Admire the company	3,14	0,97	-0,52	-0,04
COR3	Respect the company	3,47	0,89	-0,83	0,78
COR4	Trust the company a great deal	3,30	0,91	-0,51	0,33
COR5	Stands behind its products and services	3,47	0,87	-0,48	0,57
COR6	Develops innovative products and services	3,48	0,83	-0,58	0,82
COR7	Offers high quality products and services	3,58	0,81	-0,70	0,97
COR8	Offers products and services that are a good value for the money.	3,50	0,86	-0,65	0,67
COR9	Has a strong record of profitability	3,27	0,80	0,01	0,87
COR10	Looks like a low risk investment	2,93	0,76	-0,42	1,07
COR11	Looks like a company with strong prospects for future growth	3,35	0,75	-0,42	0,93
COR12	Tends to out-perform its competitors.	3,28	0,89	-0,45	0,03
COR13	Has excellent leadership	3,26	0,84	-0,33	0,50
COR14	Has a clear vision for its future.	3,33	0,76	-0,33	1,03
COR15	Recognizes and takes advantage of market opportunities.	3,27	0,79	-0,33	0,70
COR16	Is well-managed	3,27	0,78	-0,22	0,95
COR17	Looks like a good company to work for	3,34	0,76	-0,32	1,09
COR18	Looks like a company that would have good employees.	3,47	0,78	-0,71	1,13
COR19	Supports good causes	3,10	0,76	-0,30	1,09
COR20	Is an environmentally responsible company	3,16	0,76	-0,24	1,01
COR21	Maintains high standards in the way it treats people.	3,28	0,77	-0,30	0,79

Item Code	Item Explanation	Mean	Std. Dev.	Skewness	Kurtosis
Pharmaceutical Sales Representative					
PSA1	The salesperson lies about availability in order to make a sale	3,75	0,85	-0,32	-0,17
PSA2	The salesperson lies about competition in order to make the sale	3,73	0,88	-0,34	-0,27
PSA3	The salesperson gives answers when he/she does not really know the answers	3,63	0,90	-0,37	-0,02
PSA4	The salesperson applies sales pressure even though he/she knows the product is not right for me	3,67	0,92	-0,41	-0,21
PSA5	The salesperson paints rosy pictures of the products to make them sound as good as possible	3,27	1,06	-0,14	-0,66
PSA6	This salesperson has been frank in dealing with us.	3,13	0,97	-0,34	-0,13
PSA7	This salesperson does not make false claims.	3,34	0,97	-0,55	0,11
PSA8	We do not think this salesperson is completely open in dealing with us.	2,69	0,94	0,09	-0,35
PSA9	This salesperson is only concerned about himself/herself.	3,38	0,88	-0,15	-0,07
PSA10	This salesperson does not seem to be concerned with our needs.	2,92	0,90	-0,27	-0,13
PSA11	This salesperson is not trustworthy	3,40	0,84	-0,39	0,67
PSA12	This salesperson was competent and professional	3,53	0,82	-0,99	1,43
PSA13	This salesperson was sincere	3,42	0,83	-0,49	0,65
PSA14	I felt very little risk was involved when dealing with this salesperson	3,28	0,82	-0,42	0,48
PSA15	This salesperson is friendly.	3,37	0,80	-0,63	1,07
PSA16	This salesperson is always nice to us.	3,72	0,85	-1,16	2,15
PSA17	This salesperson is someone we like to have around.	3,38	0,88	-0,67	0,81
PSA18	This salesperson shares similar interests with me.	3,06	0,86	-0,37	0,48
PSA19	This salesperson has values similar with me.	3,06	0,88	-0,46	0,46

PSA20	This salesperson is very similar with me	2,82	0,85	-0,31	0,20
PSA21	This salesperson frequently visits our place of business.	3,25	1,08	-0,67	-0,25
PSA22	This salesperson takes a lot of time learning our needs.	3,25	1,01	-0,67	0,01
PSA23	This salesperson spends considerable time getting to know our people	3,22	0,99	-0,72	0,03
PSA24	Meet away from the workplace.	2,69	1,07	-0,03	-0,79
PSA25	Talk about family, sports or other personal interests.	3,21	1,06	-0,68	-0,27
PSA26	Attend entertainment events (sports, theater etc.)	2,61	1,09	0,04	-0,80
PSA27	Meet over breakfast, lunch or dinner.	2,79	1,15	-0,18	-1,05
PSA28	Get together primarily to have fun.	2,50	1,06	0,14	-0,82
PSA29	Talk about common interests besides work.	2,92	1,12	-0,33	-0,84
PSA30	Get together with other family members	2,31	1,07	0,34	-0,80
Advertising Promotion					
ADP1	Promotion interferes with my prescription	2,66	1,16	0,12	-0,98
ADP2	Complementary services offered by laboratories, such as events or sites, influences my prescription	3,21	1,12	-0,48	-0,51
ADP3	Gifts and souvenirs accompanying the product influence my prescription	2,93	1,15	-0,20	-0,94
ADP4	Visit by personal seller influence my prescription	3,60	1,01	-1,00	0,69
ADP5	This company rewards me for my regular prescription of its drugs	2,31	1,17	0,48	-0,81
Brand Awareness					
BRA1	I can recognize X among other competing brands.	3,85	0,81	-0,75	0,92
BRA2	I am aware of X.	4,00	0,69	-0,69	1,50
BRA3	Some characteristics of X come to my mind quickly.	3,91	0,75	-0,92	1,59
BRA4	I can quickly recall the symbol or logo of X.	3,49	0,97	-0,54	-0,06
BRA5	I have difficulty in imagining X in my mind(r)	2,40	1,05	0,39	-0,66

Brand Personality					
BRP1	down to earth	3,66	0,76	-0,80	1,58
BRP2	family oriented	3,37	0,82	-0,38	0,63
BRP3	small-town	3,44	0,84	-0,30	0,54
BRP4	honest	3,57	0,80	-0,51	0,99
BRP5	sincere	3,45	0,80	-0,51	1,06
BRP6	real	3,69	0,78	-0,75	1,44
BRP7	wholesome	3,79	0,77	-0,71	1,28
BRP8	original	3,98	0,76	-0,61	0,85
BRP9	cheerful	3,23	0,84	-0,36	0,73
BRP10	sentimental	3,11	0,85	-0,16	0,72
BRP11	friendly	3,18	0,84	-0,32	0,73
BRP12	daring	3,14	0,83	-0,24	0,56
BRP13	trendy	3,55	0,79	-0,51	0,67
BRP14	exciting	3,11	0,80	-0,23	0,81
BRP15	spirited	3,14	0,82	-0,13	0,78
BRP16	cool	3,29	0,78	-0,41	1,03
BRP17	young	3,04	0,93	-0,26	-0,18
BRP18	imaginative	3,19	0,83	-0,11	0,22
BRP19	unique	3,01	0,89	-0,05	0,20
BRP20	up-to-date	3,40	0,83	-0,59	0,67
BRP21	independet	3,37	0,86	-0,50	0,54
BRP22	contemporary	3,56	0,78	-0,60	0,78
BRP23	reliable	3,81	0,76	-0,65	1,13
BRP24	hard working	3,49	0,86	-0,41	0,38
BRP25	secure	3,65	0,82	-0,58	0,78
BRP26	intelligent	3,43	0,85	-0,48	0,66
BRP27	technical	3,58	0,81	-0,55	0,72
BRP28	corporate	3,70	0,80	-0,60	0,89
BRP29	successful	3,85	0,79	-0,75	1,23
BRP30	leader	3,61	0,90	-0,28	0,04
BRP31	confident	3,67	0,83	-0,62	0,93
BRP32	upper class	3,51	0,86	-0,18	0,04
BRP33	glamorous	3,27	0,84	0,10	0,20
BRP34	good looking	3,43	0,81	-0,33	0,43
BRP35	charming	3,07	0,82	-0,09	0,68
BRP36	feminine	2,84	0,89	-0,05	0,45
BRP37	smooth	3,21	0,92	-0,12	-0,18

BRP38	masculine	2,91	0,88	-0,08	0,53
BRP39	western	3,34	0,85	-0,19	0,30
BRP40	tough	3,63	0,82	-0,42	0,35
BRP41	rugged	3,09	0,83	-0,20	0,44

Drug Perceived Quality					
DPQ1	The drug of this company is available in a comfortable dosage	3,98	0,70	-1,32	4,08
DPQ2	The drug of this company has a comfortable mode of action in the body	3,94	0,66	-1,04	3,55
DPQ3	The drug of this company cost less for the patient	3,59	0,82	-0,49	0,49
DPQ4	The drug is supported with wealth of original scientific data to back its superiority	3,96	0,68	-0,83	2,27
DPQ5	The drug is supported by international guidelines	3,93	0,69	-0,73	1,80
DPQ6	It is priced which is cost effective for my patient's and is worth paying more	3,77	0,75	-0,66	1,16
DPQ7	It reduces risk of my patients from future events and side effects	3,53	0,84	-0,63	0,56
DPQ8	Well tolerated and positive side effect profile	3,43	0,84	-0,67	0,52
DPQ9	Improves patient quality of life	3,73	0,76	-0,96	1,78
DPQ10	Delays progress of disease	3,79	0,70	-1,17	2,76
DPQ11	It is a best treatment available for patients' conditions	3,48	0,79	-0,59	0,68
Brand Satisfaction					
BRS1	I am very satisfied with this brand.	3,73	0,78	-1,07	2,10
BRS2	I am very happy to prescribe this brand.	3,59	0,80	-0,55	0,85
BRS3	I am very satisfied with the treatment quality provided by this brand.	3,76	0,74	-0,92	1,84
BRS4	This brand does a good job of satisfying my needs.	3,68	0,84	-1,16	1,65
BRS5	The service-products provided by this brand is very satisfactory	3,40	0,91	-0,82	0,62
BRS6	I believe that using this brand is usually a very satisfying experience	3,54	0,79	-0,73	0,81
BRS7	I made the right decision when I decided to use this brand.	3,62	0,76	-0,81	1,45

BRS8	I am addicted to this brand in some way	3,37	0,91	-0,54	0,15
Brand Loyalty					
BRL1	I intend to prescribe this brand in the near future	3,79	0,78	-0,94	1,97
BRL2	I intend to prescribe other products of this company	3,48	0,86	-0,84	1,12
BRL3	I consider this brand as my first choice in this category	3,42	0,89	-0,36	0,07
BRL4	The next time I need that product, I will prescribe the same brand	3,55	0,79	-0,51	0,99
BRL5	I will continue to be loyal customer for this brand	3,28	0,84	-0,41	0,61
BRL6	Commercials regarding to competing brands are not able to reduce my interest in prescribing this brand.	3,14	0,97	-0,38	-0,24
BRL7	I say positive things about this brand to other people	3,51	0,85	-0,84	1,04
BRL8	I recommend this brand to someone who seeks my advice	3,28	0,90	-0,43	0,22
BRL9	I intend to recommend this brand to other people	3,44	0,90	-0,70	0,38
BRL10	I consider this brand my first choice in the next few years	3,30	0,85	-0,47	0,38