SCALE DEVELOPMENT AND MODELLING OF CUSTOMER-BASED HOSPITAL BRAND EQUITY

Ph.D. Synopsis

by

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1. Introduction

Today the aim of every business entity is to drive long term value. In order to do so, the managerial functions of firms have changed from a mere facilitation of transactions to the establishment of sustainable long-term relationships with the customers (Fournier, 1998). In the last two decade, brand equity (also referred as BE in the subsequent sections) is seen as the sole panacea for evaluating the success or failure of brands and the various branding strategies behind them. But despite acquiring a high status among various measures of marketing performance, the concept of BE have been under intense inquiry and criticism, and much of this malaise has cropped-up due to the level of inconsistency and inconclusiveness present in the methods of BE measurement (Christodoulides & de Chernatony, 2010). A taxonomical and critical review done in the complex and wider domain of brand equity suggests various issues that are especially noteworthy and serve as a motivational force behind pursuing the present problem statement:

1. The taxonomical review of literature revealed that the application of BE measures are highly concentrated in the goods industries, or it has been applied in the dual context of both goods and services in which one or more brands have been considered. A detailed examination of the under-reviewed studies revealed that many of the high credence services like healthcare have been largely ignored in those studies. The above cited argument poses a critical question to the researchers that:Whether models developed largely on the basis of goods-dominant logic are equally applicable in the case of both goods and services, or do we need to explore further to find out what really matters to the consumers that are unique to goods and services respectively?

2. The taxonomical review revealed that emerging markets like India has received little attention in consumer behaviour and brand equity researches, despite having large market size and huge potential for foreign brands. While most brand equity researches have been based on US and European market experiences (Ambler et al., 2004), possible difference in the business environment is likely to obscure the determinants of BE in the two markets. The above argument needs us to explore:Whether models that are developed and tested in the developed markets are equally valid and reliable in assessing the congnitive, attitudinal and behavioural brand manifestations of consumers in a developing market?, To what extent social, economic, environmental and cross-cultural issues influence the brand perception, choice intention and behviour of consumers?

3. The critical review states that despite diverse connotations and structures found in the different models of BE (Christodoulides and de Chernatony, 2010), the current models of BE are a result of excessive theorization of Keller's (1993) and Aaker's (1991) BE framework that has hindered the growth of this discipline by an arbitrary application of a set of generic variables in the case of both goods and service, i.e., by assigning equal weight to the different categories of BE measures (Hsu et al. 2012). In this regard, it may be questioned whether those generic variables are able to capture BE attributed to the customer touch-points and brand experiences that are exclusive to those services (Boo et al. 2009).

4. The critical review of literature suggests that the parallel growth of relationship marketing has led to a change in the marketers focus from mere transactional marketing to relationship-based marketing. In recent years, researchers have also highlighted the failure of image-based researches in measuring brand loyalty, which is one of the most important element of BE (Blackston, 2000). This poses the question that although the idea behind relationship marketing and brand equity is to attain customer loyalty, yet the use of interpersonal relationship theories in branding is at a very nascent stage and does not provide any impetus to measure the relational outcomes of BE (Vargo and Lusch, 2004, and others).

5. The critical review suggested that although brand equity has been recognized as an important measure that connects the dot points between marketing investments and brand performance and a large number of companies use them, yet only a few brand rich companies have been able to capitalize on the right non-financial metics (Ittner and Larcker, 2003). Besides,the two measurement perspectives: firm-based (Farquhar, 1989 and others) and customer-based (Keller, 1993; Aaker, 1991; and others) are highly confusing. The above argument poses two questions: (1) for whom this brand value is created, (2) which are the set of non-financial metrics that can capture this value.

2. Research Objectives and Methodology

- Development of a scale for measuring customer-based brand equity in hospital industry.
- Modelling the dimensions of customer-based hospital brand equity (HBE).
- Understanding variations in the HBE model based on levels of customer brand knowledge.

As found in the literature review of methodologies for scale development, modeling and moderation analysis that were applied in the case of previous brand equity studies, it was found the the use of multivariate techniques like Confirmatory Factor Analysis (CFA) through Structural Equations Modelling (SEM) were found to be the most popular method among all that are contemporarily being used for fulfilling the above mentioned objectives. Therefore, the present study has also used SEM in AMOS for meeting the above three objectives.

3. Results and Conclusions

The subsequent sections report the major findings of this research.

- Based on the results of a standard scale development procedure which involved the assessment of measurement instrument, exploratory factor analysis and the development of a measurement model, a scale consisting of 33 items representing seven exogenous constructs indicated acceptable model fit with the data (x^2=2298.206 (p=.000), CFI=0.982, RMSEA=0.028, RMR=0.055). The chi-square was significant, which is usually common with very large sample sizes (Bollen, 1989). The ratio of chi-square to degrees of freedom was in the acceptable range and the root mean square error of approximation (RMSEA) was below the 0.08 threshold, which indicated a good overall model fit. Besides, the reliability and validity tests for the scale items showed strong evidence.

- Further the CFA results for the structural model also showed acceptable fit indices. It was found that the brand knowledge (Brand Awareness and Brand Associations) and the the two relational constructs (attitudinal loyalty and satisfaction) have a direct and positive impact on the three OBE dimensions (Knowledge Equity, Attitudinal Equity and Relationship Equity). All paths from the OBE dimensions to the behavioural brand equity (BHE) constructs: brand preference, intention to purchase, and behavioural loyalty were significant, with exception of path from knowledge equity (KE) to behavioural loyalty, which suggests that mere knowledge does not influence customer behaviour. It also signifies that the burden of creating knowledge equity lies on the brand.

- The results of the moderation analysis suggest variations in the HBE model based on levels of customer brand knowledge. The results did support an overall significant difference based on brand knowledge levels. The unconstrained model (χ2 (820)

=1895.853, p<.000; RMSEA=.070, CFI=.831) did show better fit than the constrained model (χ 2(833) =1924.154, p<.000; RMSEA=.070, CFI=.829) based on the chi-square difference test ($\Delta\ \chi$ 2(13) =28.301, p<.01). The model observed some significant key differences in the path loadings for high brand knowledge versus low brand knowledge group.

4. Theoretical and Managerial Contributions

The results of this research have several contributions theoretical and managerial implications for customer-based brand equity measurements, brand management, brand equity development. The following point are suggestive in this regard.

- Despite increasing popularity of BE measures, the Indian hospital industry does no have a measuring instrument for understanding the customer attitude and brand perception of consumers in emerging countries. The present research is a redressal toward this end. The recommended scale for brand equity measurement can be applied in the healthcare industry and managers can bring changes in their branding strategies as well as assess their brand's performance.

- The results of this research implicate the use of select metrics that drive brand value in the hospital industry. It is also recommended that the complimentary use of the present CBBE indices can be used to assess and improve branding strategy along with hospital accreditations for bringing about improvements in the performance of hospital brands.

- The results also provide significant theoretical implications for conceptualizing brand equity and understanding the relational outcomes of brand equity. It suggests that brand knowledge plays an important role in sustaining long term brand equity by maintaining healthy relationship with the customers.

- Based on the results of this study, the above pointers are intended to assist practicing managers and market researchers in setting up their own system of brand equity measurement.

- This research concluded that brand knowledge leads to three dimensions of overall brand equity: knowledge equity, attitudinal equity and relationship equity. Baseides,

having direct influence on OBE dimensions, brand knowledge has an indirect influence on the three BHE outcome: brand perception, intention to purchase and behavioural loyalty. It further suggests that the usefulness of different dimensions of brand equity is not uniform across diverse industries. Therefore, a brand equity monitor should incorporate only those metrics that drive brand value within the specific industry.

5. Chapter Organization of the Thesis

Chapter1 is is an introduction to the research which is documented in this thesis. It begins with a brief description of the underlying theories and concepts and the considerations which led to the emergence of the problem statement in question, and progressively moves down to the nitigrities of this research.

Chapter 2 deals with the review of literature. In light of some of the highly commended studies on non-financial CBBE measurement, this chapter identifies various research gaps for problem formulation and development of conceptual framework and hypotheses.

Chapter 3 provides an overview of hospital industry, with a particular reference to the Indian healthcare markets. It highlights on the evolution of Indian healthcare industry, and describes the hospital industry structure, characteristics, key player profiles, and the need and scope of customer-based hospital brand equity (HBE) measurement.

Chapter 4 provides a brief overview of the design strategy applied to accomplish the underlying objectives of this research. The various sections provide justifications for the study design and methods for survey instrument design, sampling, data collection, and data analysis that were applied for scale development, modeling and moderation analysis.

Chapter 5 is a description of the procedural development of a scale for measuring customer-based brand equity in hospital industry. It follows a conventional scale development procedure for construct domain specification, item generation and item purification. The present chapter is an enumeration of procedures for generation of a pool of measurement items, questionnaire development, sampling, data collection and data analysis techniques that were used for item reduction and development of a measurement model for HBE.

Chapter 6 aims at the development of a structural model for examining the relationships between customer-based HBE constructs. In this regard, it provides a brief overview of modelling procedures and results of model parameters and moderation analysis.

Chapter 7 expands the major findings and discussions based on the results obtained after fulfilment of the objectives of this research. It integrates those findings with the theoretical and managerial implications drawn from the studies, and highlight upon the limitations and suggestions for future research.

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6. Presented paper in-absentia titled "Influence of barriers on consumer's choice of healthcare and Customer perceived value", International Conference on Operations and Management Sciences, organized by IMT Nagpur, 12-13 February, 2010.

Abstract

The ‘synchronic and diachronic’ studies accomplished in the wider and complex domain of brand equity (BE) measurement divulge the fact that the phenomena of BE has been of keen interest to the researchers not only from academia but also from industry and consultancy. A close examination of those researches elucidates the fact that the phenomenon of BE, which is largely viewed as the source of long term value of a brand name, predominantly depends on the customers’ cognitive and perceptual apparatuses. This fact has, implicitly or explicitly, brought a remarkable change in the customers’ status, ultimately displacing customers from an inactive to a proactive position. This change has also helped researchers visualize a shift in the basic tenets of BE measurement, i.e., from aggregate financial measures to individual non-financial measures of BE. This change in the basic firmament of BE has entrenched deeply upon the methods of branding, which in turn has inversely acted upon the strategies of BE management. Consequently, the above mentioned changes has brought a paradigm shift in the entire rubric of BE measurement.

Keller (1993) by locating and placing customers in the locus of the complex system of BE measurement conceptualized the customer-based brand equity (CBBE) model for capturing the sources and outcomes of brand knowledge. From Keller’s standpoint, a CBBE model, directly or indirectly, captures the customers’ cognitive, affective and behavioural outcomes (e.g. attitude, preference, choice intentions or actual choice) resulting from the “differential effect” of brand marketing on customers’ brand knowledge. The literature suggests that the customer brand knowledge serves as the sole universal panacea for understanding the relativism involved in the phenomena of “being to becoming” that a brand experiences. Therefore, among different measures of BE, those that have used an *a priori* psychological framework and relate to the direct and/or indirect sources or outcomes of customer brand knowledge have dominated the entire *terra firma* of CBBE measurement.

In light of some of the most influential studies on BE measurement, the literature review reveals that although the extant model of CBBE are successful in predicting the ‘differential effect of customer brand knowledge’ well, yet they still suffer from several conceptual and managerial issues. A close examination of those issues suggests that the current models of CBBE were created on a goods-centric logic and were validated on the basis of developed market experience. Moreover, critics argue that these models over emphasize on the brand image and brand loyalty constructs. The excessive theorization and hegemony of brand

image and brand loyalty in the current models of CBBE has with all possibilities concealed the viability of applying relationship theory in brand marketing, which could have possibly been one of the most remarkable extensions of brand personality research. The advent of technological advances have made it practically possible for interpersonal relationships between a brand and a customer to form through dyadic consumer-brand interactions, which are presumably an important intermediary for linking brand equity and customer equity through the germane cognitive perspective. Further, it may be also contended that the models that are largely based upon the economic realities of the developed countries and their goods market experience may not hold equally good for the emerging global service economy as the apposite germination of transnational issues may obfuscate the fundamental premise of those models. Thus, based on the candid deliberations and intellectually rich disseminations on those viable issues, the present research aims at addressing them with the help of three underlying objectives of this research. The first objective deals with the development of an instrument for measuring customer-based hospital brand equity (HBE). The second objective aims at applying the recommended scale for the development of HBE model, by examining the relationships between brand knowledge, overall brand equity (OBE) and behavioural brand equity (BHE) constructs. The third and the final objective aim at examining variations in the HBE model based on levels of customer brand knowledge.

Accomplished on the basis of standard procedures applied for the scale development and modelling in other similar studies, the results obtained from this research provide several theoretical and managerial contributions for CBBE measurement, linking BE sources with behavioural BE outcomes, predicting brand performance of service brands, and managing BE in emerging markets. The in-depth analysis of the impact of levels of brand knowledge in the present study provides practical guidelines for implementation of the HBE model in predicting future brand potential, and in other strategic brand marketing decisions.

Keywords: customer-based brand equity, hospital industry, service, emerging markets, scale development, modelling, moderation analysis, multi-specialty hospital, India.

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CANDIDATE'S DECLARATION

I hereby certify that the work which is being presented in the thesis entitled **"SCALE DEVELOPMENT AND MODELLING OF CUSTOMER-BASED HOSPITAL BRAND EQUITY"** in partial fulfilment of the requirements for the award of the Degree of Doctor of Philosophy and submitted in the Department of Management Studies of the Indian Institute of Technology Roorkee, Roorkee is an authentic record of my own work carried out during a period from January, 2009 to December, 2013 under the supervision of **Dr. Zillur Rahman**, Associate Professor, Department of Management Studies, Indian Institute of Technology Roorkee, Roorkee.

The matter presented in the thesis has not been submitted by me for the award of any other degree of this or any other Institute.

(ISHWAR KUMAR)

This is to certify that the above statement made by the candidate is correct to the best of my knowledge.

Date: December 31, 2013 **(**ZILLUR RAHMAN)
Supervisor

The Ph. D. Viva-Voce Examination of **Mr. ISHWAR KUMAR**, Research Scholar, Department of Management Studies, has been held on .....

Signature of Supervisor **SRC, Chairman** **External Examiner**

Head of the Department/ Chairman, ODC

Abstract

The 'synchronic and diachronic' studies accomplished in the wider and complex domain of brand equity (BE) measurement divulge the fact that the phenomena of BE has been of keen interest to the researchers not only from academia but also from industry and consultancy. A close examination of those researches elucidates the fact that the phenomenon of BE, which is largely viewed as the source of long term value of a brand name, predominantly depends on the customers' cognitive and perceptual apparatuses. This fact has, implicitly or explicitly, brought a remarkable change in the customers' status, ultimately displacing customers from an inactive to a proactive position. This change has also helped researchers visualize a shift in the basic tenets of BE measurement, i.e., from aggregate financial measures to individual non-financial measures of BE. This change in the basic firmament of BE has entrenched deeply upon the methods of branding, which in turn has inversely acted upon the strategies of BE management. Consequently, the above mentioned changes have brought a paradigm shift in the entire rubric of BE measurement.

Keller (1993) by locating and placing customers in the locus of the complex system of BE measurement conceptualized the customer-based brand equity (CBBE) model for capturing the sources and outcomes of brand knowledge. From Keller's standpoint, a CBBE model, directly or indirectly, captures the customers' cognitive, affective and, behavioural outcomes (e.g. attitude, preference, choice intentions or actual choice) resulting from the "differential effect" of brand marketing on customers' brand knowledge. The literature suggests that the customer brand knowledge serves as the sole universal panacea for understanding the relativism involved in the phenomena of "being to becoming" that a brand experiences. Therefore, among different measures of BE, those that have used an *a priori* psychological framework and relate to the direct and/or indirect sources or outcomes of customer brand knowledge have dominated the entire *terra firma* of CBBE measurement.

In light of some of the most influential studies on BE measurement, the literature review reveals that although the extant model of CBBE are successful in predicting the 'differential effect of customer brand knowledge' well, yet they still suffer from several conceptual and managerial issues. A close examination of those issues suggests that the current models of CBBE were created on a goods-centric logic and were validated on the basis of developed market experience. Moreover, critics argue that these models over emphasize on the brand image and brand loyalty constructs. The excessive theorization and hegemony of brand

image and brand loyalty in the current models of CBBE has with all possibilities concealed the viability of applying relationship theory in brand marketing, which could have possibly been one of the most remarkable extensions of brand personality research. The advent of technological advances have made it practically possible for interpersonal relationships between a brand and a customer to form via dyadic consumer-brand interactions, which are presumably an important intermediary for linking brand equity and customer equity through the germane cognitive perspective. Further, it may be also contended that the models that are largely based upon the economic realities of the developed countries and their goods market experience may not hold equally good for the emerging global service economy as the apposite germination of transnational issues may obfuscate the fundamental premise of those models. Thus, based on the candid deliberations and intellectually rich disseminations on those viable issues, the present research aims at addressing them with the help of three objectives that are primarily helpful in uncovering the above mentioned issues. The first objective of this study deals with the development of an instrument for measuring customer-based hospital brand equity (HBE). The second objective aims at applying the recommended scale for the development of a HBE model, by examining the relationships between brand knowledge, overall brand equity (OBE) and behavioural brand equity (BHE) constructs. The third and the final objective aim at examining variations in the HBE model based on levels of customer brand knowledge.

Accomplished on the basis of standard scale development and modelling procedures applied in other similar studies, the results obtained from this research provide several theoretical and managerial contributions for CBBE measurement, linking BE sources with behavioural outcomes, predicting brand performance of service brands, and managing BE in emerging markets. The in-depth analysis of the impact of levels of brand knowledge in the present study provides practical guidelines for implementation of the HBE model in predicting future brand potential, and in other strategic brand marketing decisions.

Keywords: customer-based brand equity, hospital industry, service, emerging markets, scale development, modelling, moderation analysis, multi-specialty hospital, India.

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List of Abbreviations

Abbreviations	Full Form
ACR	Advances in Consumer Research
AE	Attitudinal Equity
AIIMS	All India Institute of Medical Sciences
AMJ	Australasian Marketing Journal
AMOS	Analysis of Moment Structure
ANOVA	Analysis of Variance
APJML	Asia Pacific Journal of Marketing and Logistics
ARVO	Association for Research in Vision and Ophthalmology
AVE	Average Variance Extracted
BE	Brand Equity
BFJ	British Food Journal
BHE	Behavioural Brand Equity
BK	Brand Knowledge
BM	Brand Management
BMC	Bombay Municipal Corporation
BS	Brand Associations
BVC	Brand Value Chain
CAGR	Compound Annual Growth Rate
CARE	Cardiac Research and Education
CBBE	Customer-based Brand Equity
CBR	Customer-brand Relationship
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CHRAQ	The Cornell Hotel and Restaurant Administration Quarterly
CLV	Customer Lifetime Value
CMR	Consumer Marketing Research
COO	Country-of-Origin
CR	Construct reliability
CR	Composite Reliability

CRISIL	Credit Rating Information Services of India Limited
EBBE	Employee-based brand equity
EFA	Exploratory Factor Analysis
EJM	European Journal of Marketing
EJM	European Journal of Marketing
EMJ	European Management Journal
ENT	Ear-Nose-Throat
EP	Equalization price
EQS	Structural Equations Software
FBBE	Firm-based Brand Equity
FHL	Fortis Healthcare Limited
GDP	Gross Domestic Product
HBE	Hospital Brand Equity
IBEF	India Brand Equity Foundation
IBERJ	International Business & Economics Research Journal
IBR	International Business Review
ICU	Intensive Care Unit
IHL	International Hospitals Limited
IJCHM	International Journal of Contemporary Hospitality Management
IJCTHR	International Journal of Culture, Tourism and Hospitality Research
IJHM	International Journal of Hospitality Management
IJHM	International Journal of Hospitality Management
IJMR	International Journal of Market Research
IJRM	International Journal of Research in Marketing
IJOI	International Journal of Organizational Innovation
IJQSS	International Journal of Quality and Service Sciences
IJRM	International Journal of Research in Marketing
IPD	Inpatient Department
JA	Journal of Advertising
JAMS	Journal of the Academy of Marketing Science
JAR	Journal of Advertising Research

JBE	Journal of Business Ethics
JBL	Journal of Business Logistics
JBM	Journal of Brand Management
JBR	Journal of Business Research
JCI	Joint Commission International
JCP	Journal of Consumer Psychology
JCR	Journal of Consumer Research
JFMM	Journal of Fashion Marketing and Management
JIM	Journal of International Marketing
JM	Journal of Marketing
JMC	Journal of Marketing & Communication
JMM	Journal of Marketing Management
JMR	Journal of Marketing Research
JMTP	The Journal of Marketing Theory and Practice
JPBM	Journal of Product & Brand Management
JRCS	Journal of Retailing and Consumer Services
JRIM	Journal of Research in Interactive Marketing
JSM	Journal of Services Marketing
JSM	Journal of Strategic Marketing
JSM	Journal of Sport Management
JTMAM	Journal of Targeting, Measurement and Analysis for Marketing
KE	Knowledge Equity
KEM	King Edward Memorial
KMO	Kaiser-Meyer-Olkin Measure
LISREL	linear structural relations
MEMG	Manipal Education and Medical Group
MIP	Marketing Intelligence & Planning
MR	The Marketing Review
MS	Management Science
MSA	Measure of Sampling Adequacy
MSA	Measurement System Analysis

MSI	Marketing science Institute
MSQ	Managing Service Quality
NCR	National Capital Region of Delhi
NHP	National Health Policy
NIMHANS	National Institute of Mental Health and Neurosciences
OBE	Overall Brand Equity
OBG	Obstetrics & Gynaecology
OPD	Out Patient Department
P&M	Psychology & Marketing
PCE	Principal Component Extraction
PMSSY	Pradhan Mantri Swasthya Suraksha Yojana
QFD	Quality Function Deployment
QMR	Qualitative Market Research: An International Journal
RE	Relationship Equity
RMR	Root Mean Residual
RMSEA	Root Mean Square Error of Approximation
SAS	Statistical Analysis System
SEM	Structural Equation Modelling
SET	Social Exchange Theory
SIJ	The Service Industries Journal
SJB	Seoul Journal of Business
SMQ	Services Marketing Quarterly
SPSS	Software Programming for Social Sciences
TJ	Tourism Journal
TM	Tourism Management
TMP	Tourism Management Perspectives
TOMBA	Top-of-mind-awareness
TPA	Third Party Administrator
TQMBE	Total Quality Management & Business Excellence
UK	United Kingdom
US	United States of America

USD	United States of America-Dollar
WHO	World Health Organization
WOM	Word-of-Mouth

List of Definitions

Terms	Definitions
Association	In psychology, it refers to a connection between entities or a mental state in which similarity between those objects or mental state is found in relation to space or time (Smith and Kosslyn, 2007). This concept stems from Plato and Aristotle ‘s ideas about memory, and was later carried on by other philosophers, e.g., John Locke, David Hume, David Hartley, James Mill, John Stuart Mill, and Alexander Bain.
Awareness	The extent to which a brand is recognized and recalled by actual or potential customers and is correctly linked to the product (Keller, 1993; Aaker, 1991).
Attachment	In the sense of branding, brand attachment refers to a state of mind in which an extreme connection, or bonding is felt between the two partners, i.e., the customer and the brand (Keller, 1993).
Attitude	With regard to a brand (i.e. brand attitude), it refers to the customer’s overall evaluation (manifestations) of a brand.
Attribute	With regard to a brand (i.e. brand attribute), it refers to the characteristics or features of a brand which the manufacturers provided in a brand supposing that will appeal to the customers.
Affect	The feelings a person has toward a brand. The affective responses include emotions, specific feelings, and moods that vary in level of intensity and arousal.
Attention	The process by which a consumer becomes aware or conscious of particular stimuli in the environment.
Avatar/brand	Brand avatars are the customized representations of brands as people or "icons" or "buddy icons" when used in social communities or other online virtual communities.
Behaviour	The overt actions of consumers that can be directly observed.
Behavioral Intention	A cognitive plan to perform a behavior or action, created through a choice/decision process that focuses on beliefs about the consequences of the action.
Belief	A cognitive organization about some aspect of the brand. Krench and Crutchfield define belief as a generic term that encompasses knowledge, opinion, and faith about some aspect of the individual's world. It is the cognition about the meanings of a brand. It is synonymous with knowledge or consumers' interpretations.

Benefit/ product	The value provided to a customer by a product feature.
Brand	A brand refers to a "name, term, design, symbol, or any other feature" given to a generic product and which helps the customers identify and distinguish between good or service of one seller from those of the other sellers.
Brand Awareness	Brand awareness is marketing refers to levels of consumer knowledge of a brand's existence. At the aggregate (brand) level, it refers to the proportion of consumers who know of the brand.
Brand Choice	The selection of one brand from a set of alternative brands.
Brand Choice Models	These stochastic models of individual brand choice focus on the brand that will be purchased on a particular purchase occasion, given that a purchase event will occur. Such models vary in their treatment of population heterogeneity, purchase event feedback, and exogenous market factors (Lilien and Kotler 1983).
Brand Equity	Brand equity describes the value of a brand name, based on the idea that such brand name can generate more money than the less well known brand names.
Brand Extension	A line extension marketed under the same brand name.
Brand Image	The perception of a brand in the minds of consumers. It is what people believe about a brand-their thoughts, feelings, expectations.
Brand Mapping	A research technique to identify and visualize the core positioning of a brand compared to competing brands on various dimensions.
Brand Penetration	Brand penetration occurs when a company enters/penetrates a market in which current products already exist.
Brand Personality	The psychological nature of a brand as intended by its sellers, and as seen by the customers (also called brand image).
Brand Preference	The strength of a brand preference in the hearts and minds of customers, under assumptions of equality in price and availability.
Brand Switching	A purchasing pattern characterized by a change from one brand to another.
Brand Value	The utility derived from the tangible and intangible attributes of a brand.
Brand Name	The part of a brand that can be spoken. A brand name is the endowment of a product with signs, symbols and slogans, when trademark is used.
Brand Loyalty	The situation in which a consumer generally buys the same brand

	repeatedly over time rather than buying from multiple suppliers within the category.
Branding Strategy	The attempt to develop a strong brand reputation on the web to increase brand recognition and create a significant impression.
Cognition	The mental processes of interpretation and decision making, including the beliefs and meanings they create.
Cognitive Processes	The mental activities by which external information in the environment is transformed into meanings or patterns of thought and combined to form judgments about behavior.
Cognitive Response	The thoughts a consumer has to a persuasive message such as support arguments or counterarguments.
Competitive Environment	The number and strength of rival firms competing in the market for a product.
Conjoint Analysis	A statistical technique in which respondents' utilities or valuations of attributes are inferred from the preferences they express for various combinations of these attributes.
Consumer	The ultimate user of goods, ideas, and services. However, the term also is used to imply the buyer or decision maker as well as the ultimate consumer.
Consumer Behaviour	The dynamic interaction that leads to overt actions of consumers or decision maker in the market place of products and services.
Consumer Choice Model	A model attempting to represent how consumers use and combine information about alternatives in order to make a choice among them.
Consumer Motivation	The physiological, psychological, or environmental drives of an individual that leads to the purchase of products.
Consumer Product	A product produced for, and purchased by, households for their use.
Consumer Relations	The communications efforts that generally includes product publicity, company image advertising, interaction with consumer groups, and customer inquiry response systems.
Consumer Satisfaction	The degree to which a consumer's expectations are fulfilled or surpassed by a product during post-purchase evaluation.
Consumer/Product Relationship	The relationship between consumers and a product or brand.
Consumption	The direct and final use of goods or services in satisfying the wants

	of free human beings.
Culture	The set of learned values, norms, and behaviors that are shared by a society. It includes the shared superstitions, myths, folkways, mores, and behavior patterns that are rewarded or punished.
Cultural Environment	The aggregate patterns and norms that regulate a society's behavior including the values, beliefs, and customs that are shared and transmitted by the society.
Customer	The actual or prospective purchaser of products or services.
Customer Lifetime value	The combination of actual value and potential value.
Customer orientation	A sales approach in which the customer's needs and interest are paramount.
Customer Satisfaction	Customer satisfaction is a measure of how products and services supplied of a company meet or surpass customer expectation.
Focus Group	A method of gathering qualitative data on the preferences and beliefs of consumers through group interaction and discussion usually focused on a specific topic or product.
Good(s)	A product that has tangible form, in contrast to services that are intangible.
Global Brand	A brand that is marketed according to the same strategic principles in every part of the world.
Hierarchy-of-Effects model	A concept related to the manner in which advertising supposedly works; it is based on the premise that individuals systematically move through a series of psychological stages such as awareness, interest, desire, conviction, and action.
Halo Effect	A problem that arises in data collection when there is carry-over from one judgment to another.
Hospital	A premise used for treatment of patients with severe illness.
Image	The consumer perception of a product, or brand that may or may not correspond with "reality" or "actuality." For marketing purposes "brand image " may be more important than "what actually it is."
Individual Brand	The identity given to an individual product, as separate from other products in the market and from other items in the product's own line.
Knowledge	Consumers' meanings or beliefs about brands that is stored in the

	memory.
Local Brand	A brand that is marketed in a relatively small and restricted geographical area. A brand that is developed for a specific market.
Marketing Strategy	A statement (implicit or explicit) of how a brand or product line will achieve its objectives. The strategy provides decisions and direction regarding segmentation, targeting, positioning, marketing mix elements, and expenditures.
Multi-attribute Models	These models are designed to predict attitudes toward objects (such as brands) based on consumers' evaluations of product attributes or expected consequences.
Perception	Perception is the cognitive impression about brands that is formed of "reality" which in turn influences the individual's actions and behavior toward that brand.
Price Premium	Price premium is the percentage by which a product's selling price exceeds (or falls short of) a benchmark price.
Utility	The usefulness received by consumers from buying, owning, or consuming a product.
Value	The power of any good to command other goods in peaceful and voluntary exchange.
Value Added	Value endowed to a generic product by special acts of the firm called branding.

Note: Above definitions have been mainly drawn from the American Marketing Association Website (http://www.marketingpower.com/_layouts/dictionary.aspx).

Chapter 1

INTRODUCTION

This chapter is an introduction to the research which is documented in this thesis. It begins with a brief description of the underlying theories and concepts and the considerations which led to the emergence of the problem statement in question, and progressively moves down to the basic nitigrities of this research. Followed by the introduction, it presents the methodology and ends with a brief enumeration of ensuing chapters that are scripted in this thesis.

1. INTRODUCTION

In the last two decade, brand equity (also referred as BE in the subsequent sections of this thesis) is seen as the sole panacea for evaluating the success or failure of brands and the branding strategies behind them. But despite acquiring a high status, BE has always been under intense inquiry and much of this malaise has cropped-up due to inconsistency in the measures of BE (Hsu et al. 2012; Christodoulides & de-Chernatony 2010; Burmann et al., 2009; de-Chernatony and McDonald, 2003). Literature suggests that the current models of BE assign equal importance to all categories of BE measures in different product categories and have consequently failed to establish clear linkages between brand inputs and brand outputs, mainly due to inappropriate metrics selection (Christodoulides & de-Chernatony, 2010; Ambler et al., 2004). Hence, it calls for further introspection and re-examination for understanding the appropriateness of constructed dimensions of a multidimensional and hierarchical BE model in predicting causal relationships between key variables in different industries (Hsu et al., 2012; Christodoulides & de-Chernatony, 2010; Lee et al., 2009).

Today, the aim of every business entity is to drive long term value. In order to do so, the managerial functions of firms have changed from a mere facilitation of transactions to establishing sustainable long-term relationships with the customers (Kotler et al., 2010; Schurr et al., 2008; Fournier, 2005; Dwyer et al., 1987). This obvious shift in the marketers' focus from traditional transactional marketing to relationship marketing approaches calls for the application of various relationship approaches within the branding domain (Patterson and O'Malley, 2006). Consequently, the brand marketers of today have come to realize that: (1) the customers should be treated as individuals, and (2) it is rather profitable to retain loyal customers than to acquire new ones because customers play an active and equivocal

role in the value creation process, which to a large extent depends upon the cognitive apparatuses customers' (Krishnan, 1996; Keller, 1993; Aaker, 1991, 1996). Therefore, in order to cope with the problem of multi-faceted and co-creational brand value creation and management, the brand marketers of today seek better brand building and controlling mechanisms (i.e. the performance measurement systems) that are both customer and firm oriented, objective, advanced, integrative and holistic in nature (Kaplan and Norton, 1996). Considering the aforementioned objectives, it would not be a wrong cliché to say that BE has emerged as the most widely used measure of brand performance (Sagar et al., 2011).

The measures of BE have expanded in three consistent but interlinked directions: from (1) measures of financial brand valuation to non-financial measures of brand strength, (2) aggregate brand-level measures to individual consumer-level intermediary measures of BE sources and outcomes, and (3) uni-dimensional to multidimensional measures of BE (Clark, 1999). But, with increase in the choice of measures, the complexities with BE measurement have also multiplied (Christodoulides and de-Chernatony, 2010). Consequently, marketers who are responsible for brand decision making have started looking for either a single metric or a multi-faceted measure of brand value to connect the dot-points between brand-level inputs and outcomes. In this pursuit, academic researchers and commercial consultants, through their spontaneous supply of models, have tried to establish linkages between such input-output using different financial and non-financial metrics (Causey, 1979). However, despite several merits in brand acquisition decisions the financial measures of BE have proved to be less useful for marketers, typically due to their static nature (Chenhall and Smith, 2007; Mizik and Jacobson, 2008; Knowles, 2008). In turn, the non-financial measures of BE that are applied to capture the intrinsic and intangible value of brands are difficult to capitalize (Ittner and Larcker, 2003), particularly due to the managers lack of understanding and inappropriateness in metrics selection (Christodoulides & de-Chernatony, 2010; Chattophadhyay et al. 2009a, 2009b; Jha and Shivani, 2007; Pandey and Wali, 2011).

Over the years, researchers have increasingly realized that an effective brand strategy is rewarded with positive brand equity, long-term profitability, competitive advantage, and leveraging potential of the brand by affecting loyalty, trust, preferences, choice and purchase intention of the customers (Jones et al., 2000). As a large part of BE emanates from the intangible attributes of the brand and rely upon the cognitive apparatuses of the customers, Berry (1995, 2000) and others suggest CBBE as an appropriate tool for measuring the intangible value of service brands (Namkung and Jang, 2008; Bouranta et al., 2009; Chen

and Hu, 2010). But, the current models of BE are developed largely based on the goods market experience and logic, which would otherwise require some special considerations in services (Brodie et al., 2009). Considering the emergent importance and contributions of services to the global economy, it would be much fruitful to explore and exploit the innovative ways of branding services (Tseng et al., 1999). Researchers in this regard have advocated that the only route to achieve competitive advantage in services is via customers (Douglas and Craig, 2000; Farinet and Ploncher, 2002; Kotler and Keller, 2006; Peppers and Rogers, 2000). Therefore, apart from reconsideration to BE fundamentals like brand awareness and brand associations, researchers need to take a fresh look at the dimensions that are exclusive of BE in services, regarding which some of the studies have suggested that the goods and services brands could be differentiated on the basis of quality, trust, relationship and superior customer experience originating from the touch points or interactions with the customers (Meyer and Schwager, 2007, Gentile et al., 2007 Zeithmal et al., 2011; Lin et al., 2008, Verhoef et al., 2009, Macmillan and McGrath, 1997; Pine and Gilmore, 1998; Berry et al., 2002; Singer, 1966; Lee et al., 2012; Rinehart et al., 2008).

Based on the above mentioned arguments, the present research problem was framed for addressing the following three objectives: (1) developing a scale for measuring CBBE in hospital industry, (2) examining how various CBBE constructs are related by developing a structural model for HBE, and (3) understanding the moderation effects on the HBE model based on levels of customer brand knowledge.

1.1. RESEARCH BACKGROUND

Brand equity is one of the most admired concepts in marketing since its emergence in the late 1980s. It has invited intense academic and managerial interest in conceptualizing and measuring BE as the potential outcome of firm's long term branding strategies. Thus, BE acts as a "unified conceptual framework or common denominator" for assessing the long-term success or failure of various brand strategies as well as in measuring the value added to a generic product due to special acts of the firm called branding (Keller, 2008, p.59).

The Marketing Science Institute (MSI) in 1988 invited scholars from various appellations to "…provide an integrated industry and academic perspective on the various aspects of brand equity" (Leuthesser, 1988, p.88). The concept of BE is believed to have got its genesis in the late 1980s when the advertising practitioners first coined the term "brand equity" to refer to the value of a brand name (Barwise, 1993). Since then researchers have consistently focused

on three aspects: (1) conceptualization of BE from the firm and the customer perspectives, (2) linking brand value generated due to BE with brand outcomes, and (3) inter-disciplinary approaches (e.g. psychological, economic, financial, sociological) of BE measurement. However, despite continuous efforts made by the researchers, the extant measures of BE suffers from inconsistency and inconclusiveness issues (Christodoulides and de-Chernatony, 2010) emerged due to: (1) lack of segregation of BE sources and outcomes, (2) ambiguous in conceptualization of BE as the "added value" of a brand name, which does not refer for whom (whether customer or firm) this 'added value' is created.

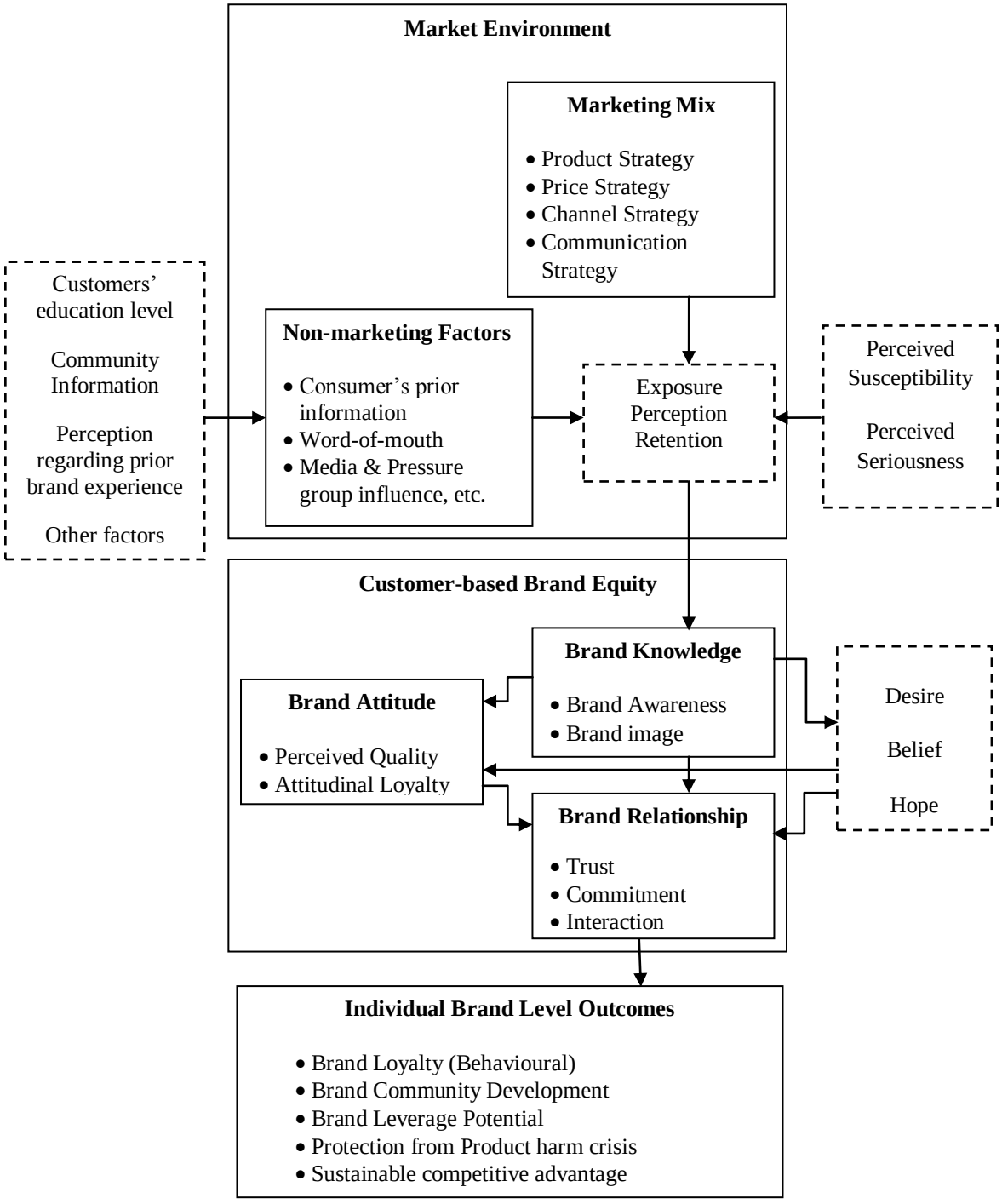

Figure 1.1. Customer Response in the Market Environment

Consequently, with the purpose of dispelling and obviating those confusions, Keller (1993) defined BE as "…a unique point of view as to what brand equity is and how it should best be built, measured, and managed" (Keller, 2009, p.70). Keller's definition of BE is more clear, focused, and integrative, as it is (1) based on the customers' perspective because brand value depends on consumers' cognitive apparatuses, (2) emanates from brand knowledge, which is one of the most primary sources of BE, and (3) well integrated with the firm perspective as it results from the "differential … response of customer" to that firm's marketing efforts. Figure 1.1 describes the role of CBBE in moderating the customer's brand related responses in the market environment. Since customer is central element of BE and everything is sourced, resourced and allocated in the name of the customer, CBBE qualifies to be a separate paradigm of BE. Although many models have emerged since its conception (Srinivasan et al., 2005), yet the concept of CBBE and its related issues are subject to a far reaching debate (Vazquez et al., 2002; Feldwick, 1996; Chaudhari, 1995; Ambler and Styles, 1995; Kumar and Sagar, 2010; Sagar et al., 2011; Das-Gupta and Sharma, 2009).

It is common knowledge that customers while exercising their brand choice do not compare two different brands solely on their physical attributes (Yoon et al., 2009; Corfman, 1991; Johnson, 1984) but on their psychological and cognitive features as well (Keller, 1993). This idea brought changes in the customers' status from an operant to an operand position (Vargo and Lusch, 2008), and the practitioners' call for more pragmatic models. Consequently, several models for BE were proposed (Aaker, 1991; Keller, 1993; Berry, 2000; Srinivasan et al., 2005; Yoo et al., 2001; Pappu et al., 2005) in the: (1) customers' perspective (e.g. Aaker and Joachimsthaler, 2000), (2) firms' perspective (e.g. King and Grace, 2009), (3) firms' employees perspective, and (4) based on an integration approach (e.g. Burmann et al., 2009). In this regard, Keller (1993) suggested two complimentary approaches of BE measurement: (1) direct approach: for assessing the impact of brand knowledge on customer's response to brand marketing, and (2) indirect approach: for measuring the indirect sources and outcomes of customers' brand knowledge. Models based on direct approach focuses on customer choice, preference (e.g. Srinivasan, 1979; Park and Srinivasan, 1994) and brand utilities (e.g. Kamakura and Russell, 1993; Swait et al., 1993). While models based on indirect outcomes use revenue premium (Ailawadi et al., 2003), and price premium (Holbrook, 1992; Randell et al., 1998), the models based on indirect sources measure customers' cognitive, attitudinal and behavioural responses (e.g. Lassar et al., 1995; Vazquez et al., 2002, Yoo and Donthu, 2001; Pappu et al., 2005). Figure 1.1 presents those indirect sources of BE. Besides generic

models, many industry specific models have also been developed (e.g. de-Chernatony et al., 2004; Christodoulides et al., 2006). Although the supply of BE models has significantly grown in number, yet they do not provide "a way of bridging the gap between the intangible perceptions of a brand and the revenues realized from it" (Dyson et al., 1995, p.10).

1.2. GAPS IDENTIFIED IN THE LITERATURE

A critical and taxonomical review of some of the most influential studies in the area of BE divulges several theoretical and practical knowledge gaps with regard to its measurement. The following research gaps are noteworthy and calls for future research endeavours.

- First, the taxonomical review of literature reveals that emerging markets like India has received little attention in consumer behaviour studies, especially in brand equity researches, despite having large market size and huge potential for foreign brands. While most brand equity researches have been based on US and European market experiences (Ambler et al., 2004), possible difference in the business environment are likely factors that obscure the determinants of BE in the two markets (François and MacLachlan, 1995).

- Second, the critical review highlights that despite multiplicity in the number of non-financial measures of BE (Ambler and Kokkinaki, 1997; Clark, 1999), in reality only a few brand-oriented companies have been able to successfully identify and act on the right non-financial measures of BE (Ittner and Larcker, 2003).

- Third, the critical review states that despite diverse connotations and structures found in the different models of BE (Christodoulides and de Chernatony, 2010), the current models of BE are arbitrarily applied in the case of goods and service, by assigning equal weight to the different categories of BE measures (Hsu et al., 2012; Costa and Evangelista, 2008). Moreover, the current measures of BE largely depend on the generic determinants of BE which do not capture BE attributed to customer touch-points and brand experiences that are exclusive to those services (Boo et al., 2009).

- Fourth, the critical review suggests that the parallel growth of relationship marketing has led to a change in the marketers focus from mere transactional marketing to relationship-based marketing. Although the idea behind relationship marketing and brand equity is to attain customer loyalty, yet the use of interpersonal relationship theories in branding is at a very nascent stage and does not provide any impetus to

measure the relational outcomes of BE (Vargo and Lusch, 2004; Seth, 2002; Webster, 1992; Kotler, 1991; Gronroos, 1991, 1999; Wang et al., 2009; Sweeney and Chew, 2002; Werther and Chandler, 2010, 2005; Alford and Sherrell, 1996).

- Fifth, the taxonomical review reveals that the application of BE measures is highly concentrated in the goods industries, or it is applied in a dual context in which one or more than one brands have been considered from both goods and services categories. A detailed examination of the under-reviewed studies revealed that many of the high credence services like healthcare have been largely ignored in those studies (Kim et al., 2008).

1.3. RESEARCH SCOPE AND MOTIVATIONS

In the present scenario customers have several options to choose from, particularly due to a high influx of new brands. Therefore, today it is really very tough for the firms to build and maintain loyalty. Consequently, marketers have to face hard times making ramifications needed in their branding methods to sustain brand commitment. In order to do so, marketers need a reliable system of brand equity measurement to understand how they can bring about changes in their branding strategies. The gaps identified in the literature (see Chapter 2), makes it apparent that there is ample scope for further work in this area. The notable issues that were motivational to this study are:

- The results of the literature survey suggest tremendous scope of future research in the area of BE measurement as studies in this area are highly concentrated to some specific product categories, cultures, regions, etc., and the results of which cannot be fully generalized in emerging market conditions. Among all articles reviewed, only one article was found in the hospital sector. Since, healthcare forms a major part of service economy and highly important for society, it served as a motivational factor for taking hospital industry as the context of BE measurement in the present study.
- The present literature survey suggests that most brand oriented firms are switching over from traditional marketing strategy to brand-based market strategy. Moreover, the evolution of BE over the years provide a growing impetus for applying theories and concepts of interpersonal relationship into the branding domain. The domain of customer-brand relationship seems promising for the marketers in harnessing the relational and co-creational benefits (value created beyond transactional activities) of branding via technology enabled mass marketing strategies.

- Researches in the area of BE measurement are highly skewed toward developed market experiences, which suggest that the western branding approaches that are based on goods-dominant logic are likely to obscure changes in emerging markets (Ambler et al., 2004; Hayes et al., 2006; Tong and Hawley, 2009a, 2009b).

- Although branding in India is well akin to the western branding approaches, yet it has its own uniqueness and strength. While the western branding models are based on the lines of western consumer thought pattern which is linear, categorical, and isolated in nature, the Indian style of branding is derived from its multi-ethnic fabric and depends on a holistic, networked and affiliated thought pattern of Indian consumers (Schultz, 2008). Therefore, it would be very interesting to explore the determinants of BE in Indian conditions.

- In India, the contribution of services in India is highly significant (58.2 percent of overall GDP in 2011) (http://indiabudget.nic.in). Hospitals and pharmaceutical sectors account for nearly 75 percent of total healthcare market. Further, branding of Indian hospitals has got a high business potential, particularly in terms of providing value-added services to the huge domestic Indian market.

- In terms of medical tourism market, Indian hospital industry has to face fierce competition from hospitals in Thailand, Singapore and Malaysia. In such competitive backdrop Indian hospital brands have to rely on foreign tie-ups and international accreditations for luring foreign patients. Therefore, branding India for health and wellness tourism is one of the prime agenda of corporate hospitals and agencies like India Brand Equity Foundation (IBEF) (Hazarika, 2010).

- Although the Indian hospital industry has a huge potential for new as well as existing players to build new hospitals. Indian hospital industry, at the same time, is characterized by huge competition, as private players account for 68 percent of total healthcare spending in India (CRISIL Research, 2011). Branding can be a very accurate solution through which hospitals can wave-off competitive pressure.

- In absence of any indigenous accreditation system, results of customer-based hospital brand equity measures can serve as a complimentary tool for instilling market trust and leveraging brand potential in domestic and foreign markets by providing low cost solutions, establishment of satellite hospitals, etc.

1.4. RESEARCH PURPOSE AND QUESTIONS

The concept of customer-based brand equity has fast permeated and colonized the branding vernacular so much so that most brand equity researchers use brand equity and customer-based brand equity synonymously. However, despite considerable efforts from the academic and practitioner fraternity, there are several issues that still remain quizzical, unperturbed and uncanny. Based on the theoretical gaps identified in the literature and realizing the importance of branding in emerging markets, the measurement of CBBE can be considered as a vital problem for the Indian hospital industry where there is lack of credible systems of brand performance assessment from the customers' perspective. Therefore, the current problem statement was formulated with the aim of addressing some of the above mentioned issues within the permissible scope of this research. The study in context commenced with the following main purpose and research questions.

Based on the literature survey, it was found that there are few studies on the measurement of BE in hospital industry, particularly in the context of emerging markets like India where the market characteristics differ from those in the developed countries. Further, it was also learned that the earlier brand equity models have been designed on a goods-dominant logic and western (developed market and isolated culture) market experience. The two research questions that were posed in this regard are: (1a) Do CBBE dimensions differ in goods and services? (1b) If they differ, how and to what extent the CBBE dimensions differ in hospital services? The above mentioned issues were addressed with the help of following objective.

Objective 1: To develop a scale for measuring customer-brand hospital brand equity.

The literature highlighted the problems of (1) excessive theorizing of Keller's (1993) and Aaker's (1991) brand equity framework, and the growing number of calls for the (2) need and importance of measuring the relational outcomes of brand equity. In recent years, the relevance of brand loyalty as a measure of CBBE has been questioned by some of the researchers, particularly due to their contention regarding the failure of brand image studies in assessing brand loyalty. The research questions related to these issues were: (2a) Do customers and brands engage in an interpersonal relationship? (2b) If yes, what are the key sources and outcomes of relational brand equity and how are they related? The above research questions were addressed with help of following objective.

Objective 2: To model customer-based HBE and examine relationships between CBBE sources and outcomes.

In literature, the extant BE studies suggest that the customers' brand knowledge is the most fundamental dimension of CBBE and almost all models have predicted customers having high levels of brand knowledge. Although, knowledge is a necessary and a pre-condition for the existence of brand equity, yet in actual situation, high levels of band knowledge may not be always possible. The research questions in this regard were: (3a) Does brand equity exists in conditions of low customer brand knowledge? (3b) If yes, then how does it affect the overall brand equity (knowledge equity, attitudinal equity and relationship equity) and behavioural brand equity outcomes (brand preference, intention to purchase, and behavioural loyalty)? The above questions were addressed with the help of following objective.

Objective 3: To examine moderation effects on the customer-based HBE model based on levels of customer brand knowledge.

1.5. METHODOLOGY OF THE PRESENT RESEARCH

The primary aim of this study was to (1) identify a set of measurement items and develop a scale for measuring customer-based hospital brand equity, (2) develop a model for HBE by examining relationships between key brand equity dimensions and outcomes, and (3) understand variations in the HBE model by assessing moderation effects on the HBE model based on levels of customer brand knowledge. It applied a standard scale development method following the procedure developed by Churchill (1979) and expanded by others (Zaichkowsky, 1985; Arnold and Reynolds, 2003). For examining relationships between brand knowledge, overall brand equity and behavioural brand equity outcomes, the present study uses Exploratory Factor Analysis and Confirmatory Factor Analysis for identifying valid and reliable scale items and modelling of HBE constructs. The Confirmatory Factor Analysis was performed through an advanced modelling technique called structural equations modelling (SEM) in AMOS software. SEM provides a basis for the testing of a theoretically hypothesized model using a two step procedure, in which it first tests whether the identified set of observed variables can define the underlying constructs (or latent variables) and then it test how the hypothesized latent variables are related based on various model fitness parameters. For the scale development and the HBE modelling, data was collected through a questionnaire survey, as done in the case of previous CBBE measurement studies (Christodoulides & de Chernatony, 2010). Thus, SEM served as the primary method of data analysis used for scale development, modelling and examining moderation effects in the HBE model.

1.6. OVERVIEW OF PRESENT RESEARCH

The present research began with a critical and taxonomical review of studies related to BE measurements, which led to an in-depth understanding of literature and identification of knowledge gaps that can serve as a potential problem for this research. A two-way approach of problem identification was applied. First, the literature review helped in deducing the research gaps from a theoretical point-of-view. Second, the industry overview induced the need and scope of CBBE measurement in healthcare domain. The application of both logics helped in the problem formulation, development of conceptual framework, identification of variables and probable methods of CBBE measurement. Based on the literature, the overall research framework for the present study was designed as illustrated in Figure 1.2 of the present chapter.

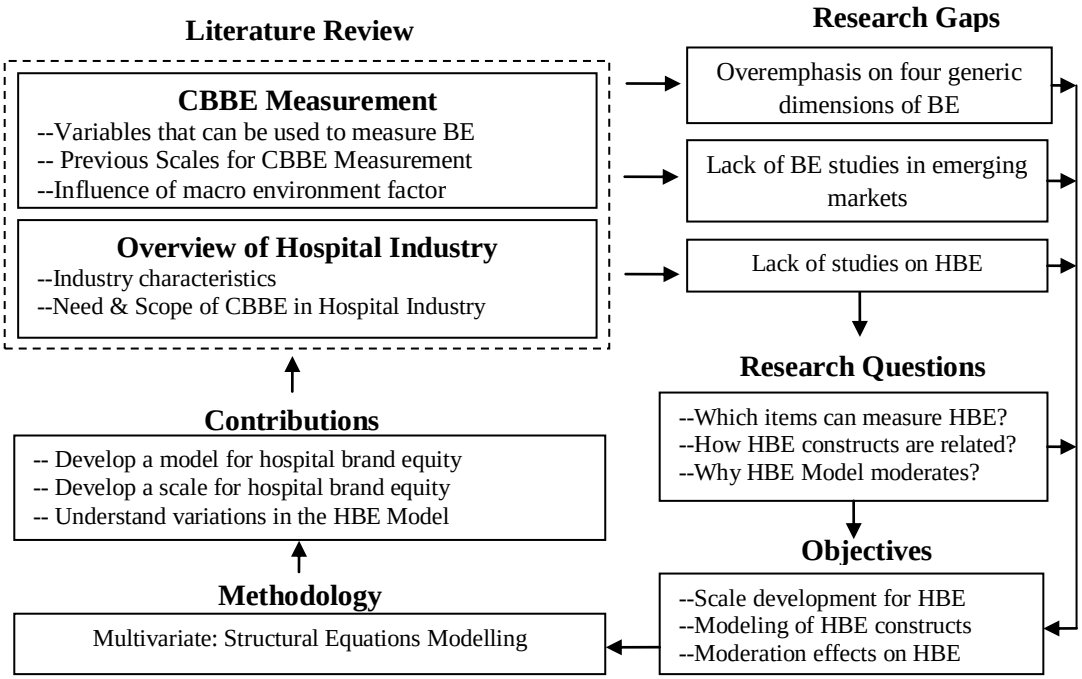

Figure 1.2. Overview of Present Research

The present study has several theoretical and managerial contributions. It identifies and models the sources and outcomes of CBBE in hospital industry by linking brand knowledge with overall brand equity (OBE) and behavioural brand equity (BHE) outcomes. It offers a set of valid and reliable items for the measurement of brand equity in hospital industry. The modelling and moderation analysis results provide guidelines for bringing about changes in the brand equity management system. The modelling results are useful in understanding relationships between BE antecedents and consequences, and the moderation analysis suggests how changes in levels of brand knowledge influence brand equity outcomes.

1.7. CHAPTER ORGANIZATION OF THE THESIS

The studies undertaken for this doctoral research are presented in the form of seven ensuing chapters of this thesis, including the present one. Figure 1.3 provides a schematic view of the same.

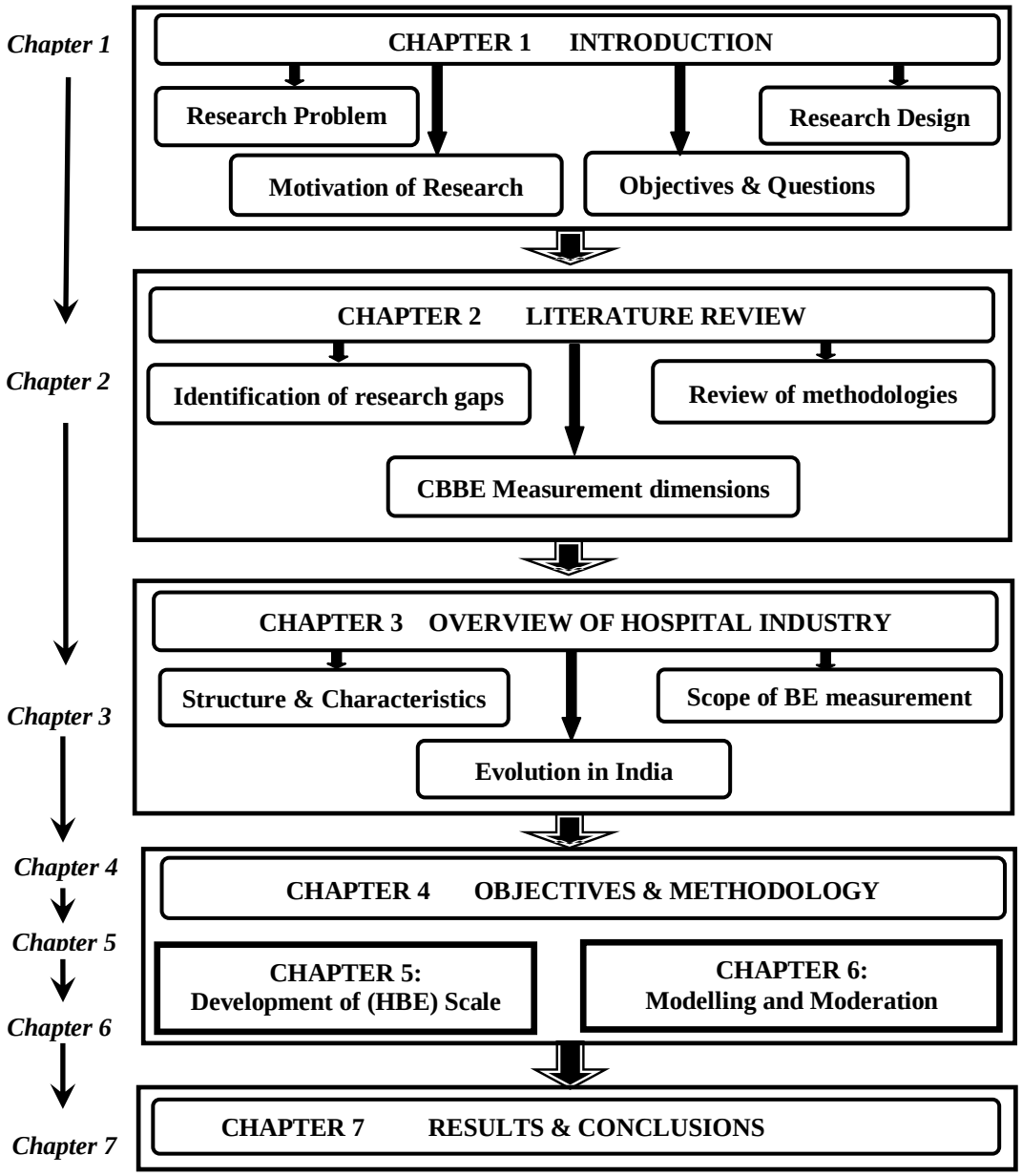

Figure 1.3. Chapter Organization of the Thesis

Chapter One deals with the introduction to the problem statement and the scope and motivations behind pursuing this research. Chapter Two is the review of literature which helps in identifying research gaps from a theoretical point of view. Chapter Three presents an industry overview in order to highlight upon the need and scope of hospital BE measurement. Chapter Four deal with the research design and methodology of the study.

Chapter Five deal with the development of a scale for measuring CBBE of hospital brands. Chapter Six engages in modelling customer-based HBE by examining relationships between brand knowledge, OBE and BHE constructs, and in the later part of the chapter, it performs a moderation analysis to understand variations in the HBE model. Chapter Seven presents the summary of major findings, conclusions and discussions regarding the present research.

1.8. CONCLUSION

The present chapter has so far engaged in providing an introduction to this doctoral research work. It highlighted on the emergence of the problem statement in question by discussing the research gaps that were identified from the critical and the taxonomical review of BE literature (see Chapter Two). Further, coupled with the significance and motivations for pursuing this research work, the research gaps lead to the further expounding of problem statement. The chapter explained how the current problem statement is embedded in brand equity theory and practice. Further, it briefly touched upon the conceptual framework to be tested, and the overall research design, context and setup for achieving the objectives of the present study. In the end, it presents the overall research framework and the chapterization scheme to give a brief idea of the research work accomplished in the subsequent chapters of this thesis.

Chapter 2
LITERATURE REVIEW

This chapter deals with the review of literature. In light of some of the highly commended studies on non-financial CBBE measurement, this chapter identifies various research gaps for problem formulation and development of conceptual framework and hypotheses. In this chapter, a critical as well as taxonomical approach of literature review has been adopted to arrive at the research gaps and key variables, and to get acquainted with the methodology for scale development and modelling that were used in past.

2. INTRODUCTION

In the last few decades, the measurement of brand equity (BE) has become a fundamental problem for the marketers (Clark, 1999). Particularly, this phenomenon could be noted in organizations which have shifted their marketing strategies from mere "brand strategies to brand-based strategies", or it could be also found in those organizations whose brand related marketing expenditures have been significant (Morgan et al., 2002). Brand performance refers to a brand's market success or the positive outcomes of brand marketing strategies (Wong and Merrilees, 2008). A formalized system of brand performance provides information to the managers as to how they can sustain or alter patterns of activities to achieve the desired level of brand outcomes (Anthony, 1988; Jaworski, 1988; Simons, 1991; Morgan et al., 2002). But, critics often suggest that performance systems can become ineffective if they are not backed by a well defined objective, appropriate performance standards, and stringent system of appraisal and review (Bonoma and Crittenden, 1988).

Researches in the area of brand performance measurement have consistently focused on those brand performance metrics that directly or indirectly relate to the measurement of brand equity (Clark, 1999). Brand equity is a composite measure of brand value which results from the special acts of the firms called branding. But, despite multiplicity in the availability of BE measures, it has had little impact on the consistency and standardized application of those measures in different industries, particularly in service sector (Hsu et al., 2012; Christodoulides and de-Chernatony, 2010; Kartono and Rao, 2008). The trouble sited with the current BE measurements are many, ranging from very conceptualization to data availability issues (Voleti, 2009). Today, brands have not only become an un-separated part of firm value but have also come to settle down as an important two dimensional strategic asset for the firms, which Keller and Lehmann's (2001) brand value chain (BVC)

model describe as customer assets (value of relationship with brand's current and potential customers) and brand assets (what customers' value in a brand) that a firm can achieve through its brand related activities. But, the current models of BE fail to establish clear linkages between brand assets (brand equity) and customer assets (customer equity).

Although, the fundamental idea behind relationship marketing and brand equity is to develop customer commitment or brand loyalty (Vargo and Lusch, 2004; Seth, 2002; Webster, 1992; Kotler, 1991; Gronroos, 1991, 1999), yet high levels of conflict have been recorded with regard to the application of theories and concepts of interpersonal relationship in assessing brand equity. While one group of researchers totally negate the possibility of customer-brand relationships (CBRs), the other group considers CBRs as an extension of brand personality research (Blackston, 1993, 2000). They attribute their theory to the failure of brand image studies in predicting customer behaviour, and consider CBR as a better predictor of brand commitment than conventional brand loyalty (Patterson and O'Malley, 2006). Although, the focus of brand equity and customer-brand relationship is customer loyalty (Story and Hess, 2006), yet loyalty is not an essential condition for CBR. Consequently, there is an increasing call from researchers to look into the relational outcomes of brand equity (e.g. Wang et al., 2009; Petterson and O'Malley, 2006).

The literature suggests that the current studies on BE are highly skewed toward developed market experience (Ambler et al., 2004). Although, the fundamental aspects of a HBE model in developed market is unlikely to change significantly in an emerging market, yet some business and non-business related issues are likely to influence those outcomes in different countries (Whitley, 1992). Since, brands not only respond to their competitor's action but also instigate adaptive measures for changes in the macro environment (Dickson, 1992; Ratneshwar et al., 1993), therefore, apart from economic profits, BE measures need to capture the environmental and social value of brands to the customers (Elkington, 1998).

Since the emergence of branding, most studies have used a good dominant logic as a point of reference for the development of branding strategies (Boo et al., 2009). Consequently, practitioners and researchers have largely ignored the service dominant approach of branding. In the 21st century, the service industries are booming worldwide (Hsieh et al., 2008) and their growth and survival highly depends on the customer-driven services delivered by them (Khan and Mahapatra, 2009). In India and other countries of the world, services form a major part of the business system and plays a vital role in the development

of the country's economy (Tripathy, 2011). However, not many studies are attributed to the consumer behaviour of Indians, particularly in the brand equity domain.

For the identification of research gaps, a literature review was conducted on the basis of taxonomical and critical approach. For taxonomical classification only journal publications were used as: (1) all other information are either motivated from or disseminated through these journals; (2) journals are believed to communicate the highest level of research (Nord and Nord, 1995 as cited in Ngai, 2005) and; (3) the quality of content in journal articles can be easily evaluated. But, a taxonomic approach of literature review has limitations as it is only helpful in classifying and understanding the depth and breadth of literature, and does not critically probe into the arguments, inaccuracies, and obsolete ideas that relate to the causation of some phenomenon that has taken place much before the present day. Therefore, the present review of literature has used a combination of both approaches. For this purpose, the existing body of BE literature has been first broadly classified on the basis of various themes and then critically examined to understand the depth and breadth of literature as well as the growth of critical concepts and theories along with their criticisms. The literature was first classified on the basis of following four main categories as: (a) conceptualization of BE, (b) review of measurement approaches, (c) distribution of articles on various taxonomical themes, (d) review of studies on the basis of methodology. Figure 2.1 presents the further sub-categories that were followed for the review process. On the basis of the findings of this literature review, the research gaps were identified and the conceptual model was framed for the future research.

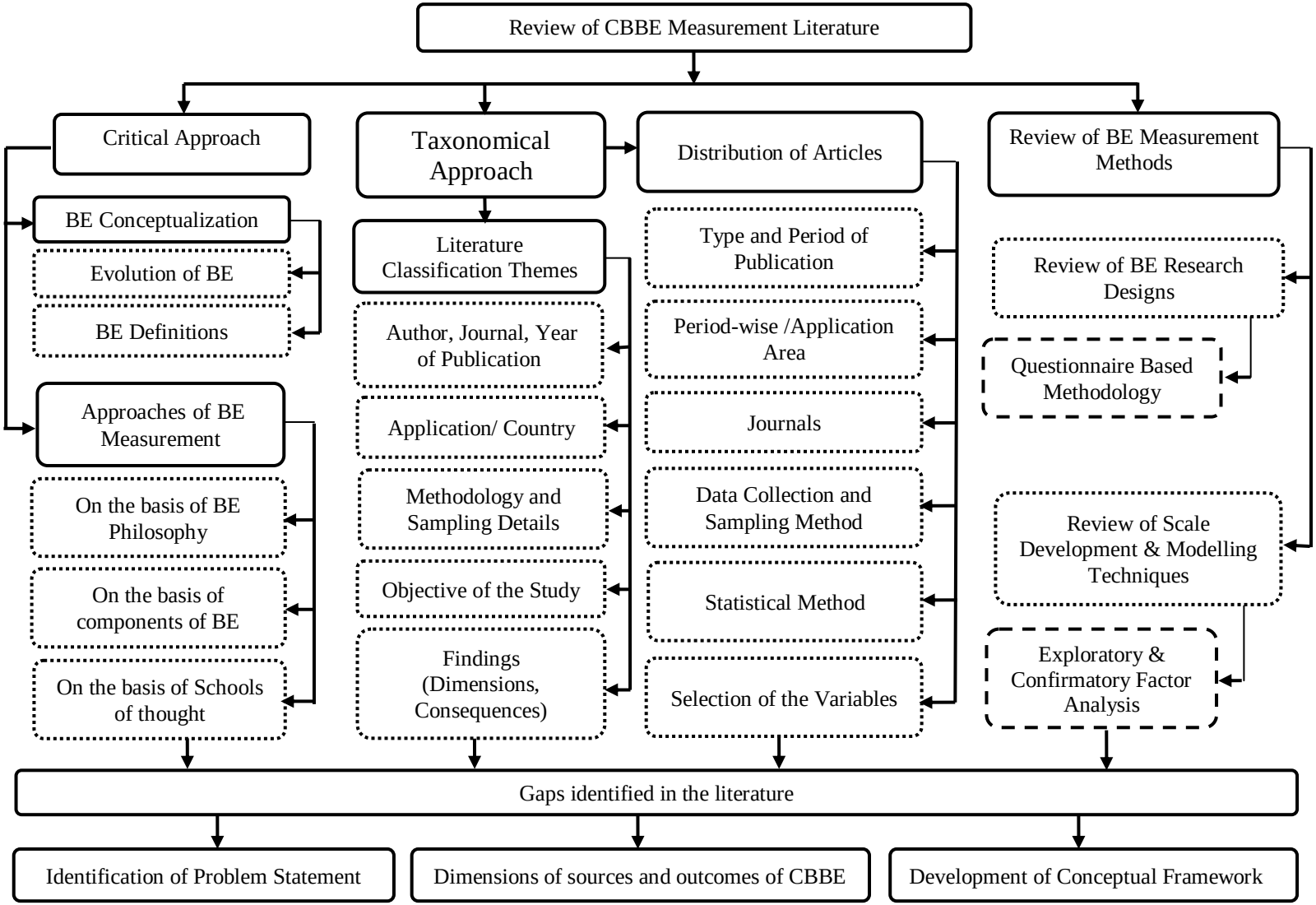

Figure 2.1. Literature Review Scheme

2.1. BRAND EQUITY CONCEPTUALIZATION

There are various definitions of brand equity that are conceptualized from the perspective of market agents—customer, firm and employees; academic disciplines—social cognitive psychology and information economics; and philosophy—additive and inclusive approaches. The following sections present the definitions and evolution of brand equity.

2.1.1. Brand Equity Evolution

Although, the emergence of branding can be traced back to the days of early civilization, it did not formally start being used as a way of marketing until early 1900 (Stern, 2006; Room, 1998), when the neo-classical economists in their theory of exchange viewed endowment of products with added features (value) as the central idea of exchange (Vargo & Morgan, 2005). The concept of brand equity came even much later (in late 1980s), which marked the beginning of a new era in marketing (Merz et al., 2009). The concept of CBBE came even much later. However, the concept of CBBE has gradually, during 1990s-2000, shifted its focus from customer brand knowledge to customer-brand relationships (Fournier, 1998; Gobe, 2001). Further, in recent years the focus of CBBE seems to have entered the realm of society by creating an interactive network between the firm, brand, stakeholders, and the society at large (Ballantyne and Aitken, 2007; Ind and Bjerke, 2007; Jones, 2005). Table 2.1 presents a chronological evolution of the brand equity concept.

The early academic literature on branding started appearing over and over again in the early 1930s (Merz et al., 2009) and at this time, increasing attention to branding changed the focus of brand value from mere identity creation to the creation of brand images (Gardner and Levy, 1955; White, 1959; Oxenfeldt and Swann, 1964). Practically, researchers started measuring the effect of a brand's functional and symbolic associations on customer's purchase decision (Merz et al., 2009). So, before 1955 the focus of branding was on brand value by creating functional brand images (Gardner and Levy, 1955). At this time, the physical characteristics of the brand, packaging, price and warranties affected consumer brand choice (Brown, 1950). In 1955, Gardner and Levy started looking at the social and psychological aspects of brands and learned that the symbolic benefit associations demarcated product and brand (Gardner and Levy, 1955; Levy, 1959). With this realization, brand scholars started viewing brand value embedded in the intangible attributes of the brand (such as images). In the early 1990s, a paradigm shift in the branding logic came when both "producer" and "customer" were seen as co-creators of brand value (Merz et al., 2009). However, with concepts like sustainability at the door steps of branding, the BE logic needs

to be revised in order to include an ecosystem view of brand value creation by governing the entire network of relationships between firm and socially interdependent and mutually co-creating individuals including customers, employees, supply chain partners, pressure groups, media, etc.

Table 2.1. Brand Equity Evolution

Era	Focus	Description	Bibliography
1990s-2000: Brand Relationship Era			
Customer-Firm Relationship	Brand Knowledge • Brand awareness • Brand image • Perceived Quality • Brand loyalty	Customer as operant resources and co-creators of brand value; BE emerge due to customers' brand knowledge; constructs based on cognitive psychology.	Aaker, 1991; Kapferer, 1992; Keller, 1993; Blattberg and Deighton, 1996
Customer-Brand Relationship	Brand Relationship • Trust • Commitment • Brand personality	Dyadic relationships; brand value co-creation process as relational; process orientation	Aaker, 1997; Fournier, 1998; Gobe, 2001
Firm-Brand Relationship	Employee –Brand Relationship • Brand Promise	Internal customers (employees) as operant resources and as co-creators of brand value	Berry, 2000; de Chernatony, 1999; Gilly and Wolfinbarger, 1998; King, 1991
2000 onwards: Stakeholder Relationship Era			
Brand-Stakeholder Relationship	Social bonding • Brand community	All stakeholders constitute as operant resources; Brand value co-creation as a dynamic, social, interactive and continuous process by all stakeholders	Mc Alexander et al. 2002; Muniz et al. 2001; Muniz et al. 2005; Ballantyne and Aitken 2007, Jones 2005; Ind and Bjerke 2007
Firm-Brand-Stakeholder Relationship	Corporate Social Responsibility • Corporate social image	Brand value creation as a result of corporate social practices inside and outside of business	First and Khetriwal, 2010; Ibanez and Sainz, 2005; Young and Tilley, 2006; Woodland and Acott, 2007; Chabowski et al, 2011; Pant, 2005; Kotler, 2003
Brand-customer-Society Relationship (Future Perspective)	Brand Sustainability • Brand Sustainability image	Brand value based on sustainability image of the firm as well as the product; societal marketing concept is more likely to be successful	Srivastava, 1995; Kotler and Roger, 2003; Cleveland et al, 2005

In the early 1980s, advertising practitioners first coined the term "brand equity" to refer to the value of a brand name (Barwise, 1993). In 1988, the Marketing Science Institute (MSI) invited managers and practitioners from various appellations to an exploratory conference to "…provide an integrated industry and academic perspective on the various aspects of brand equity" (Leuthesser, 1988, p.88). Consequently, Keller (1993) introduced the concept of customer-based brand equity (CBBE) model as "…a unique point of view as to what brand

equity is and how it should best be built, measured, and managed" (Keller, 2009, p.70). According to Keller, customer is central to and the most powerful element of BE. Therefore, everything should be sourced, resourced and allocated in the name of the customer. This notion qualified CBBE to be a separate paradigm of BE. Although, from its very conception, many models of CBBE have emerged (Srinivasan et al., 2005) but yet the concept of BE and it's related issues are subject of a far reaching debate (Vazquez et al., 2002; Feldwick, 1996; Chaudhari, 1995; Ambler and Styles, 1995).

2.1.2. BE Conceptualization and Definition

Literature presents different definitions of BE, but most of these definitions converge with the Farquhar's (1989) idea that brand equity is "the added value with which a given brand endows a product" (p. 24). A review of various BE definitions (see Table 2.2) suggests two major findings: (1) most brand equity definitions focus on the market agents—either customer (Erdem and Swait, 1998; Keller, 1993) or the firm (Farquhar, 1989; Biel, 1992), and (2) brand equity is mainly defined on the basis of two theoretical approaches—on the basis of social psychology (Keller, 1993) or information economic (Erdem and Swait, 1998). However, the extant definitions of BE are not free from confusions.

Table 2.2. Brand Equity Definitions

Author	Year	Focus	Definition
Farquhar	1989	Mixed	"The added value to the firm, the trade, or the consumer with which a given brand endows a product"
Aaker	1991	Mixed	"A set of brand assets and liabilities linked to a brand, its name and symbol, that add to or subtract from the value provided by a product or service to the firm and/or to that firm's customers"
Brodsky	1991	Financial	"The sales and profit impact enjoyed as a result of prior years marketing efforts versus a comparable new brand"
Simon & Sullivan	1993	Financial	"The difference in incremental cash flows between a branded product and an unbranded competitor"
Keller	1993	Customer-based	"The differential effect of brand knowledge on consumer response to the marketing of the brand"
Srivastava & Shocker	1994	Mixed	"Brand equity subsumes brand strength and brand value. Brand strength is the set of associations and behaviors on the part of the brands customers, channel members, and parent corporation that permits the brand to enjoy sustainable and differentiated competitive advantages. Brand value is the financial outcome of management's ability to leverage brand strength via tactical and strategic actions in providing superior current and future profits and lowered risks"
BE Board		Customer-based	"Brands with equity provide an ownable, trustworthy, relevant, distinctive promise to consumers"
Marketing Science Institute	1999	Mixed	"The set of associations and behaviors on the part of the brand's customers, channel members, and parent corporation that permits the brand to earn greater volume or greater margins than it could without the brand name and that gives the brand a strong, sustainable, and differentiated advantage over competitors"

Keller (1993) with the objective of dispelling and obviating those confusions presented customer-based brand equity model, which is much more clear, focused and integrative in nature. But in actual, Keller did not operationalize his CBBE model. Succeeding scholars conceptualized CBBE from two schools of thought---psychological and economic. The psychological school conceptualized CBBE in terms of customer's cognitive and behavioral manifestation (thoughts, feelings, knowledge, and ultimately purchase behavior), and the economic school considers customers' brand "credibility" as the main determinant of BE that are expressed in terms of possible augmentation in the customers' expected brand utility (Erdem and Swait, 1998).

From the perspective of market agents, researchers have conceptualized BE in the customer, firm and employee perspective. Customer-based brand equity (CBBE) measures relate to the customer mind-set and that are prime sources of associated financial brand equity (Keller, 2003). Arguing for CBBE, Keller (1993) state that BE is something that resides in the mind of the consumers. Therefore, brand knowledge is the sole panacea (main source) of BE. From the firms' perspective, Srivastava and Shocker (1991) defined BE as "the aggregation of all accumulated attitudes and behavior patterns in the extended minds of consumers, distribution channels and influence agents which enhance future profits and long term cash flow" (p.5). Cobb-Walgren et al. (1995) view the customer and firm perspective from an integrative approach, as "[t]here is value to investor, the manufacturer and the retailer only if there is value to the customer"(p.26). Figure 2.2 presents an integrative framework of BE. Although, the two perspectives—customer and firm--are invariably linked together and consider one as the aggregated outcome of the other, yet most BE researchers advocate for customer-based measures of BE (Crimmis, 1992; Farquhar, 1989; Keller, 1993).

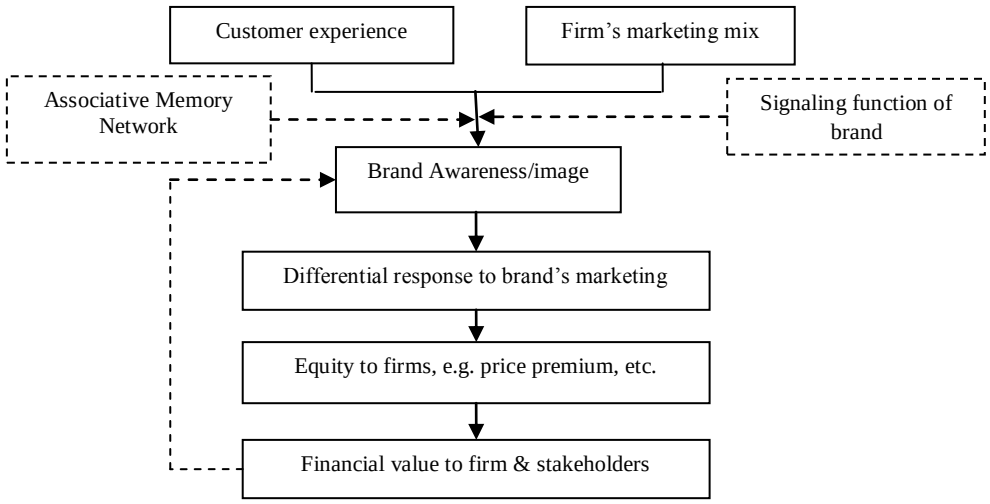

Figure 2.2. Integrative BE Framework

Further, some scholars have also conceptualized on the basis of philosophy by considering BE from in the additive (Ambler and Barwise, 1998) and inclusive approaches (Barwise, 1993). In additive approach, BE arises due to the additional brand features. This approach focuses on incremental effects created due to differences in: brand name (Srivastava and Shocker, 1991); brand knowledge (Keller, 1993); consumer choice (Yoo et al., 2000); and incremental brand preference (Park and Srinivasan, 1994; Ailawadi et al., 2003). Therefore, the additive measures of BE are based on decomposition methods. However, the additive approach of BE leads to various measurement complexities regarding: (1) reliability of brand value and product value separation (Abela, 2003); (2) separation of actual product quality and perceived product quality (Ambler and Barwise, 1998); and whether the service experience should be considered as a part of the brand or product (Abela, 2003).

Contrary to the additive approach, the inclusive view of BE believes in the organic unity of brand and product. Consequently, inclusive measures of BE relate to the value of product and brand as a whole. Advocates of this approach view branding as a transformation in the product and not as 'something plus' (Abela, 2003). In the inclusive approach of branding, brands are considered as a kind of niche within the product category they belong to having characteristics that are common to the category as well as unique to the brand.

2.2. MEASUREMENT OF BRAND EQUITY

The existing measures of BE can be classified on the basis of various approaches: (1) on the basis of outcomes---customer mind-set measures, product-market performance measures, and firm level performance measures (Table 2.3); (2) on the basis of market agents—customer-based, firm-based and employee-based brand equity (Figure 2.3); (3) on the basis of schools of thought--social cognitive psychology and information economics (Figure 2.3); (4) on the basis of measurement components---direct and indirect measures (Figure 2.3); (5) on the basis of measurement philosophy--additive and inclusive; and (6) on the basis of measurement efforts—academic and commercial measures. Based on the above mentioned approaches, the extant brand equity literature has been classified, critically evaluated and discussed in the subsequent sections of this chapter. The above classification scheme could be found in various research papers, but the present classification scheme has been mainly drawn from two studies (Christodoulides and de-Chernatony, 2010; Kartono and Rao, 2008).

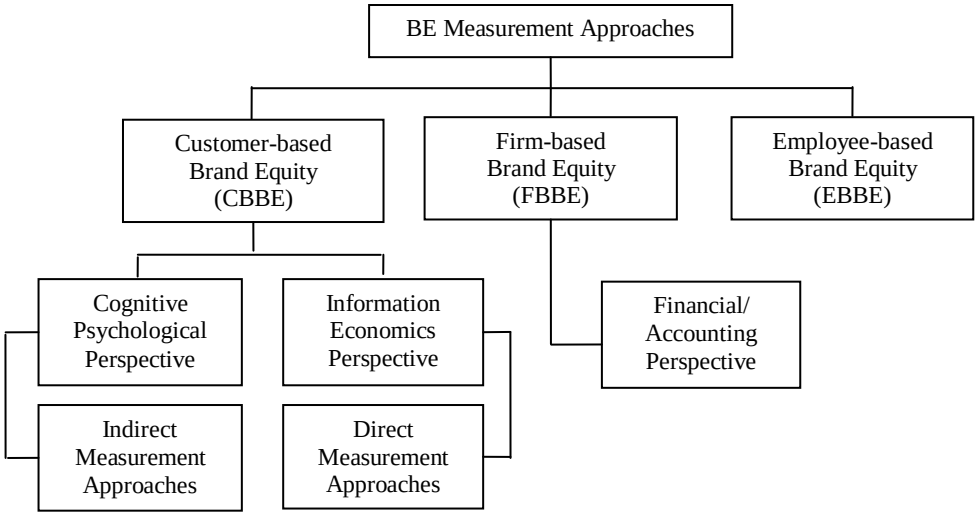

Figure 2.3. Classifications of Brand Equity Measures

On the basis of measurement outcomes, BE measures have been classified as measures of customer mind-set, product-market performance and firm level performance (Table 2.3). The customer mind-set measures are based on various components that relate to the Keller's five BE stages-"brand awareness, brand associations, attitude, attachment, and activity" (Keller, 2009), which measures five different aspects of customer's cognitive responses toward the brand. For example, Netemeyer et al. (2004) have used four dimensions: perceived quality, perceived value for the cost, uniqueness, and willingness to pay price premium, as measures of customer mind-set. Yoo and Donthu (2001) applied brand loyalty, perceived quality and brand awareness/associations as three brand equity dimensions. Similarly, Lassar et al. (1995) also developed a scale using five brand equity dimensions: value, attachment, trustworthiness, social image and performance. Some scholars have attempted to measure customers' mind-set by using a single number representing added value due to brand name (e.g. Kamakura and Russell, 1993; Louvier and Johnson, 1988; Park and Srinivasan, 1994; Rangaswamy et al., 1993; Srinivasan, 1979). Louvier and Johnson (1988) have measured the additional utility derived due to product attributes. Kamakura and Russell (1993) used "intrinsic utility" as a measure of brand value arising due to intangible characteristics of the product.

Besides customer mind-set, BE scholars have assumed that BE results in increased brand market performance (e.g. Aaker, 1991). Therefore, they have proposed six key dimensions of BE as price premium, price elasticity, market share, expansion success, cost structure and profitability. The first three measures: price premium (Aaker, 1991; Bello and Holbrook, 1995; Holbrook, 1992), price elasticity, and market share (Aaker, 1991) capture a brand's

potential for generating that extra revenue, but at the same time, it fails to assess the overall brand equity of a brand. The other three dimensions certainly represent a better view of brand performance but in actual use it may suffer from several limitations due to lack of cost information, or availability of private label for benchmarking. Therefore despite product market measures being an objective measure, and useful for financial brand valuation, it has limited use in marketing due to lack of necessary information.

Table 2.3. Component-based Classifications of BE Measures

Consumer Mind-set Measures	Product-market Performance	Firm Level Performance
• Brand awareness (e.g. Aaker, 1991; Keller, 1993)	• Market Share (Aaker, 1991)	• Stock price (e.g. Simon and Sullivan, 1993)
• Brand image (e.g. Keller, 1993)	• Price premium (Bello and Holbrook, 1995; Holbrook, 1992)	• Value in acquisition
• Brand loyalty/attachment (e.g. Aaker, 1991; Yoo and Donthu, 2001)	• Revenue premium (Ailawadi et al. 2003)	• Interbrand brand valuation
• Brand activity (e.g. Keller, 2002)	• Price elasticity (Mela, Gupta and Lehmann, 1997)	• Y&R's Brand Asset Valuator
• Overall assessment of customer mind-set (e.g. Lassar et al., 1995; Netemeyer et al. 2004; Yoo and Donthu, 2001)	• Prifitability (Dubin, 1998)	
• Additional customer utility (Louvier and Johnson, 1988)	• Brand utility intercept (Sriram, Blachander and kalwani, 2007)	
• Consumer utility instrinsic to brand (Kamkura and Russell, 1993)		
• Non-attribute related value (Park and Srinivasan, 1994)		

Apart from the customer-mind set and the product-market performance measures, several firm-level measures of BE have been also proposed to assess the financial value created by the brand to the firm. Such measures are based on the subjective evaluation of brand's risk profile, market stability and the global outreach of the brand (Ailawadi et al., 2003). These measures isolate the revenue earned from the focal brand from that of the firm, which could be very difficult in most of the cases (Ailawadi et al., 2003). Therefore, considering the nature and limitations of each of these measures, many authors (e.g., Keller and Lehmann, 2003; Das, 2008; and others) have tried to establish relationships between theses three categories of BE measures. For example, the Keller and Lehmann's (2003) Brand Value Chain Model (see Figure 2.4) serve as one of the most popular integrative framework for understanding the relationships between the three categories of measures.

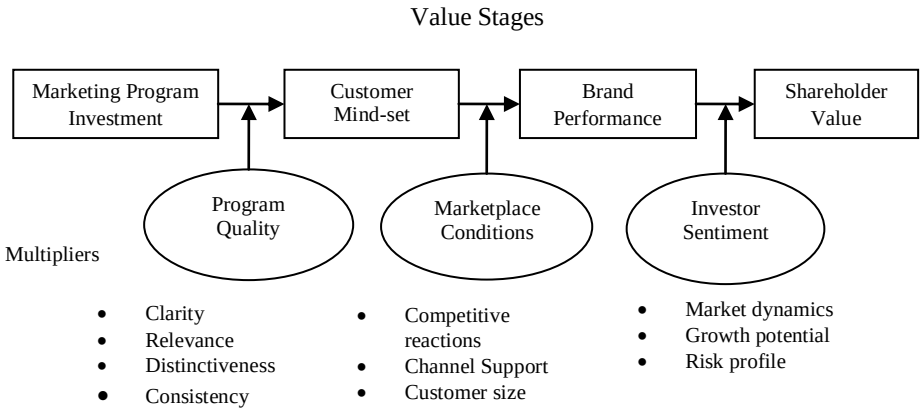

Figure 2.4 Brand Value Chain Model (Keller and Lehmann, 2003, p. 29)

Further on the basis of market agents, BE measures have been classified as customer-based, firm-based and employee-based measures (see Figure 2.3). The three approaches are applied to measure the brand related response of the respective market agents. Besides market agents, the extant BE measurement approaches can be classified on the basis of schools of thought, i.e. the psychological school and the economic school. BE measures can also be classified as: direct and indirect BE measures. The direct measure focuses on customers' preferences (e.g. Srinivasan, 1979; Park and Srinivasan, 1994), or brand utilities (e.g. Kamakura and Russell, 1993; Swait et al., 1993). The direct measures neglect the individual components of BE and rather try to use a decomposition approach by separating the value of brand from the value of product. However, over the years this method has proved to be problematic due to the value separation issue. The decomposition method was applied by several scholars, like Park and Srinivasan (1994); Rangaswamy et al. (1993); Kamakura and Russell (1993). Overall the decomposition approach is based on segregation of value derived due to brand name from overall brand value perceived by the customer. Unlike preferences based measures, Kamakura and Russell (1993) have used real purchase data to measure the utility implied or the value customers assigned to the brand. Swait et al. (1993) have used the entire utility value of a brand called, "Equalization Price, to measure the monetary value that a customer has derived from a product bundle consisting of brand, product attributes and price. Shankar et al. (2008) used two multiplicative components approach of brand equity-by considering offering value and relative brand importance as the key dimensions of BE. But, compared to the direct measures, the indirect measures of BE are widely used and have been considered much more holistic. Therefore, there are more number of studies on this approach

of BE. Table 2.4 presents a review of various studies based on the above mentioned two approaches.

Table 2.4. Direct and Indirect Measures of BE

Measurement	Dimensions	Level	Context	Product category
Direct Approach of BE Measurement				
Srinivasan (1979)	n.a	Aggregate	US	Healthcare
Kamakura & Russell (1993)	Perceived quality Brand intangible value	Aggregate	US	Detergents
Swait et al. (1993)	n.a	Individual	US	Deodorants, Jeans, Trainers
Park & Srinivasan (1994)	Attribute based Non-attribute based	Individual	US	Toothpaste, Mouthwash
Leuthesser et al. (1995)	n.a	Individual	Austria	Detergents
Shankar et al. (2008)	Offering value, relative brand importance	Aggregate	US	Insurance
Indirect Approach of BE Measurement				
Lassar et al. (1995)	Performance, social image, value, trustworthiness, attachment	Individual	US	Television, Watches
Yoo & Donthu (2001)	Brand awareness, associations, perceived quality, brand loyalty	Individual	US, Korea	Athletic shoes, film, colour television sets
Vazquez et al. (2002)	Product's functional and symbolic utility, and brand's functional and symbolic utility	Individual	Spain	Sports shoes
Washburn and Plank (2002)	Brand awareness, associations, perceived quality, and loyalty	Individual	US	Crisps, paper towel
de Chernatony et al. (2004)	Brand loyalty, satisfaction, reputation	Individual	UK	Financial services
Netemeyer et al. (2004)	Perceived quality, perceived value for cost, uniqueness, willingness to pay price premium	Individual	US	Colas, toothpaste, athletic shoes, jeans
Pappu et al. (2005)	Awareness, associations, perceived quality, brand loyalty	Individual	Australia	Cars, televisions
Buil et al. (2008)	Awareness, associations, perceived quality, brand loyalty	Individual	UK, Spain	Soft drinks, sportswear, electronics, cars
Ailawadi et al. (2003)	n.a.	Aggregate	US	Consumer packaged goods, groceries

Parallel with the academic models, consultancies and research firms have also proposed their models, which cannot be ignored, considering their usage in practice (Christodoulides and de Chernatony, 2010; Mizik and Jacobson, 2008; Chu and Keh, 2006). Table 2.5 presents a

comparison of both models. Most commercial measures seek to measure BE by examining market performance. For calculating BE, Interbrand, the first company to offer such BE measures, includes data on market leadership, stability, internationality, trends of the brand, support, level of protection, and characteristics of the markets in which it operates (Keller 1998). Parallel to the academic orientation, consulting firms have their own method of valuing brand equity (Reynolds and Phillips, 2005). Winters (1991) has highlighted six such measures: share of mind and esteem (Landor Associates), quality perception (Total Research corporation), willingness to re-purchase (Market Facts, Inc.), level of commitment to a brand (Yankelovich Clancy Shulman), profit potential (Longman-Moran Analytics), composite awareness, liking and perceived quality (DDB Needham Worldwide).

Table 2.5. Comparison of Academic and Commercial BE Measures

Academic Measures		Commercial Measures	
Study	Dimensions	Organization	Dimensions
Aaker , 1991, 1996	Brand awareness Brand associations Perceived quality Brand loyalty	Interbrand's brand Strength Measure	Market Stability, Brand leadership, Trend, Brand support, Diversification, Protection
Blackston, 1992	Brand relationship (trust and customer satisfaction)	Y&R Brand Asset Valuator	Knowledge, Esteem, Relevance, Differentiation
Keller, 1993	Brand knowledge (brand awareness, brand associations)	WPP Brand Dynamics	Presence, Relevance, Performance, Advantage, Bonding
Berry, 2000	Brand awareness Brand meaning	Research International Equity Engine	Affinity, Perceived functional performance, interaction between brand equity and its price
Burmann et al., 2009	Brand benefit clarity, Perceived brand quality, Brand benefit uniqueness, Brand sympathy, Brand trust	DDB Needham Worldwide	Brand awareness Liking Perceived Quality

2.3. GAPS IDENTIFIED ON THE BASIS OF CRITICAL REVIEW

With increasing call for more pragmatic models, a range of BE models has been proposed (Aaker, 1991; Keller, 1993; Berry, 2000; Srinivasan et al., 2005; Yoo et al., 2001; Pappu et

al., 2005; Faircloth et al., 2001; Christodoulides, 2009; Christodoulides et al., 2009) in the various perspectives. But, several theoretical gaps can be identified (also see Appendix-II). The following section highlights some research gaps in light of some of the most influential studies in this area.

1. Srinivasan (1979): used conjoint methods to measure BE in terms of a dollar metric scale, which he then called as 'brand specific effect'. Similar efforts were put in by other scholar to measure the preference or choice due to brand name effects and interaction of brand name effects on other variables of marketing mix (Green and Wind, 1975; Green and Srinivasan, 1978; Rangaswamy et al., 1990). The major issue with this method is that it neither identifies the sources of BE nor can be measureable at the individual level. Years later in 1994, Park and Srinivasan came up with an individual level measure of BE which they defined as 'the difference between an individual consumer's overall brand preference and his or her multi-attributed preference based in objectively measured attribute levels' (p.273). They further divided the consumer's preferences into attribute based components-consisting of physical characteristics of the product and non-attribute based components-consisting of symbolic elements related to the brand. Although, it sheds light on the perceptual distortions of consumer, this method suffers from following criticisms: (1) it is not clear with regard to non attribute components; (2) it does not account for measurement error arising due to differences in overall preference and preferences based on objectively measured attributes.

2. Swait et al. (1993): shifted from additive to inclusive approach of BE. In their 'Equalization Price' (EP) model—they measured 'the monetary expression of the utility a consumer attributes to a bundle consisting of a brand name, product attributes and price' (p. 30). Through a multinomial logit model, EP was calculated as a hypothetical price at which a consumer's purchase will have the same market share for each brand (Barwise, 1993). The major improvements and advantages of this measure are that: (1) it identified the sources of BE; (2) assigned weights to each component of the consumer utility function based on their importance; (3) permits measurement at the individual level. However, the issue which seriously limits the use of this model is its assumption that all consumers have identical preferences, making it inappropriate for markets characterized by inhomogeneous consumer choice (Christodoulides and de Chernatony., 2010; Christodoulides et al., 2006).

3. Kamakura and Russell (1993): took a major departure from the multi-attribute approaches, which proved to be conceptually and methodologically problematic, and measured CBBE as 'the implied utility or value assigned to a brand by consumers' (p. 10). They devised a proxy measure of brand value by removing the short term effects caused due to advertising and price promotions. This method assumes the separability of brand value into two parts: brand value-measure of brand's competitive positioning; and intangible brand value-measure of brand associations and perceptual distortions. Although this method reflects the actual consumer behavior, it suffers serious problems with regard to following issues: (1) it too does not measure CBBE at individual consumer level, as seen in earlier methods; (2) the study is limited to the availability of scanner data; (3) intangible brand value is not further decomposable so that the sources of brand value may be controlled.

4. Leuthesser et al. (1995): working on the limitations of multi-attribute BE approach found that the consumer's subjective brand attribute evaluation was not free from biasness due to inherent predispositions, which they called as 'halo effect'. They postulated that the 'halo effect' refers to the aggregate value of the brand. Based on an additive approach, the authors use 'partialling out' and 'double centering' method to isolate this halo effect (Leuthesser et al., 1995). However, the 'halo effect' measure also has limitations due to following reasons: (1) it also does not measure the sources of brand equity; (2) it does not account for brand equity arising due to brand name associations; (3) it is best measured at the aggregate level. This method is more suitable in product categories where positioning of brands is done on functional or experiential attributes (Park et al., 1986).

5. Lassar et al. (1995): their measurement began with the **Martin and Brown's, (1990)** five dimensions: perceived quality, perceived value, image, trustworthiness and commitment. Later, Lassar et al. (1995) refined these dimensions to three: performance, social image and identification/attachment. Understanding the difficulties arising due to theoretical inconsistency and methodological complexities in the previous researches, Lassar et al.'s (1995) framework was validated through a consumer survey in two product categories, namely TV monitors and watches. Although, the abstractness of scale had the merit of being applied in different product category, it suffered from the following demerits: (1) the external validity of the scale was not reported; (2) the scale was validated on a convenience sample of 113 consumers which was inadequate for confirmatory factor analysis; (3) it did not include one of the important behavioral components of CBBE i.e. brand loyalty.

6. Yoo et al. (2000) and **Yoo and Donthu (2001):** used three dimensions of CBBE: brand loyalty, perceived quality, and brand awareness/associations. In order to measure the convergent validity of the multidimensional scale, a four item uni-dimensional measure called 'overall brand equity' was used. The model was found valid, reliable, and parsimonious in a rigorous multi-step validation process. This study had more strength and fewer weaknesses. The advantages are that it: (1) allows for an individual level measure of CBBE; (2) is validated in a cross cultural setting; (3) proved the multidimensionality of the scale; (4) can be applicable in different product categories without any modification; (5) motivating for the development of an universal measure of CBBE. However, the scale is criticized for having the following limitations: (1) it contradicts the theoretical grounding of Aaker (1991) and Keller (1993) with regard to brand awareness and brand associations by considering it as a single dimension; (2) the scale is exclusively validated on a student sample which limit its generalization; (3) although there is abundance of brands in service sector, the study did not include any of them which further limits its applicability in the service sector. Yoo and Donthu's (2001) scale was later validated by Washburn and Plank (2002). They suggest on re-evaluating the items included in Yoo and Donthu's (2001) scale.

7. Jourdan (2002): in pursuit of the measurement errors found in the additive approach seeks for improvement in reliability and validity of measurement by opting for a single sample to have better control of distortional factors. Despite exceptional efforts in improvement, this method is least actionable in managerial practice due to its inherent computational complexities and difficulty in experimentation.

8. Broyles et al. (2009): found inconsistency in the extant BE antecedents and consequences appearing in the literature. They attribute these differences to the lack of consideration to the potential role of moderating variables such as product category, culture, consumer segment, etc. (Broyles et al., 2009; 2010). Figure 2.5 presents the limitations of extant CBBE models.

9. Vazquez et al. (2002): take an ex-post utility approach to measure CBBE by splitting the associations into functional and symbolic utilities. They focused on four dimensions of utilities: product functional utility, product symbolic utility, brand name functional utility, and brand name symbolic utility. This study had following advantages over the preceding methods: (1) it highlights the sources of CBBE; (2) it is easier to administer as compared to the previous methods; (3) measure brand equity at individual level. However, the scale suffered from following problems: (1) it neglects the ex-ante brand utilities; (2) the scale

could not be generalized in a different cultural context, even when it was measured on same product category by Kocak et al. (2007); (3) the scale suffered in its external validity, especially with respect to cross culture, as a 16 item scale (similar but not identical) was supported in case of Kocak et al. (2007).

10. Ailawadi et al. (2003): measure CBBE through a revenue premium as 'the difference in revenue between a branded good and a corresponding private label' (p.3). The advantages of this approach are that it: (1) is based on actual market data and therefore the results are more workable in real settings; (2) is easier to calculate and administer. But this approach is limited to a very few products due to the following limitations: (1) price premium is a strategy in itself therefore it does apply to brands that focus on market share strategy; (2) it does not provide insight into the sources of brand equity; (3) it is difficult to find a generic product equivalent to the brand and data related to it.

11. Netemeyer et al. (2004): have seen customers' willingness to pay price premium as a mediating variable between 'core/primary' facets of BE and customer response. They consider perceived brand quality, perceived brand value for the cost and brand uniqueness as core/primary facets of CBBE in most BE models which are consistent with the Aaker's (1996) and Keller's (1993) conceptualization. They also mention five related brand associations, namely brand awareness, brand familiarity, brand popularity, organizational associations and brand image consistency assuming that these are not as predictive of brand response as the core/primary facets. Their results suggest that perceived value/perceived value for cost (discriminant validity not found between them) and uniqueness as direct antecedents of willingness to pay a price premium for a brand. The study scored following merits over previous studies: (1) validity test were based on sound procedures; (2) study covered a large number of sample of respondents examining 16 different brands in six categories. The study suffers from following limitations: (1) the study was based on convenience sample which may or may not be generalized; (2) the selection of product categories was based on fast moving consumer goods and frequently purchased nondurables, it may not hold valid in case of durables; (3) single item measures in study 1 may not be reliable in correlating these measures.

12. Pappu et al. (2005): scored merit over both Yoo and Donthu (2001) and Washburn and Plank (2002) in following ways: (1) re-evaluating the dimensions of the scale for including more discriminating indicators; (2) inclusion of brand personality and organizational

associations as a sub-dimension of brand associations; (3) avoiding usage of student samples. However, the study has following limitations: (1) using of a single measure of brand awareness limits its confirmatory factor analysis; (2) the study uses a dichotomous scale for measuring brand awareness which is another limitation for confirmatory factor analysis; (3) it uses only brand personality and organizational associations for measuring brand associations, thus, ignoring other associations related to attributes, attitudes, and benefits as mentioned by Keller (1993).

13. Shankar et al. (2008): in a similar model of CBBE that combines financial and consumer survey data identify two multiplicative components of BE as: (1) offering value--the net present value of a product carrying a brand name estimated with the help of financial outcomes like revenue forecasts and margin ratios; (2) relative brand importance--a measure that isolates the effect of brand image relative to the other factors of consumer utility that effects consumer choice (Shankar et al, 2008). The advantages of this measure are that it: (1) measures brand equity for multi-category brands; (2) follow a comprehensive approach to combine the financial and consumer data. However, it suffers from the following two drawbacks: (1) obtaining brand level financial data for rival brands is often difficult; (2) does not allow for individual level measures of brand equity.

Based on the critical review of major studies in the area of BE measurement (as discussed above), the following points could be concluded from the above discussions:

- Compared to the direct measures, the indirect measures of brand equity are much widely used and considered more holistic. It captures CBBE by measuring the manifested dimensions or using outcome variables (e.g. price premium). Important measures that falls in this category are: Lassar et al. (1990), Vazquez et al. (2002), Kocak et al. (2007), Yoo and Donthu (2001), van Riel et al. (2001), Brodie et al. (2006), Pappu et al. (2005), Buil et al. (2008), Keller (1993), Aaker (1991).

- Although Aaker (1991) and Keller (1993), among others, have laid the conceptual foundations of brand equity measures, but they never developed any scale for brand equity measurement. As a result, several dimensions have spawned in the different brand equity models. Table 2.6 presents a list of major CBBE dimensions.

- Inconsistency could be found with regard to the selection of BE antecedents and consequences in the extant models (see Figure 2.5). Broyles et al. (2009) suggested

that these differences could be attributed to the potential role of moderating variables such as product category, culture, market, etc. however, not many models of BE have considered the potential role of these moderating variables.

- Although brand loyalty is a major component of BE, but there is a lack of consensus with regard to it. Some scholars (e.g. Aaker, 1991; Pappu et al. 2005; Gladden and Funk, 2001; Bauer et al. 2008) consider it as a source of BE, while others consider it as a potential outcome (Keller, 1993).

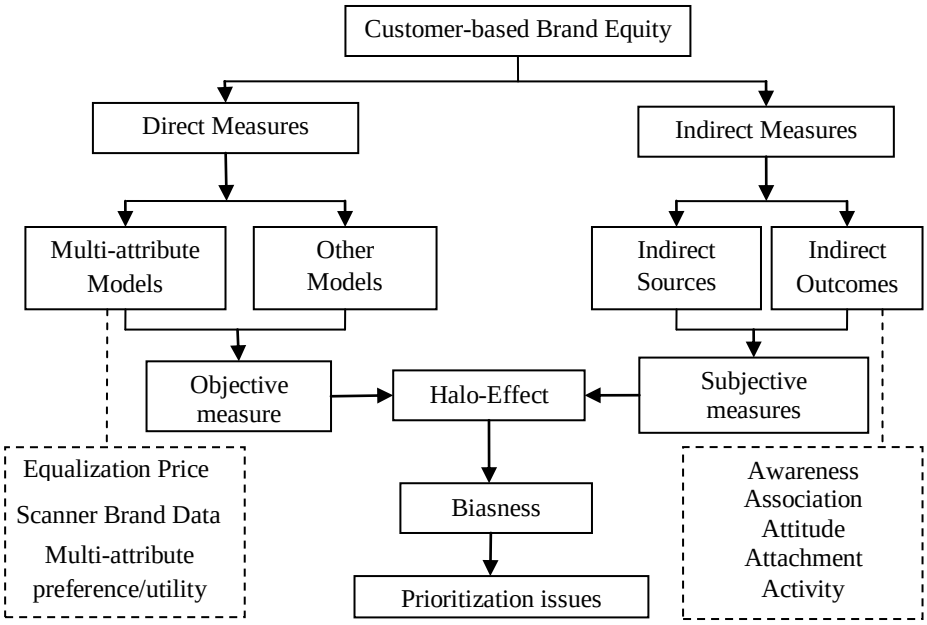

Figure 2.5. Limitations of CBBE Models

- In the last two decades, literature is largely dominated by studies which deal with the conceptualization and measurement of BE. In practice, BE poses a complex multi-criteria problem, which involves taking brand related decisions under conditions of vagueness and uncertainty (Hsu et al., 2012; Costa and Evangelista, 2008).

- In recent years there are a growing number of calls for relational brand value creation (Patterson and O'Malley, 2006). Such calls are based on strong theoretical and managerial arguments. Many scholars support the notion of CBR as a logical extension of brand personality (e.g. Aaker, 1996; Blackston, 2000; Prashar et al., 2013). They argue that the notion of brand personality and the anthropomorphization or the humanization of brands through advanced communication methods support the notion of CBR on the basis of interpersonal customer-brand interactions through the

social exchange theory (SET). However, the notion of relationship has not been so far highly acknowledged in brand equity studies.

- The critical review also suggest that there is a fixation/concentration in the non-financial measures of BE, as they are mainly based on Keller's (1993) and Aaker's (1991) conceptualization of BE.

Table 2.6. CBBE Dimensions

Author	Dimensions of CBBE
Keller (1993)	Brand Awareness, Brand Image
Aaker (1991)	Awareness, Perceived Quality, loyalty, Associations, Other Proprietary Assets
Lassar et al. (1995)	Performance, Social image, Value, Trustworthiness, Attachment
Yoo & Donthu (2001)	Brand Awareness/Associations, Perceived Quality, Brand Loyalty
Vazquez et al. (2002)	Product functional utility, Product symbolic utility, brand name functional utility, brand name symbolic utility
Washburn & Plank (2002)	Brand Awareness/Associations, Perceived Quality, Brand Loyalty
de Chernatony et al. (2004)	Brand loyalty, Satisfaction, Reputation
Netemeyer et al. (2004)	Perceived Quality, Perceived Value for the cost, Uniqueness, Willingness to pay a price premium
Pappu et al. (2005)	Brand Awareness, Brand Associations, Perceived Quality, Brand loyalty
Kocak et al. (2007)	Product functional utility, Product symbolic utility, brand name functional utility, brand name symbolic utility
Buil et al. (2008)	Brand Awareness, Perceived Quality, Brand loyalty, Brand Associations
Tong & Hawley (2009)	Perceived Quality, Awareness, Associations, loyalty, Overall Brand Equity
Wang et al. (2008)	Corporate Ability Association, Brand Awareness, Quality Perception, Brand Resonance
Chen & Tseng (2010)	Brand Awareness, Perceived Quality, Brand Image, Brand Loyalty
Atilgan et al. (2009)	Perceived Quality, Brand loyalty, Brand Associations, Brand Trust
Ha et al. (2010)	Brand Awareness, Perceived Quality, Brand Loyalty, Satisfaction
Jung & Sung (2008)	Perceived Quality, Brand Loyalty, Brand Awareness/Associations
Yu et al. (2008)	Attribute related associations, Non-attribute related associations, Brand Trust, Brand Affect, Brand Resonance, Overall brand equity
Kayaman & Arasli (2007)	Perceived Quality, Brand Loyalty, Brand Image, Brand Awareness
Kim et al. (2008)	Trust, Customer Satisfaction, Relationship Commitment, Brand Loyalty, Brand Awareness
Chebat et al. (2009)	Brand Awareness, Brand Image, Self congruity, Commitment, Brand Loyalty
Chattopadhyay et al. (2010)	Perceived Quality, Brand Awareness
Hedhli & Chebat (2009)	Brand Awareness, Brand image
Wang et al. (2011)	Brand Awareness, Perceived Quality, Brand Associations, Customer Loyalty
Rajasekar & Nalina (2008)	Performance, Social Image, Value, Trustworthiness, Attachment
Anselmsson et al. (2007)	Perceived Quality, Awareness, Loyalty, Associations, Uniqueness

2.4. TAXONOMICAL REVIEW OF LITERATURE

Although, a critical review of literature is very useful in understanding and arguing for hidden agendas, inaccuracies, obsolete ideas, and causation of something that happened much before the present day, it may not help in understanding the depth and breadth of literature. Therefore, a taxonomical review of BE was done to explore the genre, period, form, content and order of BE literature to understand the changes taking place in the phenomena of BE within the perspective of time, place, and context in which it is evolving. For the taxonomical review, data in the form of journal articles was collected for the period 1991 to 2012, using the following databases of online journals:

- Emerald full text
- Elsevier
- Taylor and Francis
- Sage Journals
- Palgrave Macmillan Journals
- EBSCOS Business Source Premier

It was noted that there is a huge volume of literature related to BE measurement that are published in academic journals, conference papers, master's and doctoral dissertations, text books, working papers and reports. But, for this taxonomical review journal publications were only used as: (1) all other information is either motivated from or disseminated through journals; (2) journals communicate the highest level of research (Nord and Nord, 1995 as cited in Ngai, 2005) and; (3) the quality of content may be easily evaluated. It may be also noted that to an extent the researcher has been judgmental in assessing the quality of content by including only those paper which were having citation reports, peer reviews, and impact factor. The articles were extracted from the online database using appropriate keyword descriptors, which highlight upon the measurement of CBBE. Based on the above mentioned criteria the full-text of all articles was carefully examined for the following contents: Details of the paper (Author-Journal-Year of publication); Type of application/ Country (sample drawn); Methodology and sample details; and Objective and Findings of each study. Since the information drawn from this could be very useful for the future researchers, the review tables were re-examined several times to ensure that the observations made on the basis of those articles are consistent with the theme of the study. Such rigorous cross-examination was the only viable option for assessing the reliability of information (Attanasopoulous, 2009). The following sections present the findings of the taxonomical review.

Table 2.7. Taxonomical Review of Brand Equity Literature

Author/ Year/ Journal/	Application Area/ Country	Instrument/ Statistical method/ Sample	Objective(s)	Findings		
				Dimensions	Factors	Consequences
Jara and Cliquet/ 2012/ JRCS	Retail/France	Questionnaire survey /PLS-SEM/504	Conceptualization and measurement of retail brand equity	Brand awareness and Brand image	Personality, image, service, perceived quality, physical appearance, store policy	Consumer's response
Golicic et al./ 2012/ JBL	Logistics/USA	Questionnaire survey /PLS-SEM/673	To examine market information and Brand equity through Resource-Advantage Theory: A carrier perspective	Brand awareness and Brand image		Brand equity
Eckert et al./2012/IJRM	Multiple/Australia	Discrete Choice Experiments /Econometrics	To examine brand effects on choice uncertanity	Consistency, credibility, investment, risk, quality, search/time cost		Consumer's choice
Kim et al./2012/JBR	Luxury Fashion brands/ Korea	Questionnaire survey /Descriptive statistics/114	To measure customer equity of luxury fashion brands	Attitude toward luxury brands	Materialism, experiential needs, fashion involvement	CLV, Brand equity, value equity, relationship equity
Moradi and Zarei/2012/APJML	Laptops and mobile phones/Iran	Questionnaire survey/SEM/700	To measure CBBE for young consumers	Brand loyalty, perceived quality, brand Awareness/associations		Overall brand equity
Johansson et al./2012/IJRM	Multiple brands/USA	Panel data/Econometrics/50	BE performance of global brands in the 2008 financial crisis	Share prices volatility		BE index

2.5. TAXONOMICAL REVIEW RESULTS

Based on the summary of articles that were reviewed (a snapshot of which is presented in Table 2.7 and the remaining table is given in Appendix-II) the classification of those articles was done on the basis of article type, publication, application area, journals targeted, use of data collection and sampling methods, statistical tools used and selection of measurement variables. The results of these analyses are shown in the subsequent sections of this chapter.

2.5.1. Period-wise Distribution of Articles in terms of Publication Type

The periodic distributions of articles based on their typology are presented in Figure 2.6. The complete time span of publication between1991-2012 has been divided into three temporal phases:

Phase 1: 1991-1997 (7 Years)

Phase 2: 1998-2004 (7 Years)

Phase 3: 2005-2012 (8 Years)

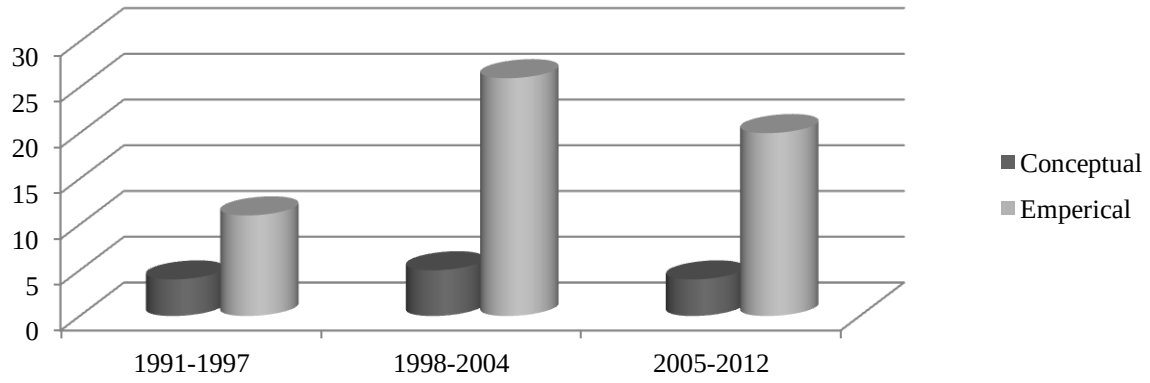

Figure 2.6. Distribution of Articles by Type and Period of Publication

The result of period–wise distributions of article based on their typology suggest that there are a significant number of articles published during the three time periods. However, the trend suggests that the majority of empirical articles were published during the period: 1998-2004. Since the focus of the review was on BE measurement, the majority of articles during the three periods were empirical in nature, which reveals that this area is abundantly rich in terms of empirical literature.

2.5.2. Period-wise Distribution of Articles in terms of Application Area

The periodic distribution of articles in terms of the application area is shown in Table 2.8. The analysis reveals that the majority of articles that were published during the three periods were either exclusively for goods brands (61 per cent), or in the context where both goods

and service (29 percent) brands were taken. This suggests that there are less number of articles that are exclusively dedicated to the measurement of BE in services. In terms of industry application, most BE measures in services are applied in hotels and restaurants, retail, and tourism industry. This suggests that there are other service categories that need to be explored. For example, only two articles were found in the case of hospital industry. Since, a large part of global economy depends on the growth of service sector, future researchers have the burden of exploring BE in those services.

Table 2.8. Distributions of Articles based on Application Area

Sector	1991-1997`	1998-2004	2005-2012	Total	Contribution (%)
Major Services Categories					
Airline services	--	1	--	1	1.43
Tourism	--	2	1	3	4.29
Banking & Credit Card	1	--	--	1	1.43
Online services	--	--	1	1	1.43
Healthcare	--	--	2	2	2.86
Retail	--	1	1	2	2.86
Insurance	--	1	--	1	1.43
Telecommunications	--	1	1	2	2.86
Hotels & Restaurants	--	2	2	4	5.72
Major Goods Categories					
FMCG	3	4	2	9	12.86
Automobiles		2	1	3	4.29
Electronic goods	2	4	1	7	10.0
Household goods	1	1	--	2	2.86
Food items	2	--	1	3	4.29
Clothing	1	1	--	2	2.86
Luxury Goods	--	--	1	1	1.43
Baby Food	--	--	1	1	1.43
Multiple Services	--	--	1	1	1.43
Multiple Goods	1	3	1	5	7.14
Goods and Services	4	9	6	19	28.57
Total	15	32	23	70	100

2.5.3. Distribution of Articles in terms of Journals Targeted

The journal-wise distribution of articles reveals that BE researches have been published in a large array of journals. But out of the total number of articles analyzed, only six journals

have published more than three articles between the years 1991 to 2012. The major outlets for BE measurement researches are: Journal of Product & Brand Management, Brand Management, Journal of Consumer Research, Journal of Business Research, Journal of Marketing, Journal of Advertising Research, and Journal of Academy of Marketing Science. Table 2.9 presents the number of articles published in major journals.

Table 2.9. Distribution of Articles by Journal

Journal Name	No. of Articles
Australasian Marketing Journal (AMJ)	2
Advances in Consumer Research (ACR)	3
Brand Management	5
European Journal of Marketing	2
International Journal of Market Research	2
International Journal of Research in Marketing	2
International Journal of Hospitality Management (IJHM)	2
Journal of Advertising Research	3
Journal of Business Research (JBR)	6
Journal of Consumer Psychology	2
Journal of Consumer Research (JCR)	3
Journal of Marketing	4
Journal of Marketing Management	4
Journal of Marketing Research	2
Journal of Product & Brand Management	8
Journal of Services Marketing	2
Journal of the Academy of Marketing Science	3

2.5.4. Period-wise Distribution of Articles in terms of Country Context

Table 2.10 reveals the period-wise publication of articles in the different country context. The table suggests that BE measurement researches are highly skewed toward developed market experience, with the majority of articles published being published in the context of USA, UK and Australia. This also suggests there is ample need and scope of BE measurement in the context of emerging economies like India. Since developing markets are quite different than the developed ones, particularly in terms of economic and social considerations that lead to consumer cognition, affect and behavior, the drives of BE in these market are likely to be different than those from the developed markets.

Table 2.10. Country and Period-wise Distribution of Articles

Country	1991-1997	1998-2004	2005-2012	Total
Australia	1	1	1	3
Canada	--	1	1	2
China	1	4	1	6
Finland	--	1	--	1
France	--	1	1	2
Germany	--	1	--	1
Ireland	--	1	--	1
India	--	--	1	1
Iran	--	--	1	1
Japan	--	1	--	1
Malaysia	--	1	1	2
South Korea	1	1	1	3
Spain	--	1	--	1
Taiwan	--	2	1	3
Thailand	--	--	1	1
UK	3	4	1	8
USA	6	9	7	22
Others	3	3	4	10
Total	**15**	**32**	**23**	**70**

2.5.5. Distribution of Articles in terms of Data Collection and Sampling Techniques

The period-wise distribution of articles in terms of data collection methods as shown in Table 2.11 suggests that the primary method of data collection for BE measures is through a questionnaire-based survey and some kind of market data (store level and panel data). Qualitative interviews are least popular in case of BE measurements. This suggests that the future researchers can use either of these methods for CBBE measurement.

Table 2.11. Period-wise Distribution of Articles by Data Collection Method

Data Collection Method	1991-1997`	1998-2004	2005-2012	Total	Contribution (%)
Questionnaire Survey	3	20	18	41	58.57
Qualitative Interview	4	4	3	11	15.71
Store-level data	5	3	1	09	12.86
Panel Data	3	5	2	10	14.29
Total Studies	15	32	24	70	100.00

However, there are only few studies which have mentioned the applied sampling techniques and sample size in their respective study. Out of those who have discussed, the Convenience Sampling method was found to be the most widely used method in comparison to the other sampling methods for sampling of respondents, while the sample description greatly vary in the case of BE measurements. Hence, the results of this section underline that questionnaire-based survey method and convenience sampling technique are the most applicable methods of BE measurement, as reported in the earlier studies.

2.5.6. Period-wise Distribution of Articles in terms of Statistical Method

The distributions of articles in terms of statistical method applied are depicted in Table 2.12. The results of this table suggests that the multivariate techniques, including SEM, is most widely applied in the case of scale development and modeling of BE.

Table 2.12. Period-wise Distribution of Articles by Statistical Method

Statistical Method	1991-1997	1998-2004	2005-2012	Total	Contribution (%)*
Univariate Techniques	4	5	--	9	15.25
Multivariate Techniques	1	6	3	10	16.95
Structural Equation Modeling	--	12	15	27	45.76
Econometric Modelling	4	2	1	7	11.86
Discrete Analysis	--	2	1	3	5.08
Conjoint Analysis	2	1	--	3	5.08
Total	11	28	20	59	100.00

*Percentage contribution is percentage of studies using the particular statistical method

2.5.7. CBBE Measurement Variables

In order to identify the measurement variables, i.e. the BE dimensions, its antecedents, and the overall consequences, the summary of articles was reviewed to extract the variables. The BE models in the extant studies consists of various manifested dimensions of BE that relate the brand equity sources and outcomes. Based on the above mentioned data, variable were identified and categorized as mentioned in Table 2.13. The result of above analysis was classified as the three aspects of overall brand equity (OBE): Knowledge Equity (KE), Attitudinal Equity (AE) and Relationship Equity (RE). Table 2.12 presents the identified measurement variables with regard to the above mentioned BE dimensions. Besides, OBE

dimensions, brand perception, intention to purchase and behavioral loyalty were identified as the three key behavioral brand equity outcomes.

Table 2.13. Dimensions of Customer-based Brand Equity

CBBE Dimensions	Its Antecedents	Overall Brand Equity
Brand Awareness	Brand Recognition; Brand Recall; Top-of-mind brand awareness(TOMBA); Brand Familiarity	• **Knowledge Equity** (Brand Awareness and Brand Familiarity) • **Attitudinal Equity** (Perceived Quality, Perceived Value and other related associations) • **Relationship Equity** (Attitudinal Loyalty, Trust, Satisfaction).
Brand Associations/ Brand Image	--Attribute association; Non attribute association; --Functional and symbolic associations --Favourability, Strength and Uniqueness of associations	

2.6. GAPS IDENTIFIED IN THE LITERATURE

Based on summary of articles that were reviewed (presented in Appendix-II), 70 articles were selected for review analysis (as illustrated in Table 2.7 below). The tabular analyses of those articles led to the identification of several research gaps that were underscored and assessed in several ways. These gaps highlight on the scope of future research in the field of CBBE measurement, particularly in the context of service brands in the emerging markets. Table 2.14 presents a summary of those articles based on which the research gaps were identified, which further that led to the problem formulation and conceptual development.

Table 2.14. Gaps Identified from Existing Literature

Reference(s)	Objective of the Study	Methodology/ Approach	Gaps Identified/Comments
Hsu et al. (2011)	To develop an analytical model for building brand equity in hospitality firms	Questionnaire-based survey Consistent Fuzzy Relations and QFD Approach	--Need for BE measures in services --Linking BE measures with firm strategy --Standardized estimation of BE dimensions
Christodoulides and deChernatony (2010)	To review the approaches of CBBE conceptualization and measurement.	A critical review of the literature of customer-based brand equity has been presented.	--Inconsistency and inconclusiveness present in the extant CBBE measurement --Application of BE measures in different sectors, culture, market, etc. --Inconsistency with regard to selection of BE dimensions
Boo et al. (2009)	Application of brand equity in services	Questionnaire-based Survey SEM for examining alternative CBBE models	Highlight on the need to improve upon the dimensions for measuring BE in services
Kartono and Rao (2008)	Identification of different measures of brand equity	Critical review of BE Literature to explore the various approaches and methods of measuring BE in different sectors	--Stress upon the need for diversification of BE measures in different sectors. --Need for holistic measures of BE
Rajasekar and Nalina (2008)	Measurement of Brand Equity in consumer durables	Questionnaire-based survey EFA and CFA	--Identification of BE dimensions for consumer durables brands in the context of emerging markets --Stressed on the need to have more number of consumer attitude and behavior studies in the context of emerging economies like India
Kim et al. (2008)	Measurement of brand equity in hospital industry	Questionnaire-based Survey SEM for examining CBBE model	--Identification of BE dimensions in hospital industry --Need to verify brand image as an outcome of brand equity in hospital brand equity context.
Tolba and Hassan (2008)	Measurement of customer-based brand equity	Questionnaire-based Survey SEM for examining CBBE model	--Need for integration of various BE measures
Patterson and O'Malley (2006)	Review of customer-brand relationship approaches	Review of Literature	Need to measure the relational outcomes of brand equity

2.7. PROPOSED RESEARCH FRAMEWORK

On the basis of the identified CBBE dimensions, its antecedents and overall outcomes of CBBE mentioned in the previous section, a tentative conceptual framework has been proposed for future research (see Figure 2.7). In this proposed research framework, CBBE emerges from the customers' brand knowledge, which has been further sub-divided into brand awareness and brand image. Further, the overall outcomes of CBBE have been classified as Knowledge Equity (KE), Attitudinal Equity (AE) and Relationship Equity (RE).

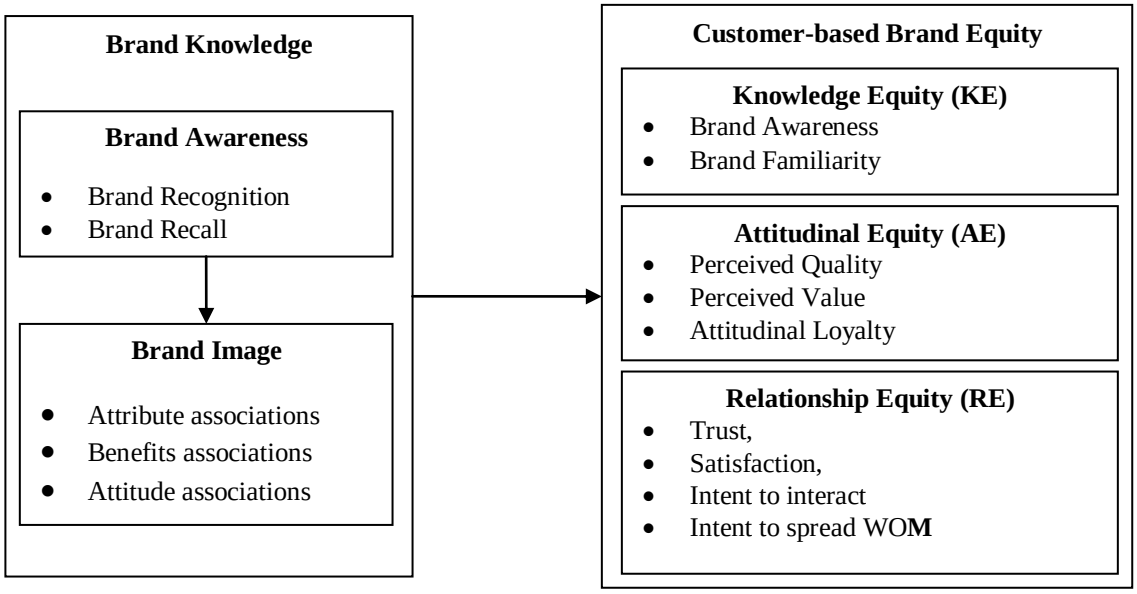

Figure 2.7. Proposed Conceptual Framework

2.8. REVIEW OF CBBE MEASUREMENT METHODOLOGIES

The current literature suggests the application of various direct and indirect methods of CBBE measurement. On the basis of their importance and prevalence, the extant CBBE measurement methods have been reviewed, and some probable methods have been identified and discussed with regard to its applicability in the context of proposed study. This exercise was particularly important in order to have an initial idea about the methods which can be applied for CBBE measurement. In terms of research design, the review of studies (see Table 2.7) suggests that a large number of CBBE measurement studies have applied questionnaire-based survey and primary as well as secondary market data for modeling. Most studies that have undertaken scale development and modeling as their primary objective, apply structural equations modeling, a multivariate technique for exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). Since the aim of the present study is to develop an indirect measure of CBBE, the review of methodologies in Table 2.15

is mainly focused to that end, i.e. scale development and modeling of indirect measures of CBBE.

Table 2.15. Review of Methodology as Reported in the Literature

Items	Reference(s)
Research Design	
Suvey-based	Kamakura & Russell (1993); Shankar et al. (2008); Lassar et al. (1990), Vazquez et al. (2002), Kocak et al. (2007), Yoo and Donthu (2001), van Riel et al. (2001), Brodie et al. (2006), Pappu et al. (2005), Buil et al. (2008), Rajh (2002); Christodoulides et al. (2006); Boo et al. (2009), Davis et al. (2009), Rajasekar and Nalina (2008)
Case study	Rahman (2010)
Psychological Experiments	Krishnan (1996)
Conjoint analysis	Jourdan (2002) ; Swait et al., (1993); Park and Srinivasan (1994); Srinivasan (1979)
Data Collection Method	
Interview	De-Chernatony et al. (2004)
Questionnaire-based Method	Broyles et al. (2009); Lassar et al. (1990), Vazquez et al. (2002), Kocak et al. (2007), Yoo and Donthu (2001), van Riel et al. (2001), Brodie et al. (2006), Pappu et al. (2005), Buil et al. (2008)
Primary Market Data	Swait et al., (1993); Kamakura & Russell (1993); Shankar et al. (2008); Ailawadi et al. (2003)
Secondary Data	Shankar et al. (2008)
Using projective techniques	Krishnan (1996); Gladden and Milne (1999); Low and Lamb, (2000)
Scale Development	
Univariate Tests	Jung & Sung (2008)
Multivariate Tests	Rajasekar and Nalina (2008);
Modelling Techniques	
Econometric	Swait et al., (1993); Kamakura & Russell (1993); Rangaswamy et al. (1993); Leuthesser et al. (1995)
SEM	Lassar et al. (1990), Vazquez et al. (2002), Kocak et al. (2007), Yoo and Donthu (2001), van Riel et al. (2001), Brodie et al. (2006), Pappu et al. (2005), Buil et al. (2008); Boo et al. (2009), Davis et al. (2009), Rajasekar and Nalina (2008)

Factor analysis is an oldest and excellent statistical approach for investigating interrelationships between the observed and latent sets of variables, which is primarily used for data reduction and summarization of measurement items. It examines the covariance among an observed set of variables, which is derived from latent constructs. In scale development, Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) are done. Exploratory factor analysis (EFA) is used to determine the links between latent

variables and observed variables. Thus, it tells about the set of observed variables that are part of an underlying construct. Principal Component Analysis is the most commonly used method for extracting EFA (Costello and Osborne, 2005; Prasad *et al.*, 2010). The general software packages used for EFA are SPSS, SAS and Stata. Further, Confirmatory Factor Analysis (CFA) is a multivariate technique applied to understand the structure of latent constructs, which helps in testifying knowledge based on some theory or hypothesized relations (Byrne, 2010). The software programs which can be applied for CFA are LISREL, EQS, SAS, AMOS and Mplus.

CFA is a special case of Structural Equation Modelng (SEM), which is also known as linear structural relationship model (Joreskog and Sorbom, 2004) or covariance structure (McDonald, 1978). SEM is a technique applied for testing a cause-effect relationship. It uses statistical data and theoretical assumptions for hypothesis-testing. SEM comprises of a measurement model (CFA) and a structural model (SEM).

2.9. CONCLUSION

Technically, a literature review is supposed to deal with the collection of relevant material, descriptive (structural) analysis, category selection and material evaluation (Mayring, 2003). For this purpose, researchers are responsible for the systematic identification, examination and expression of existing body of knowledge regarding a domain, but it is not practically possible to review everything. Therefore, apart from critical review of themes, a taxonomical approach of literature review was undertaken for this study, in order to understand the depth and breadth available resources, gather information regarding theories, and methods to get acquainted with the nature of the topic and how it is to being investigated in relation to the topic being proposed (Hart, 1998).

Today brands symbolize globalization not only through their global outreach, but also through their convergence with consumers' self identity, lifestyle, culture and consumption in almost every part of the world. Branding propelled in the late 1980s, mainly due to improvements in mass communication and transportation, the alarming growth of brands is a timely warning to big brand owners that in their conduct of affairs they need to be more social. The value of brands is widely recognized, not only by the brand owners but among all stakeholders, and thus, a brand has a large base that can affect its overall performance. Therefore periodic assessment of customer-based brand equity will help to understand how effective their brand investments are in steering the desired benefits for their stakeholders.

This requires the assessment of sources or outcomes of customer-based brand value, whether in financial or non-financial terms, in order to exercise a brand governance model of control. Brands are strategic resources, intangible assets and an important means of achieving competitive advantage as well as profits (Costa and Evangelista, 2008; Sveiby, 1997; Lev, 2001; Aaker, 1996; Keller, 2003; Kapferer, 2004). Established brands enhance a firm's ability to compete in the market as well as earn profits (Urde, 1994; Wing and Merrilees, 2005, 2007). Brands provide value and market strength beyond what can be provided by the product alone. Therefore, brand-based marketing is seen much more advantageous for achieving long term benefits than the general company-based marketing activities.

Generally, brand equity measurement tools are often specific to firms and integrated into the brand orientation by introducing new models and metrics on continuous basis to prioritize the factor influencing brand value in a particular market, culture and time. Therefore, depending on the nature of firm, brand, market and measurement approach, metrics have to be designed to suit different objectives, products, time, and market condition (Kartono and Rao, 2008; Garg et al., 2010, 2011a, 2011b, 2012). Therefore, it makes sense to have different measures and metrics for different occasion. To date, brand equity has been abundantly studied but there is lack of brand equity research in the context of emerging markets and service orientation. Therefore it goes without saying that research is needed in these contexts.

Among major studies for measuring brand value, unfortunately there is little agreement with regard to the connotations and structures of models (Rust et al. 2004; de Chernatony et al., 1998). The dimensions of brand equity lack standardization (Burmann et al. 2009; de Chernatony and McDonald, 2003), which is probably due to the degree of subjectivity involved in the choice of factors (Zimmerman et al. 2001). Therefore, it is necessary to develop a less arbitrary method of measuring BE. Further, despite significant advances made with regard to the application of non-financial measures of BE, very few organizations have been able to actualize on them. Therefore, there is inherent controversy with regard to the non-financial measures and consequently most managers consider brand's financial valuation (firm-based measures) as much direct and simpler than the appropriateness and priority of non-financial measures. Therefore, research is needed to measure the impact of marketing mix on specific non-financial brand equity dimensions (Na et al. 1999; Yoo et al. 2000; Moorthy and Zhao, 2000; Kumar and Rahman, 2010).

The present chapter has provided a review of important studies related to customer-based brand equity conceptualization and measurement. In the beginning, it presented the evolution of brand equity concept, which was followed by the conceptualization and definitions of brand equity, and the various approaches of BE measurement. The available literature has been classified into different categories (themes), such as type and period of publication, application area, journals, data collection and sampling technique, statistical method, and the dimensions and outcomes of CBBE, in order to understand the depth and breadth of BE literature. The literature review has helped in problem identification, development of conceptual framework, and identification of important variables and methods in consideration with the proposed study.

Chapter 3

OVERVIEW OF HOSPITAL INDUSTRY

The present chapter is based on the application of inductive logic to explore how the problem statement in question is embedded in practice, and to explore the probable reasons for pursuing this research from an applications point-of-view. This chapter provides an overview of hospital industry, with a particular reference to the Indian healthcare markets. It highlights on the evolution of Indian healthcare industry, and describes the hospital industry structure, characteristics, key player profiles, and the need and scope of customer-based hospital brand equity (HBE) measurement.

3. INTRODUCTION

Healthcare services have assumed a very critical role in maintaining the growth and prosperity of an economy, as they are highly responsible for maintaining a low burden of diseases and mortality rate, and enhance the well-being of individuals and society at large. However, almost all healthcare systems in the world are overburdened and have to operate in a complex environment, particularly with regard to increasing consumer access, affordability and regulation of service quality provided in private hospitals (Glouberman, 2002). Since the state has the moral responsibility of looking after the wellbeing of citizens, the structure and systems of healthcare in a state is highly regulated by a variety of internal and external factors, such as economic and demographic trends, public and private healthcare purchasing behaviour, hospital characteristics and their market strategy (generally based on number and type of competitors), payment methods, available medical technology, and supply of healthcare related labour (Luke et al., 1999; Rahman and Kumar, 2011).

Marketing of healthcare services poses a unique set of challenges for the marketers, particularly due to its inherent complexity **(**Corbin et al., 2001; Hersteins Gamliel, 2006**).** Apart from business consideration, the provision of healthcare services is seen with high morality, and therefore, it suffers limitations with regard to the usage of normal modes of 'creating, communicating and delivering' customer value. In recent years, the traditional modes of healthcare consumption have significantly changed, particularly due to indefatigable medical innovation and growth of cheaper medical treatment options through medical tourism **(**Hernberg-stanl et al., 2001**)**. The unavailability of proper health infrastructure in many underdeveloped nations **(**Andaleeb, 2001**)**, and the overburdening of

healthcare systems in developed countries has provided high prospects for the provision of healthcare services in the global market.

Review of healthcare related literature suggests that there is immense leveraging potential for major healthcare brands in India. But, not many publications are dedicated to the study of consumer attitudes and perceptions of healthcare seekers in India, particularly in the hospital brand equity measurement domain. Therefore, after deducting various research gaps from the review of literature in Chapter two, the present study applies an inductive logic to explore research gaps in the applications of BE theories and methods in the context of hospital brands in general and with a particular reference to India. In order to fulfil the above motive of this study, an overview of hospital industry has been done in this chapter to understand the need and scope of customer-based hospital BE measurement. The subsequent sections of this chapter present the overview of global and Indian hospital industry, and the literature review of studies with regard to CBBE measurement of hospital brands. The scheme of the present chapter is presented in Figure 3.1.

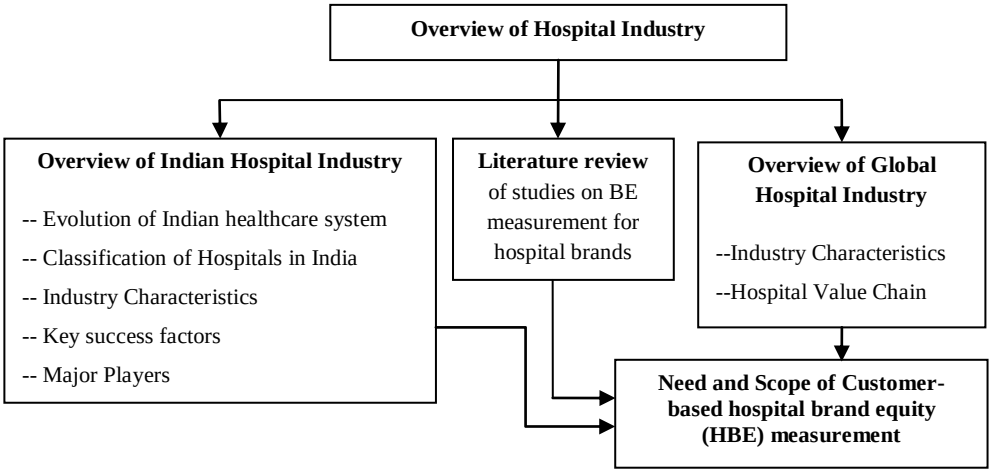

Figure 3.1. Overview of Hospital Industry

3.1. OVERVIEW OF GOBAL HOSPITAL INDUSTRY

Understanding global healthcare systems is very difficult due to increasing variability in their structure, processes, and outcomes. However, for simplification reasons the global healthcare systems can be categorized on the basis of ownership of hospitals—fully owned by public sector, partially owned by public sector, and mixed---co-existence of both public and private sector. The healthcare systems and policy in a country determine the strategies of hospitals in that country, in turn the hospital strategies also impact the policies related to cost, quality and access to healthcare services in that country. So, both strategies actually complement each other. The following sections highlight some of the key characteristics.

3.1.1. Industry Characteristics

1. Hospital industry all over the world is highly capital and skill intensive, requiring large budget and skilled manpower to handle the fast pace of medical innovation (Siddique and Kleiner, 1998).

2. Hospital market is highly concentrated and price always remains relatively more important for market competition **(**Garnick, et al., 1987**)**. However, hospitals compete on the basis of both price and non-price dimensions (services, infrastructure, amenities, perceived quality, etc.). While, most hospitals all over the world compete in terms of price through their "wholesale" strategies---by designing and providing services for organizations that contract for large number of their employees, members, etc. While they also compete on various non-price dimensions and retail strategies like service mimicking, attracting through star doctors, latest medical equipments and technology, etc.

3. Quality is a crucial factor in healthcare services delivery, which can strengthen hospital brand image and loyalty by generating community confidence in a hospital (Walter and Jones, 2001). Although, hospitals compete on the basis of quality certifications and accreditations, but those ratings and rankings do not relate to the customers' expectation.

4. A hospital typically earns revenue from its inpatient department (IPD) and outpatient department (OPD). Within these departments, revenue is mainly generated from ICUs, operation theatres, consultancy, diagnostic/pathology laboratories and pharmacy centers. In these departments, patient admissions within IPD and surgical procedure generate the bulk of the operating revenue growth.

5. Large hospitals have a wider scope of leveraging their brand potential by providing integrated healthcare services in the global healthcare market (Tsiknakis et al., 2000**)**. For example through their operating chain of hospitals, companies can also have presence in diagnostic services, pathology, pharmacy retail, and hospital consulting services.

6. By developing brand equity corporate hospitals can seek better revenue from medical tourism and establishment of satellite hospitals in neighbouring countries.

3.1.2. Hospital Value Chain

A hospital value chain consists of four aspects: provision of curative healthcare services, provision of preventive healthcare services, service to care providers and healthcare related manufacturing. The further sub-components of the system are mentioned in Figure 3.2. The framework in Figure 3.2 describe the flow of man and material as well as the parties involved in providing preventive and curative healthcare services to the patients. In recent years, many healthcare providers have exercised their brand‘s leveraging potential along the value chain and re-established themselves as an integrated healthcare services provider. Therefore, branding along the value network of a hospital is highly beneficial for healthcare firms, mainly from the point-of-view of brand extension, generating more revenue and sustaining market competition. In this regard, the Apollo Healthcare Ltd. presents a very good example, whose market presence in almost sectors along the value chain has made it the market leader in Indian healthcare (CRISIL Research, 2011).

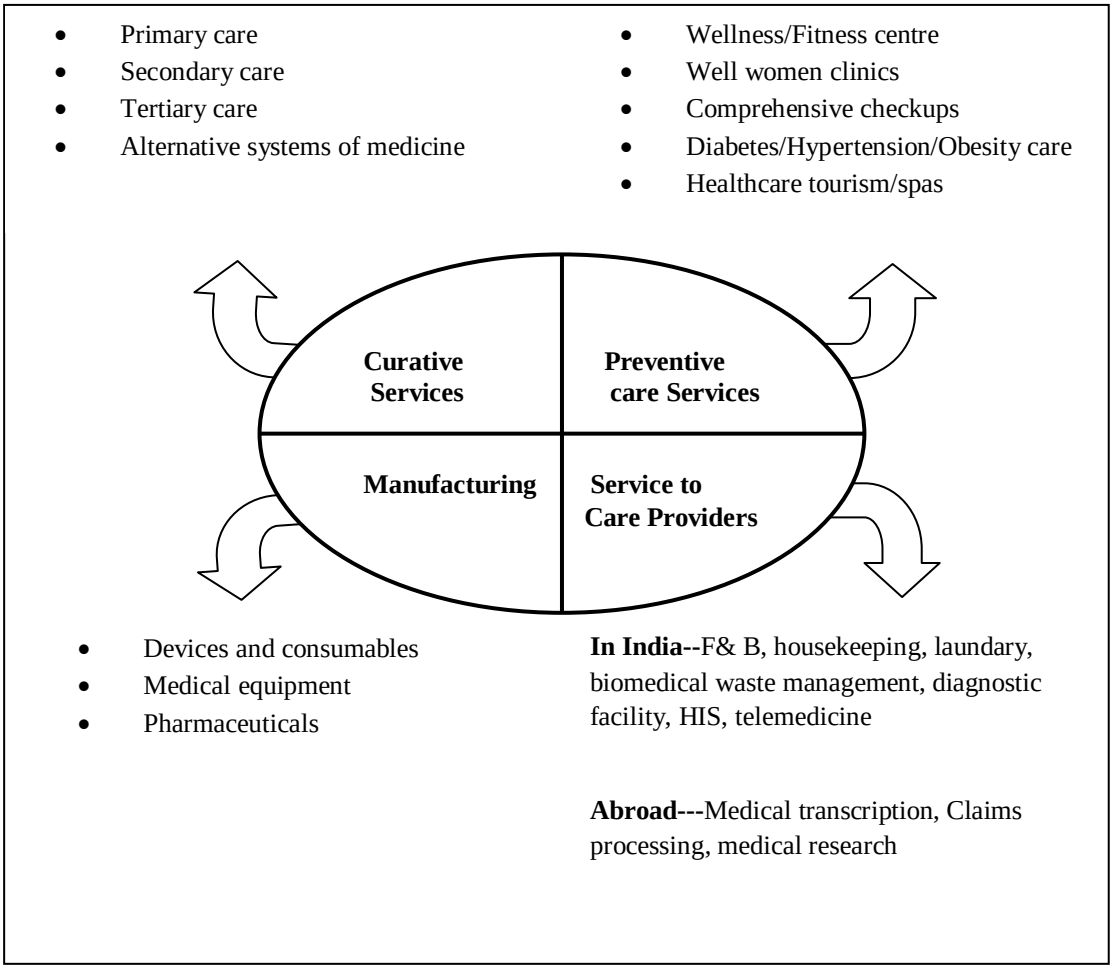

Figure 3.2. Hospitals—Value Chain (Source: CRISIL Research, 2009)

3.2. REVIEW OF STUDIES ON BE MESUREMENT

The branding of hospitals poses a unique set of challenges to the healthcare marketers because hospital services are high on intangibility, credence attributes, perceived risk and they have to operate under intense regulatory mechanisms and public scrutiny (Kotler and Clarke, 1987; Garg et al., 2011c). Consumers cannot assess the performance of healthcare services providers (Moorthi, 2002). Therefore, branding as a basis of competition is still relatively new to the hospital industry (Mangini, 2002). As a result, the issue of brand building or brand equity measurement of healthcare services/goods providers is still in its nascent stages, i.e. under-researched or unexplored, although BE as a domain of marketing is highly important and one of the widely used concepts in practice and academic research (Kim et al., 2008). Therefore, there is a paucity of work on hospital BE measurement as well (Kim et al., 2008). Blackston (1992) found trust and satisfaction with hospital as the two primary dimensions of BE in healthcare. Kim et al. (2008) empirically found that brand awareness and brand loyalty are the primary sources of BE in Korean hospitals. Chahal and Bala (2008) found brand awareness, brand association and brand loyalty as the key dimensions of BE in the Indian markets. Despite sporadic efforts made by the above mentioned authors, these studies lack a comprehensive outlook, as antecedents of BE are not well explored in these studies.

Sheth (2011) states that emerging markets like India are mainly characterized by five market characteristics–heterogeneity in structure, high socio-political governance, unequal competition, inadequate infrastructure, and chronic shortage of resources. These characteristics are quite different from those prevalent in the developed markets. The Indian hospital industry is also characterized by some of these market characteristics. But, with the changing healthcare market scenario in terms of increasing health consciousness, high income and out-of-pocket health expenditure, changing demographic patterns and increasing insurance coverage, hospital industry in India presents a golden opportunity for hospital branding due to high-growth potential in the domestic market and global medical tourism (CRISIL Research, 2011; IBEF, 2010). The Indian healthcare industry stands tall as one of the largest service sectors in India (India Brand Equity Foundation (IBEF), 2010), which accounted for 4.2 percent of India's nominal GDP in 2011. Although the global median of healthcare spending was 6.5 percent of nominal GDP (WHO Statistics, 2011 as reported in CRISIL Research, 2011), the healthcare spending in India (in terms of GDP percentage) is far lower than those of the developed countries (WHO Statistics, 2011 as reported in CRISIL

Research, 2011). The expected compounded annual growth rate (CAGR) of Indian healthcare industry during 2010-2011 to 2015-2016 is expected to grow at an annual rate of 12 percent (CRISIL Research, 2011). Therefore, hospital industry in India presents a fertile ground for the growth of private hospitals (private players account for 68 percent of healthcare spending; CRISIL Research, 2011) as it is expected that by 2025, Indian hospital market will require another 1.75 million hospital beds with a US$86 billion investment (IBEF, 2010). This presents a huge potential for new as well as existing players to build new hospitals.

3.3. OVERVIEW OF INDIAN HOSPITAL INDUSTRY

Healthcare services are very critical to the Indian economy, as it contributes significantly to the social and economic well-being of the country. Broadly, healthcare services in India are provided by two sectors: public sector and private sector. Although, the governments at all levels have to share the responsibility of providing healthcare services, yet the public sector in India is highly under-funded and far below the global benchmark of investment to meet the current health requirement of the huge population of the country. Besides, it also faces problems in terms of overly centralized planning, high political interference, inflexibility and bureaucratic roadblocks that affects public healthcare management and funding in different states. The public healthcare sector in India is faces acute crisis of funds for the purchase and maintenance of equipment, supply of consumables, and necessary infrastructure for meeting the growing healthcare demands of Indian masses. As a result, their preference for private hospitals is ever increasing despite higher cost of treatment in private hospitals.

The private sector accounts for about 80 per cent of total healthcare expenditure in India, which is the highest proportion of private healthcare spending in the world. This sector has grown astonishingly in the past 15 years, making India one of the largest private healthcare sectors in the world. The private sector in India comprises of assorted players such as not-for-profit, voluntary, for profit, corporate, trusts, stand-alone specialist services, diagnostic laboratories and pharmacy shops. CRISIL Research estimates that the private health sector accounts for 50-55 per cent of inpatient care and 70-75 per cent of outpatient care. In 2005, private expenditure on health, as a per cent of total expenditure on health, was estimated at around 81 per cent, which is over 4 times the public spending. As a result, India's overall expenditure on health in 2005 was 5.0 per cent of GDP (CRISIL Research, 2011).The healthcare industry in general consists of hospitals, pharmaceuticals, diagnostic centers and

ancillary services such as health insurance and medical equipment. The first two segments, of this in India, account for nearly 75 per cent of the total healthcare market.

3.3.1. Evolution of Indian Healthcare System

The health system in India consists of the public sector, the private sector and an informal network of providers operating in an unregulated healthcare environment. Depending on the government's attitude towards the healthcare sector, the evolution of health system in India can be broadly categorised in three distinct phases:

Phase 1 (1947-83): In this phase, the health policy of India was designed on the basis of two principles: (1) No one should be denied of health care due to lack of ability to pay, and (2) state will take the responsibility of providing healthcare services to its people. After independence, the state of healthcare in India was mainly disturbed due to diseases like malaria and weak healthcare infrastructure. The public sector comprised a few city hospitals, and the private sector consisted largely of individual practitioners. This period earmarked the setting up of hospitals like the All India Institute of Medical Sciences (AIIMS) for research and training. In the post-colonial phase, "rebuilding" was the only keyword. So, the government of India urged to develop a healthcare system which would be at par with the norms of modern medicine but they failed to tap the goodness of traditionally used and accepted modes of Indian medical treatment and relied excessively on allopath, which gave birth to a urban-based costly western system of medicine in India.

Phase 2 (1983-2000): This phase marked the formulation of India's first National Health Policy in 1983. This policy stated the need to promote private healthcare service delivery, and increase government focus on primary healthcare. This phase led to the formulation of the National Health Policy 1983 to control population, increase access to basic health facilities in rural areas, and fulfil international commitment towards primary healthcare. As the resources available for rolling out this policy were limited, the funding from private sectors was encouraged. Five significant omissions that occurred during this period were as follows: (1) encouragement to private sector with minimum regulation; (2) policies and plans were made in absence of any accurate picture of changing disease profile, prevalence and incidence; (3) constitutional amendments regarding decentralisation of healthcare did not bring any major success in increasing the accountability of local bodies; (4) neglect in R&D activities to uphold technological innovation; (5) government instead of acting as guardian involved itself as an actor in implementing public health programmes.

Phase 3 (post 2000): This period witnessed events that were designed to meet the following three objectives:

- Utilization of private sector for addressing public healthcare goals.
- Increasing avenues for health financing through liberalization of insurance sector.
- Changing role of state from a provider to both provider and financer of health services.

In order to achieve the above three objectives, the National Health Policy (NHP) 2002 and the Pradhan Mantri Swasthya Suraksha Yojana (PMSSY) 2006 were been laid down. While NHP 2002 focused on fund enhancement and organisational restructuring to achieve a more equitable access to healthcare facilities, the PMSSY 2006 aimed at correcting the imbalances with regard to availability of affordable tertiary healthcare services, and quality medical education in the deficient states. The major initiatives of NHP 2002 were: (1) focus on critical diseases, achieving acceptable standards of healthcare, access to decentralised public health system, enhance public healthcare investment, development of modern and scientific health statistics database and national health accounts, involvement of local self-government institutions, focus on women, increase in food and drug administration, and greater contribution from the Central Budget. The PMSSY 2006 was rolled out by 2009-10 with the following initiatives in mind: (1) Setting up of six AIIMS-like institutions with an 850 bedded hospital and 39 speciality/super-speciality disciplines.

3.3.2. Classifications of Hospitals in India

Hospitals in India can be classified on the basis of following three criteria:

1. Types of services provided
2. Complexity of ailments treated
3. Ownerships of Hospitals

On the basis of services rendered and complexity of ailments treated, hospitals can be classified as: (1) Primary care hospitals/Dispensaries; (2) Nursing Homes; Secondary care hospitals (General and Specialty Care); and Tertiary Hospitals (Single and Multi-specialty). Figure 3.3 presents the various classification schemes of hospitals in India.

The primary care facilities—dispensaries and clinics are generally the first point-of-contact between the patient and the healthcare service providers in an Indian hospital setup, which offers basic curative as well as preventive medical services in an outpatient setting. These

clinics are housed with one or more general practitioners and do not have any intensive care units (ICUs), or facilities for performing surgeries.

Based on the type of service provided, the next type of hospital is termed as nursing home, which consists of a premise housed with a single doctor or a group of doctors and having an inpatient capacity of at least 20 beds. Apart from general sickness, injury or infirmity, nursing homes in India are specialization-specific like cardiac, maternity, orthopaedic, ophthalmic, dental, ear-nose-throat (ENT) and general surgery.

The next type of hospital, secondary hospital, is further classified as general secondary hospital and specialty secondary hospital. A general secondary care hospital is generally the first point-of-contact (i.e. hospital) for an inpatient for common ailments. Therefore, this type of hospital typically attracts local patients (those staying within a radius of 30 kilometres). It has a capacity of treating 50 to 100 inpatients at one time, out of which 10 percent beds are reserved for ICU patients. A general secondary care hospital is housed with one central laboratory, a radiology laboratory and an emergency care department and can treat various medical specialties which include internal medicine, general surgery, obstetrics & gynaecology (OBG), paediatrics, ENT, orthopaedics and ophthalmology. A specialty secondary care hospital offers specialities like gastroenterology, cardiology, neurology, dermatology, urology, dentistry, oncology and may have some surgical specialities, apart from the seven medical specialities offered by a general secondary care hospital. It also consists of a blood bank and physiotherapy department besides having departments for performing diagnostic tests related to radiology, biochemistry, haematology and microbiology. It generally has a bed capacity of 100 to 300 inpatients, out of which 15 per cent of beds are dedicated to critical care or ICU patients, and caters to a patient population living within a radius of 100 to 150 kilometres.

The third and the final category of hospitals, tertiary care hospitals can be classified as single speciality tertiary care hospitals and multi- speciality tertiary care hospitals. A single speciality tertiary care hospital is responsible for treating of just one type of ailment. For example, Escorts Heart Institute & Research Centre (New Delhi) caters to only cardiac related ailments, Sankara Nethralaya (Chennai) deals with only ophthalmic cases, and so on. Whereas a multi-speciality tertiary care hospital deals with all medical specialities and even cases like multi-organ failure and trauma patients. Therefore, in most cases a multi-speciality tertiary care hospital acts as a referral hospital for patients coming from other types of hospitals. Most multi-speciality tertiary care hospitals are located in state capitals or

metropolitan cities and largely cater to migrant patients who are staying within a radius of 500 kilometres. It can house 300 to 1500 inpatients, out of which 20-25 per cent beds are dedicated for critical care patients. Apart from other specializations, these hospitals can treat cardio-thoracic surgery, neuro-surgery, nephrology, surgical oncology, neonatology, endocrinology, plastic and cosmetic surgery, and nuclear medicine patients. Similarly, apart from other diagnostic facilities, it has a histopathology and immunology laboratory. Apart from single and multi-speciality tertiary hospitals, there is another type of hospital called 'quaternary care hospital' which offer facilities similar services to a tertiary care hospital but focuses on a niche segment of patients who are in need of special or 'super speciality' surgical procedures like advanced cardiac, neurological and joint-replacement surgeries.

Classification of hospitals can also be done on basis of ownership. Generally, there are two parties involved in administering a hospital facility, namely owner and a manager, where in some cases a hospital may be owned by one or more parties and managed by some other party. Therefore, an owner is a person who owns a hospital whereas a manager is a person who manages or runs a hospital. So, based on ownership hospitals in India may be classified into five categories: (1) Government owned and managed (BMC Hospitals, KEM Hospital, Coopers Hospital), (2) Private owned and managed (Asian Heart, Apollo, Wockhardt), (3) Trust owned and managed (Lilavati, Hinduja), (4) Trust owned and managed by private party (Apollo in Ahmedabad is owned by a trust and managed by the Apollo group), and (5) Owned by a private player and managed by another private player (Kamineni Hospitals, Hyderabad with Wockhardt Hospitals).

At present, most of the hospitals in India are owned and managed by either trusts or large corporations. For instance, in Mumbai, the Jaslok or Hinduja Hospitals are run by trusts, while the Wockhardt Hospital has been set up by the pharma major. The Asian Heart Institute in Mumbai is run like a corporate, but a team of nine doctors, having a stake in the hospital, has raised a large portion of the hospital's equity. Dr Prathap Reddy, a doctor by profession, also promoted Apollo.

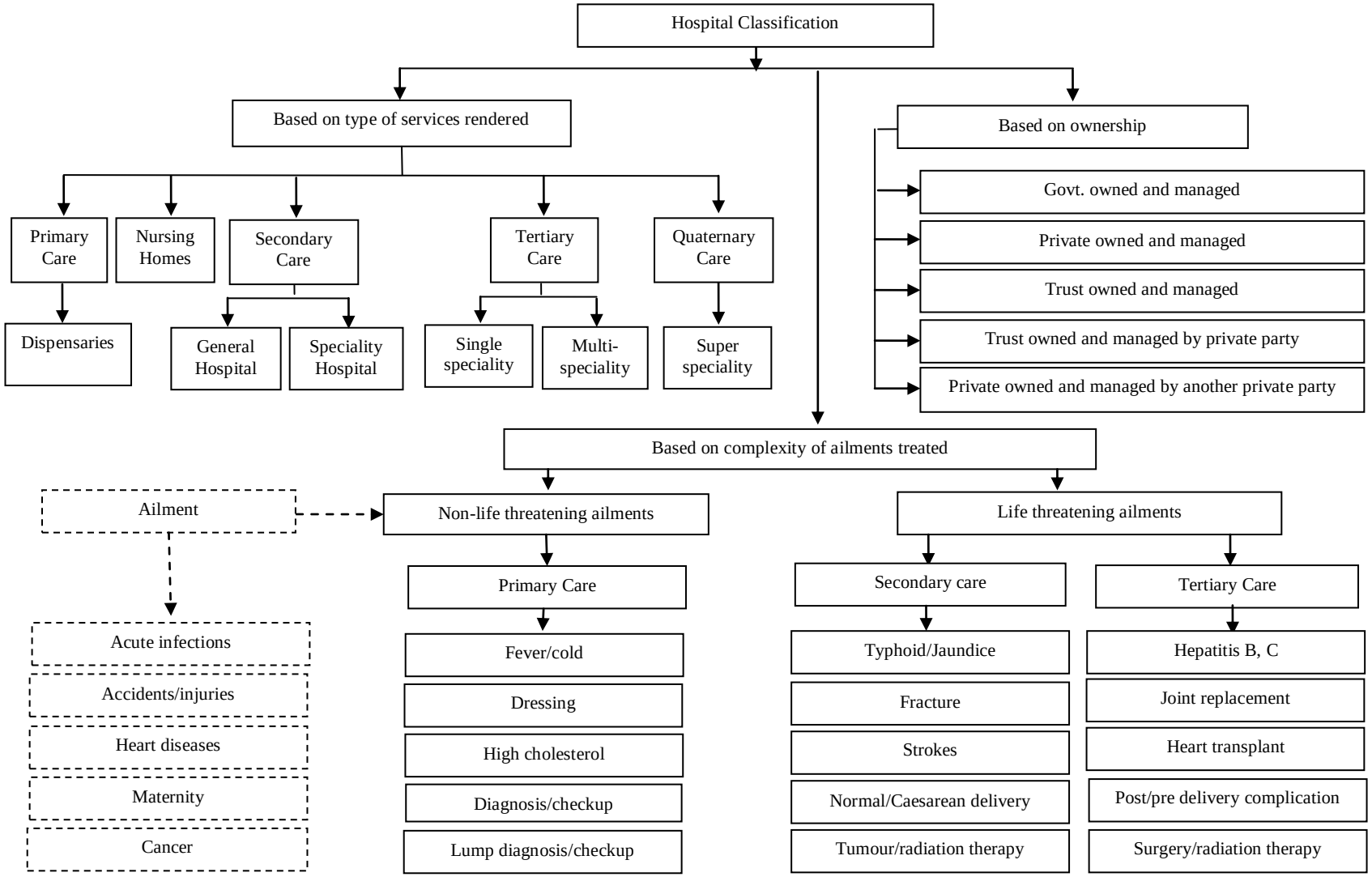

Figure 3.3. Classifications of Indian Hospitals

3.3.3. Industry Characteristics

The business prospects of Indian hospital industry may be seen on the basis of following characteristics:

1. Seasonality of Market

To an extent the Indian hospital industry suggests that the inflow of patients in a hospital is seasonal. As discussions with hospital management revealed that the period from June to September is considered the boom period, while the patient rate is least during months of October-November.

2. Segmentation/Client mix

In India, the customer segmentation of a hospital can be seen in light of three perspectives: (1) geography---Local , non-local, and foreign (2) paying potential---free , via TPA, and self-paying patients, and (3) market offering—only treatment v/s package. Since most hospitals in India are situated in urban setups, it first focuses on local demand and once the brand is established it starts looking for neighbouring cities and later foreign demands. Next, on the basis of paying potential, customers may be segmented as free patients, self-paying and those whose payments (full or partial) are done via TPAs. In case of some tertiary care hospitals, patients are levied a charge for services that is proportional to their income, and also a small percentage of beds is provided free. However, as per the current estimates, the largest chunks of patients (approximately 85 percent) are self-paying or catered via TPAs. For example, in Sankara Nethralaya (Chennai), 81 per cent of the patients are self-paying, while in Arvind Eye Hospital, only 30 per cent pay for the services (CRISIL Research, 2009). The third level of customer segmentation can be done on the basis of market offering---only treatment and package treatment (which may include pre and post treatment care). Package treatment is offered in both Indian and foreign markets. The share of foreign patients in the Indian healthcare sector is miniscule. In 2006, India treated around 1.8-2 lakh international patients. India attracts patients from countries like Afghanistan, Pakistan, Nepal, Bangladesh and the Middle East. Medical tourism is one form of package treatment, which is restricted to few major cities (healthcare clusters) such as Chennai, Mumbai, Delhi, Hyderabad and Bengaluru. These services are being catered mainly by the large corporate hospitals.

3. Hospital industry is capital-intensive and labour-intensive

The hospital sector is highly capital-intensive due to the high per capita bed cost. The cost of setting up a bed in secondary and tertiary hospitals ranges from Rs 2-2.5 million and Rs 3-5 million, respectively. The hospital sector is also highly manpower-intensive. However, India faces a severe shortage of adequately trained skilled manpower. Skilled manpower includes doctors, nurses and paramedical staff comprising lab-technicians, radiographers and therapists.

4. Foreign Direct Investment

In India, 100 per cent foreign equity participation is permitted in the sector, and approval is through the automatic approval route. Currently, opportunities to build hospitals in India are coming either through joint ventures or individually.

5. Service Quality focused

Quality is a crucial factor in healthcare, which can strengthen community confidence in a hospital by highlighting the hospital's commitment to provide safe and quality care. Although, the issue of healthcare quality is addressed through licensure, certifications, and accreditation system, yet accreditation of hospitals in India is a voluntary and not a mandatory process which is done by a private authorised agency or organization. In India, it is mostly the corporate hospitals that have obtained accreditations. For example, Indraprastha Apollo Hospitals (Delhi) and Wockhardt Hospitals (Mumbai) have received JCI accreditation. Many hospitals like Max Healthcare, Sankara Nethralaya have received ISO accreditations.

3.3.4. Major Players in the Indian Hospital Industry

Hospitals in India are densely located in major cities like Mumbai, National Capital Region (NCR), Kolkata, Bangaluru, Chennai and Hyderabad. Besides, there are several medi-cities coming up in India, e.g. Dr. Trehan's Medicity in Gurgaon. Following are the brief profile of major hospital industry players in India:

1. **AIIMS (All India Institute of Medical Sciences):** established in 1956 through an Act of Parliament, this hospital provides facilities for teaching, research and patient-care. AIIMS Hospital has 1,766 beds capacity. It is largest public sector hospital in India, which has 25 clinical departments including six super specialty centres (Dr Rajendra Prasad Centre for Ophthalmic sciences, cardiothoracic centre, neurosciences centre, Dr

BR Ambedkar Institute Rotary Cancer Hospital, National Drug Dependence Treatment Centre and Centre for Dental Education and Research). AIIMS also manages a 60-bedded hospital in the Comprehensive Rural Health Centre at Ballabgarh in Haryana and provides health cover to about 2.5 lakh population through the Centre for Community Medicine.

2. **Apollo (Apollo Hospitals Enterprise Limited):** was jointly promoted by Dr Prathap Reddy and Mr Obul Reddy in 1979. Apollo is the largest healthcare group in Asia. Apollo Group is an integrated player, covering a vast spectrum of healthcare services, including hospitals, clinics, pharmacy, hospital project consultancy, medical business process outsourcing, education and research, telemedicine and health insurance. Apollo enjoys the first mover advantage over its competitors.

3. **Fortis (Fortis Healthcare Limited (FHL)):** was initiated by the promoters of Ranbaxy Laboratories Limited in 1996, with an investment of Rs 1,550 million. Fortis is the India's second largest private healthcare chain, with a network of 27 healthcare delivery facilities including 15 hospitals (with a bed strength of 2,888, of which 14 are in India and one in Mauritius; 12 satellite and heart command centres of which 11 centres are in hospitals across India and one satellite centre is in Afghanistan). It is the second largest private healthcare chain in India, next only to Apollo group. Escorts & IHL (International Hospitals Limited) acquisition has assisted in fortification of Fortis' position. However, the size is not comparable to the Apollo group, the largest corporate player in India. The model used by the group for its growth is a 'Hub and Spoke'. Fortis' hospital network consists of multi-speciality 'spoke' hospitals, which provide comprehensive general heathcare to patients in their local communities and super speciality 'hub' hospitals, which provide more advanced care to patients, including patients from the 'spoke' hospitals and other hospitals in the surrounding areas. Both 'Escorts' and 'Fortis' healthcare brands are widely recognised by healthcare professionals and patients in speciality areas. Apart from this, the group's reputation and affiliation with Ranbaxy Laboratories Limited also further enhances its brand equity.

4. **Max Healthcare (Max Healthcare Institute Limited):** a subsidiary of Max India Limited launched its operations in 2001. Currently a small player, but has the potential

to become a strong player in NCR in near future. Has strategic collaboration with Singapore General Hospital and also stands to gain from medical tourism by tying up with organisations promoting 'Medical Value Travel 'in the US, Canada and the UK. Max focuses on family healthcare programs through its "Happy Family Plan" and "Max Healthy Neighbourhood" Programme.

5. **Metro Hospitals:** Dr Purshotam Lal (Padmabhushan and Dr BC Roy National awardee), a pioneer of Interventional Cardiology in India, along with a group of NRI physicians founded Metro Group of Hospitals in June 1997. Metro Hospitals & Heart Institutes has marked its presence internationally by offering healthcare services to patients from Oman, Nigeria, Iraq, Afghanistan and Fiji.

6. **CARE Hospitals:** formed by Dr B Soma Raju, Dr N Krishna Reddy and cardio-thoracic surgeon Dr Prasada Rao in 1997. CARE Hospital is recognised for providing quality healthcare to the employees of various organisations. CARE Hospital provides various health management plans for corporate employees. In terms of bed capacity, the group is the second largest player in cardiac related ailments in Hyderabad (Banjara Hills and Nampally), next to Apollo (market leader).

7. **Wockhardt Hospitals (Wockhardt Ltd.):** The group has a long-standing reputation for cardiovascular excellence along with premier diagnostic and therapeutic capabilities. The group offers tertiary care services in the country. The group has 16 hospitals across India, out of which five are owned (two in Bengaluru, two in Mumbai and one in Kolkata) and 11 are managed. Apart from others, the group has long-term exclusive agreement with Harvard Medical International, Boston, USA. Its foray into organ transplantation will attract a lot of patients from western nations as part of its global medical tourism initiative.

8. **NIMHANS (National Institute of Medical Health and Neuroscience):** established in 1974, the hospital is a Joint Venture of Central Government and the Government of Karnataka. It is a premier research and training centre in the field of mental health and neuro sciences. The group specializes in de-addiction and caters to nearly 70 per cent of patients seeking treatment for substance abuse problems in the Bengaluru. NIMHANS is the largest postgraduate training centre in mental health and neurosciences.

9. **Manipal Group (Manipal Education and Medical Group (MEMG)):** one of the leading healthcare delivery systems in Asia has a rich history of over 50 years. MHS is known for quality and affordable healthcare, and as one of the leading quaternary care specialty referral centres in India. The hospital group has a strong presence in Karnataka, and the group is credited of achieving several awards and recognition, like Golden Peacock Award for quality healthacare, The Consumer Voice Award for most patient recommended hospital, and The Week Award for best adjudged hospital for several consecutive years.

10. **Aravind Eye Hospital:** founded by Dr G Venkataswamy in 1976, is the largest eye care facility in the country in terms of surgical volume and the number of patients treated. It is a charitable organization, which gives free treatment to 70 per cent of patients, and is known for revolutionising hundreds of eye care programmes across the developing world. Has foreign tie-ups with several organizations, and is well known name in community service. Its services have been high recognized through several recognition and awards like Gates Award for Global Health for 2008 from the Melinda Gates foundation.

11. **Sankara Nethralaya:** founded by Dr Sengamedu Srinivasa Badrinath, along with a group of philanthropists as a mission driven charitable eye hospital in 1978, which is acknowledged nationally and internationally. It is a strong player in the country in terms of ophthalmic care. The company has foreign tie-ups could benefit the company in terms of medical tourism opportunities and research. For example, it has a tie-up with a US organisation, Association for Research in Vision and Ophthalmology (ARVO) and Joint venture with Nichi-In Bio Sciences (P) Ltd and Mebiol Inc., Japan for research project.

3.4. NEED AND SCOPE OF BRAND EQUITY MEASUREMENT

Based on the overview of hospital industry, the following points induce the need and scope of customer-based brand equity research in emerging markets like India.

- Since a large share (nearly 70 percent) of healthcare spending is in the private sector, out of which the largest chunks are self-paying, Indian hospital industry in the private sector

is highly characterized by intense price competitive and service mimicking. Therefore, building high brand equity can be a strategic step toward achieving brand differentiation and competitive advantage in the Indian market.

- Accreditation is an important aspect of promoting quality in the healthcare industry. However, such accreditations are based on peer review and are static in nature, which does not provide any strategic guidelines for marketing. Moreover, in absence of any domestic system of hospital accreditation, understanding of consumer attitude and perception through CBBE measurement can compliment firm's effort in positioning quality, as well as in providing operational guidelines for marketing.

- According to a Brand Equity Foundation research in 2009, healthcare is one the most prospective business sector in India, particularly due to large domestic demand and high potential for medical tourism, medical equipment manufacturing, medical research, medical transcription, use of information technology in healthcare, and pharmaceutical sector. According to this research, hospital branding is particularly recommended with regard to generating high revenue and sustaining in the global market.

- In terms of brand leveraging potential, corporate hospitals in India have a high scope and potential of brand extension in Pharmacy retail and diagnostic and pathological services, which are still highly unorganized, despite increasing corporate presence in this segment has increased. Also, corporate hospitals in India have a lot of scope in preventive care segment by providing standardised quality offers through various forms of health counselling, including nutrition advice, exercising, and non-medicinal cure to certain diseases would also be revenue earners for such setups. Rejuvenation centres offering services based on naturopathy and yoga could also come under this segment. The incidence of regular health checkups in hospitals as a preventive measure has gone up as well. Various health check-up packages can be provided by hospital. Moreover, hospitals have a lot of scope in providing Third party administrator (TPA) services.

- Brand equity can help Indian corporate hospitals in better differentiation, pricing on patient care, enhance brand image of network hospitals, communicating quality to government officials, doctors and patients, improving organisational quality both

structurally as well as functionally, and increase their level of security in arranging loans.

- In urban areas, the team of doctors and a hospital's brand equity is far more critical to its success than its location, due to adequate healthcare infrastructural facilities.

- In the initial years, the brand equity of doctors attracts patients to a hospital. The presence of renowned doctors in the staff list ensures a healthy flow of patients. Subsequently, when a hospital has established a name for itself its brand becomes relatively more important than the doctor's. However, with increasing corporatization of the hospital industry over the last few years the scenario has slightly changed. Today, brand visibility is built around the promoters and the level of technology and infrastructure that the hospital offers. Therefore, building brand equity is detrimental to hospital success.

3.5. CONCLUSION

The chapter discussed above provides an overview of the hospital industry. It highlights upon the emergence of healthcare sector in India, particularly with regard to the growth of private of private players in the Indian hospital market. The present chapter discusses the hospital market characteristics, value network, and the paucity of researches with regard to the customer-based hospital brand equity evaluation. In this process, it highlights on this knowledge gaps with regard to the measurement of customer-based brand equity, and has drawn attention toward this critical issue, particularly how important this information could be to the hospital decision makers in an emerging market conditions like those prevailing in the Indian hospital industry. The chapter explores the need and scope of brand equity measurement for the hospital brands, which inductively support the problem statement in question.

Chapter 4

RESEARCH DESIGN AND METHODOLOGY

The present chapter provides a brief overview of the design strategy applied to accomplish the primary objectives of this study. The subsequent sections provide justifications for the research design and the methods used for survey instrument design, sampling, data collection and data analysis that were applied for scale development, modeling and moderation analysis.

4. INTRODUCTION

A research design serves as a roadmap for fathoming the primary goals of a research. It provides important guidelines that the present and the future researchers have to follow (Tsang and Antony, 2001; Antony et al., 2002). A research design depends on the nature of problem and the rational approach of addressing that problem, and therefore it is independent of methodology. It deals with the purpose of enquiry and the way it can minimize the probability of getting invalid or unreliable evidence. The primary role of a research design is to seek an unambiguous answer to the research questions under enquiry. However, such evidence need not only support existing theories but may even seek for alternative explanations.

In order to explore the richness of information arising from several cross-border, cross-cultural and cross-disciplinary phenomenon, management scholars, in recent years, have started focusing on several interdisciplinary approaches of addressing the knowledge gaps which in turn require methodological pluralism (McGrath, 1982). Researchers today have to see their problem with much more complexity as they are multi-faceted in nature and may require multi-method solutions (Hurmerinta-Peltomaki and Nummela, 2006). However, considering the level of complexity involved in the fulfillment of objectives of the present problem, the need for flexibility and methodological pluralism was limited. Although, scale development, modeling and moderation analysis are multi-faceted problems, the advent of advanced multiple regression techniques like structural equations modeling have made complex problems easier for the researchers. Therefore, considering the nature of problem and the methods required for this study, an empirical survey-based approach seemed quite rational.

The design scheme of the present research was mainly guided by the following considerations: (1) gaps identified in the literature, (2) nature of research questions, (3) information required to prove the hypotheses, (4) data collection and analysis, and (5) the expected research outcomes. The overall design scheme of this research is based on the survey-based quantitative methods, mainly due to the following beliefs of the researcher: (1) often knowledge claims made only on the basis of literature alone is not sufficient; (2) BE measures and metrics vary in different conditions; (3) knowledge claims regarding BE sources and outcomes need to be made based on a deeper level of understanding than what has been presented in the existing literature; and (4) the results obtained needs to have a sound theoretical background.

Figure 4.1 describes the overall design and the structure of this research. The research process started with the review of literature, which led to the identification of the problem statement, important variables and the conceptual framework. Based on various theoretical inputs, several discussions were held with the academic mentors, industry experts, peers and focused groups of customers, which helped in the qualitative assessment of the conceptual model and important study variables in the context of hospital.

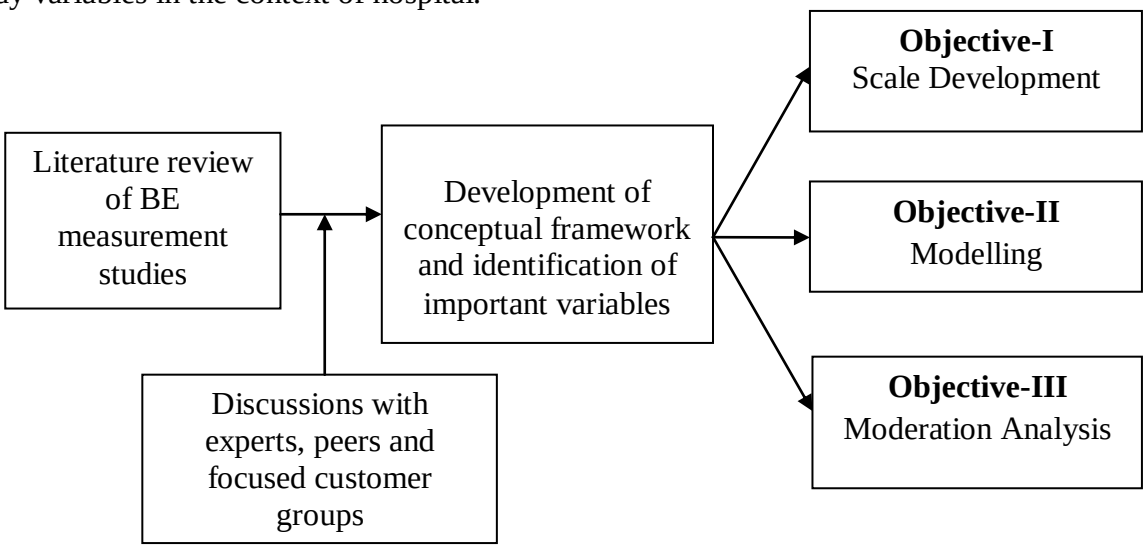

Figure 4.1: Overall Design Strategy of the research

4.1. CONCEPTUAL FRAMEWORK

Based on the review of literature and discussions with the academic mentors, industry experts, peers and focused groups of customers, the conceptual CBBE framework developed for the present study was in conformity with the prior researchers like Keller's (1993) and Raggio and Leone's (2007), conceptualization of CBBE (see Figure 4.2). According to Keller (1993),

knowledge is the most powerful source of BE, which materializes due to various environmental reasons (marketplace activities, brand related marketing activities, consumer experience with the brand, and through secondary brand information, like WOM (Raggio and Leone, 2007). Individuals brand knowledge (experience and associations) contribute to CBBE, which consequently helps them in purchase related decisions and future course of action. CBBE creates a moderating affect on the impact of marketing activities on consumers' actions. Consequently, CBBE depends on the favourability, strength and uniqueness of brand associations, which are intrinsic and individualistic in nature. Since, BE is highly dependent on the cognitive apparatuses of the consumers, most BE researchers advocate for direct and indirect customer-based measures of BE. Therefore, the constructs in the model emanates from customers' brand knowledge and has been assumed to be hierarchical in structure.

4.2. MODEL VARIABLES

The proposed model links customers' brand knowledge constructs with constructs representing the three dimensions for overall CBBE: Knowledge Equity (KE), Attitudinal Equity (AE), and Relationship Equity (RE), which partially confirms with the Tolba and Hassan's (2009) CBBE model. Further, the present study considers the following constructs under each of the measurement dimensions. Brand knowledge (Brand Awareness, Brand Image/Associations); Knowledge Equity (Brand Awareness, and Brand Familiarity); Attitudinal Equity (Perceived Quality, Perceived Value, Attitudinal Loyalty); and Relationship Equity (Trust, Satisfaction, Intent to interact with the brand in future, and Intent to spread WOM). The overall brand equity results in three behavioural brand equity (BHE) outcomes: brand perception, intention to purchase and behavioural loyalty. The above constructs were found to be well supported in the literature. The further description of the model constructs are mentioned in Chapter Six of this thesis: modelling of customer-based HBE.

Besides, variations due to demographic variables such as age, gender, income, education, and occupation, the proposed model assumes four control variables that are likely to affect the behaviour of hospital customers, particularly in the emerging markets. These control variables are: (1) market (based on type of hospital); (2) brand usage; (3) attitude toward brand/focal company; and (4) the country-of-origin (COO) effect. These variables are likely to bring variations in the HBE model.

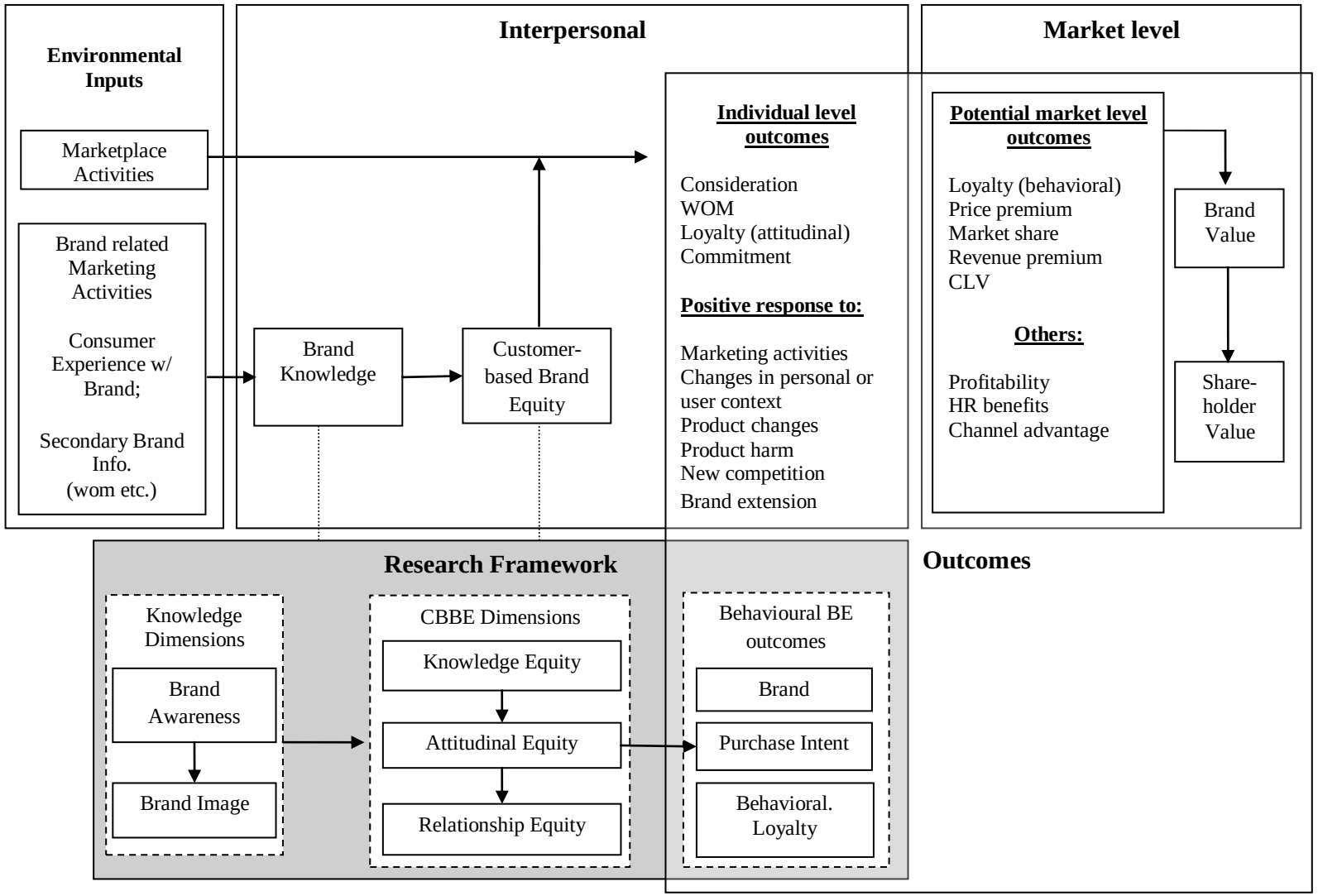

Figure 4.2. Embeddedness of Research Framework in the Overall Marketing Framework (Source: Raggio & Leone, 2007)

4.3. OBJECTIVES AND RESEARCH QUESTIONS

The present study aims at fulfilling the underlying research objectives and questions that were identified for addressing the problem statement in question. Following are the objective-wise description of various research objectives.

Objective 1: To develop a scale for measuring customer-brand hospital Brand Equity (HBE).

Based on literature survey, it was found that the earlier models of BE are goods-centric and based on western market (developed market and isolated culture) experience, which would not be very logical to apply in the case of service brands, particularly in the context of emerging economies and for brands having high credence attributes. Therefore, it was important to know whether (1) CBBE dimensions differ in goods and services? (2) If they do, how and to what extent CBBE dimensions differ in the case of hospital services?

The above mentioned issues were addressed primarily with the help of literature and then the further validation of the conceptual framework and important variables that could be applied in the case of hospital services was done through several sessions of formal and informal discussions with academic experts, industry experts, peers and customer groups. Based on the above mentioned activities, the probable variables were identified, which were then applied for developing an instrument for measuring customer-based HBE. The scale development process followed procedures those suggested by Churchill (1979) and others.

Before a scale development process actually begins, the scope of constructs must be decided (Churchill, 1979). In general the scale development procedures include: construct domain specification, measurement item generation, questionnaire development, measure purification, and development of measurement model. Figure 4.3 presents the schematic overview of scale development procedures.

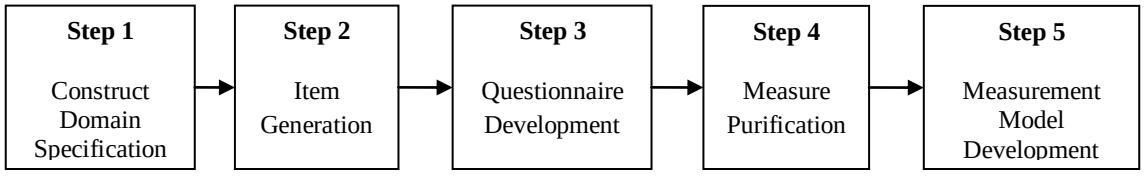

Figure 4.3 Scale Development Procedures

Once the measurement variables are identified in step one. In step two the generation of measurement items involves two activities: (1) generation of a pool of items, and (2) item reduction after content and face validity (Arnold and Reynolds, 2003; Voss et al. 2003). In

step three, the questionnaire development followed, which included four sections: description of basic terms, description about CBBE with example, items related to CBBE dimensions, and demographic details. Since, data collection through new technologies are much cost effective and time saving, encouraging, and more popular today (Ilieva et al. 2002; Craig and Douglas, 2001), the questionnaire for this study was prepared in Google docs, and was administered online through emails as well as in person, and through intermediary contact. In step four, the measure purification process included three main activities: (1) exploratory factor analysis (EFA), (2) confirmatory factor analysis (CFA), and the initial assessment of scale reliability, unidimensionality, and convergent and discriminant validity of items (Churchill, 1979; Arnold and Reynolds, 2003). EFA was done using the principal components extraction and varimax rotation methods (Costello and Osborne, 2005). Based on EFA results, items with factor loadings < .4, cross loadings > .4, or communalities <.3 were item candidates considered for deletion (Hair et al. 2010). CFA was applied in AMOS .18 to improve the congeneric properties of the scale by following an iteration process based on CFA results (Arnold and Reynolds, 2003). Then the items were assessed for unidimensionality, reliability and discriminant validity using appropriate indices. A detailed discussion on the scale development procedures is mentioned in chapter seven.

Objective 2: To model customer-based HBE dimensions and examine their relationships with OBE and BHE constructs.

Further, the literature review in Chapter two also highlighted the problems of (1) excessive theorizing of Keller's (1993) and Aaker's (1991) brand equity framework, and the growing number of calls for the (2) need and importance of measuring the relational outcomes of brand equity. Therefore, it was quite rational to explore (1) how brand knowledge is related to OBE and BHE outcomes; (2) Do customer and brand engage in interpersonal relationship? (2) If yes, what are the key sources and outcomes of relational brand equity and how they are related?

The above research questions were addressed through a modeling procedure, which required the validation of conceptual framework on the basis of data collected through a questionnaire-based survey instrument obtained after the fulfillment of objective two of this study. The conceptual framework for customer-based HBE (structural model) included primary sources of CBBE and three overall CBBE dimensions. Based on inputs from the literature survey, relations were hypothesized between sources of CBBE (brand awareness

and brand associations) and the three overall CBBE dimensions (i.e. knowledge equity, attitudinal equity and relationship equity). In this case, all hypothesized paths (relations) were expected to be positive. The structural equation model (SEM) was estimated in AMOS .18. The overall model was evaluated on the basis of fit indices: discrepancy functions, comparison of target model with the null model, information theory goodness of fit measures, and non-centrality fit measures. Since, acceptable fit indices do not necessarily imply that the relations are also strong; therefore, standardized path loading had to be significant (Hair et al. 2010).

Objective 3: To examine the moderation effects on the customer-based HBE model based on levels of customer brand knowledge.

The literature review in Chapter two revealed that customer brand knowledge is the most fundamental dimension of BE and almost all models predict high levels of customer brand knowledge, but in actual situation high levels of band knowledge may not be possible always. Therefore, it was required to explore (1) how different levels of customer brand knowledge influence key relationships between CBBE sources and overall CBBE dimensions (i.e. knowledge equity, attitudinal equity and relationship equity). The above question was addressed with the help of a moderating analysis.

In order to develop a better understanding of HBE model, a moderation analysis was done to examine the effects of levels of customer knowledge on the HBE model. For this purpose, differences between levels of customer brand knowledge were considered. Analysis of variance (ANOVA) test, group specification and multi-group analysis was done (see Figure 4.4) to find out whether significant difference in the customer-based HBE model could be found on the basis of knowledge levels. Then groups were assigned for the moderation analysis, and a multi-group analysis was done in AMOS to find out whether Chi-squares differences is significant between a constrained and an unconstrained HBE model, and moderation is found if chi-square for a constrained model is significantly higher than that of an unconstrained model (Hair et al., 2010).

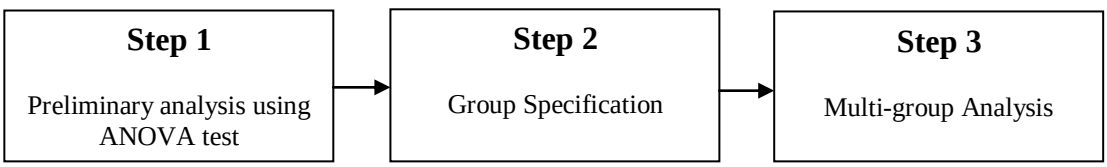

Figure 4.4 Steps for Moderation Analysis

4.5. CONCLUSIONS

This chapter acts as a skeleton of the study, where the variables which have been identified from the literature were rationalized into a conceptual framework and the design scheme of the study was decided. Based on the research design, the steps of fulfilling the research gaps were sequentially planned. In the introductory sections of this chapter, the conceptual framework and overall design strategy have been discussed and in the subsequent sections, it presents an enumeration of methods applied for scale development, model testing and moderation analysis. Wherever deemed necessary, diagrammatic representation of the method has been provided for better understanding and simplicity.

Chapter 5

SCALE DEVELOPMENT

This chapter is a description of the procedural development of a scale for measuring customer-based brand equity in hospital industry. It follows a conventional scale development procedure for construct domain specification, item generation and item purification. The present chapter is an enumeration of procedures for generation of a pool of measurement items, questionnaire development, sampling, data collection and data analysis techniques that were used for item reduction and development of a measurement model for HBE.

5. INTRODUCTION

Based on the Aaker's (1991) and Keller's (1993) conceptualization of CBBE, many researchers have tried to operationalize different scales for measuring the direct and indirect sources and outcomes of brand equity. However, most of the earlier scales that are based on the direct measure of BE employ complex statistical procedures which are not easier for the practitioners to understand (e.g. Srinivasan, 1979; Park and Srinivasan, 1994; Leuthesser et al. 1995). The direct measures of BE have focused on the customers' brand preferences or utility--overall preference (Srinivasan, 1979; Park and Srinivasan, 1994; Jourdan, 2002), halo effect (Leuthesser et al., 1995), market performance (Kamakura and Russell, 1993), equilization price (Swait et al. 1993), or integrative measures (Shankar et al., 2008). They have employed complex methods such as conjoint analysis, repeated experimental design, partialling out and double centering techniques, and monetary measure of brand value, using both financial and customer survey data. However, the complexity of such research design could be considered as a major limitation for the usage of direct brand equity measures of BE.

On the other hand, the indirect measures of BE use a multidimensional scale for measuring the intermediate sources and outcomes of BE. Lassar et al. (1995) used a 17-item scale to measure brand performance, value, social image, trustworthiness, and commitment. However, they did not include any behavioral component into their model, and also they did not report on the external validity of their scale. Vazquez et al. (2002) have used this approach to develop a 22-item scale, having a reasonable degree of reliability and validity. Kocak et al. (2007) used the Vazquez et al.'s (2002) scale in the same sector, which was

reduced to a 16-item scale. They have reported cultural issues with the replication of the scale. Rajh (2002) has used a 14-item scale for measuring the Keller's (1993) CBBE framework. However, use of student sample was its major limitation. Yoo and Donthu's (2001) scale has been reported to be the most robust scale for measuring brand equity. However their scale collapsed the two constructs of brand equity, i.e. brand awareness and brand associations, as one. Similarly, several other scales have been developed (e.g. Buil et al. 2008; Pappu et al. 2005; Netemeyer et al. 2004; Washburn and Plank, 2002; and others). Besides, scales have been also developed for the overall brand equity assessment, with specific industry and cultural considerations. For example, de Chernatony et al. (2004) developed a scale for financial services, and Christodoulides et al. (2006) developed for online services. Other notable studies in this direction have been Boo et al. (2009), Davis et al. (2009), Rajasekar and Nalina (2008), etc. However, the representation of various CBBE scales and their dimensions in the existing literature is quite generic, which do not provide any guidelines for its employability in the context of services, particularly with regard to hospital services. Moreover, the large proportion of CBBE scales have been developed for measuring BE in the context of goods brands and have been validated in the context of developed markets, which do not confirm that the same scale could be employed for measuring CBBE of service brands, particularly when researchers have to capture the attitudes and perceptions of consumers in emerging markets. Therefore, the development and validation of a customer-based HBE scale has been considered as a case in point for this study. The subsequent sections of this chapter give a detailed description of the procedures followed for the scale development.

5.1. SCALE DEVELOPMENT PROCEDURES

A conventional scale development procedure involves: (1) construct domain specification, (2) item generation and reduction, and (3) purification of scale items on the basis of development of measurement model and scale reliability and validity assessment (see Figure 5.1). For this study, the scale development involved procedures suggested by Chruchill, (1979), and augmented by others (e.g. Peter, 1981; Anderson and Gerbing, 1982; Nunnally and Bernstein, 1994; Zaichkowsky, 1985; Arnold and Reynolds, 2003). The first step toward scale development is domain specification, which involved the description of measurement constructs based on the conceptualization present in the literature. The second step involved generation of initial pool of measurement items and item reduction process for assessing the content and face validity of items based on industry and academic expert judgment. The final step involved item purification by testing of items for a measurement model and assessment

of scale reliability and validity. The scale reliability involved testing items for unidimensionality, composite reliability, and convergent and discriminant validity. The subsequent sections of this chapter highlight on the procedures adopted for the development of the HBE scale.

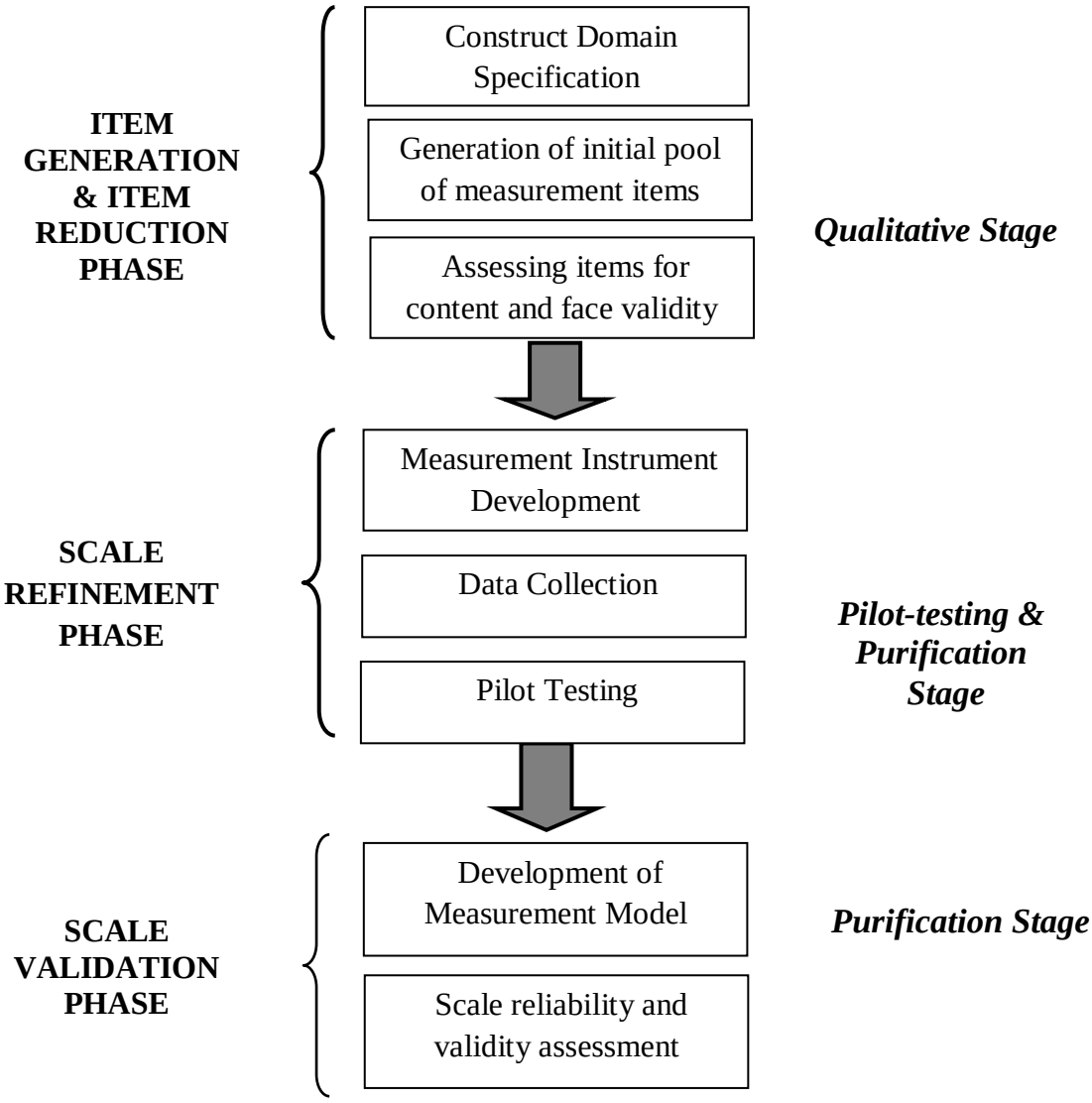

Figure 5.1: Scale Development Framework

5.2. DOMAIN SPECIFICATION

The goal of this scale development process was to find out a set of items that could be used to reliably and validly measure the domain of customer-based brand equity in hospital industry. But, prior to the identification of measurement items the construct domain must be specified (Churchill, 1979). For domain specification, the conceptual framework and its constituent constructs were drawn from the existing literature. For this study, the conceptual framework was developed on the basis of Keller's (1993) and Raggio and Leone's (2007) conceptualization of BE. According to Keller (1993), CBBE is defined as the "differential

effect of brand knowledge on consumer response to the marketing of the brand" (p.8). Keller's conception of BE is much more clear, focused and integrative as it (1) is based on the customers' perspective--assuming that the 'value exists in the mind of the customers', (2) focuses on brand knowledge, which is one of the most primary sources of BE, and (3) is integrated with the firms' perspective, as it states that CBBE emanates due to the "differential effects…response of customer" (p. 8) to the firm's marketing efforts. Further, Raggio and Leone's (2007) in an attempt to separate brand equity and brand value conceptualize BE as "a moderator of the impact of marketing activities on consumers' actions" (p. 385). Raggio and Leone (2007) also agree with the Farquhar's (1989) and Punj and Hillyer's (2004) suggestions that the concept of BE is similar to perception and attitude strength measures, which manifests the intrapersonal outcomes of strong brands as proposed by Keller. Therefore, the conceptualization of CBBE for the present study is in line with the Keller's (1993) and Raggio and Leone's (2007) definition of BE, in which they consider customer brand knowledge (also referred as CBBE in the present study) as a moderator of individual and aggregate level outcomes of firm's branding. Figure 5.2 further throws light on the above discussion.

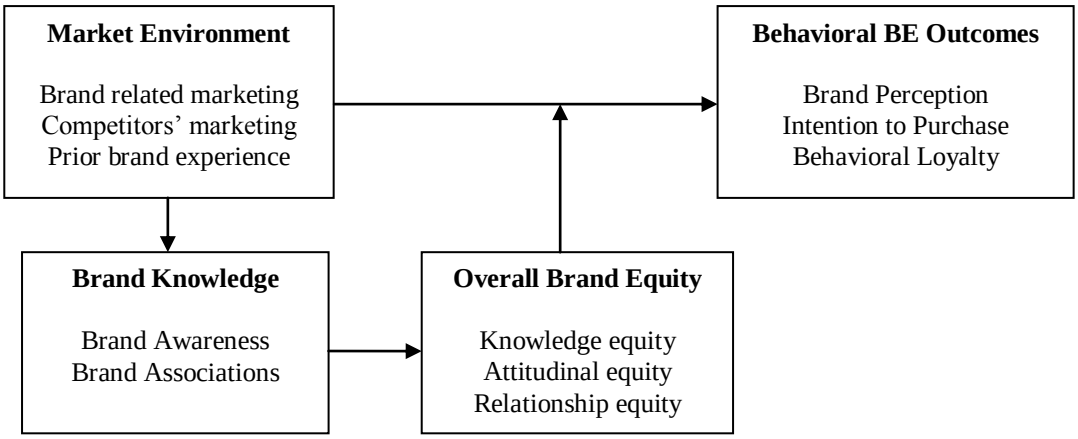

Figure 5.2.Role of Customer-based brand equity

Further, this study also draws from Keller and Lehmann's (2003) Brand Value Chain (BVC) Model, which describes 'brand knowledge' (also referred to as CBBE in the present study) as consisting of four key dimensions: awareness, associations, attitudes and attachment. While awareness and associations are the main drivers of brand knowledge (referred as knowledge equity in the present study), attitudes lead to brand perception, feelings, beliefs and attitudinal loyalty (referred as attitudinal equity in the present study), and attachments describe the kind of relationship consumer have with the brand (referred as relationship equity in the present study). Further, the current conceptualization of CBBE could be

supported on the basis of hierarchy-of-effects (HOE) model also, which describes the three-cognitve, affective and conative stages of consumer hierarchy.

According to Keller (1993), CBBE emanates from brand knowledge, which could be measured on the basis of two dimensions: brand awareness (in terms of brand recall and recognition) and brand association/image (in terms of favorability, strength, and uniqueness of brand associations in consumer memory). Following is the brief description about the two dimensions.

- **Brand Awareness**: Researchers suggest that brand awareness plays a very important role in the consumer decision making by developing consumer brand perception and attitudes, which consists of brand recognition and brand recall. While, brand recognition is a construct that measures the consumers' ability to verify prior exposure to the brand when given the brand as a cue, the brand recall measures the ability of the consumers' to retrieve the brand when given the product category, the needs fulfilled by that category, or some other type of probe as a cue.

- **Brand Associations/Image**: has been defined as the "perceptions about a brand as reflected by the brand associations held in consumer memory" (Keller, 1993, p.3). Brand associations have been classified into three major categories: attributes, benefits, and attitudes. Attributes are the descriptive features of a product or service that are instrumental in consumer decision making, and which may or may not be product related. Similarly, benefits are the personal value that consumers attach to the product, which may be functional, experiential or symbolic in nature. Finally, attitudes relate to how consumers evaluate the product, which depends on the salience of the product.

Further, to develop a more comprehensive understanding of brand knowledge (i.e. the CBBE sources), the two brand knowledge dimensions (brand awareness and brand associations) could be further sub-divided. Brand awareness was split into brand recognition and brand recall, and brand associations into: attribute related, benefits related, and attitude related brand associations (Keller, 1993). The above mentioned division could be justified in the sense that, *neither* all types of brand associations are required for all brand equity categories *nor* it is possible for the brand managers to effectively apply all associations for a brand's differentiation (Hsu et al. 2012). Moreover, the distinction between various types of brand

associations that is required for generating brand equity in goods or services is yet not very clear in the existing literature.

In order to link brand equity sources to another construct, Yoo et al. (2000) developed a scale for CBBE constructs based on Aaker's (1991) conceptualization of BE and linked them to an overall brand equity (OBE) construct. However, Washburn and Plank (2002), who replicated Yoo et al.'s (2000) scale, argue that the OBE construct was used only to evaluate the convergent validity of the multidimensional BE scale. Therefore, in the present model, OBE consists of three underlying constructs (knowledge equity, attitudinal equity and relationship equity) on the basis of Keller and Lehmann's (2003) BVC model for understanding the three important aspects of CBBE. Therefore, in the present model customers' brand awareness and brand familiarity (recognition and recall) is supposed to lead to knowledge equity, brand associations and perceptions regarding brand attribute, benefits and attitude form the components of attitudinal equity, and brand satisfaction and atitudinal loyalty (attachment) lead to relationship equity. Brand Loyalty, a key component of brand equity, in the present model has been split into "attitudinal loyalty' (a component of attitudinal equity) and "behavioural loyalty" (an outcome of brand equity) as suggested in the earlier studies (Chaudhuri and Holbrook, 2001; Morgan, 2000).

Following is a brief description of the three OBE constructs.

- **Knowledge Equity (KE)** includes Brand Recognition and Brand Recall.
- **Attitudinal Equity (AE)** includes brand associations related to brand attributes, benefits and attitudes.
- **Relationship Equity (RE)** includes Brand Satisfaction and Attitudinal Brand Loyalty.

Further, the literature review (Chapter 2) suggests that several models in the literature supported positive relationships with three behavioural brand equity (BHE) constructs: brand preference (Keller, 1993; Cobb-Walgren et al., 1995; Agarwal and Rao, 1996), intention to purchase the brand (Cobb-Walgren et al., 1995; Agarwal and Rao, 1996; Vakratsas and Ambler, 1999; Mackay, 2001; Myers, 2003), and behavioural loyalty (Chaudhuri and Holbrook, 2001; Morgan, 2000; Chaudhuri, 1999). Therefore, the present study has considered the above mentioned three constructs for understanding the individual level outcomes of BE. CBBE explains a range of consumer manifestations toward the brand, e.g. brand perception (e.g., favourability, strength and uniqueness of brand associations), brand

attitudes (e.g., brand trust, attitudinal loyalty), behaviour (e.g., WOM, purchasing at premium price), etc. The key to this measurement is the focus on individual-level measurement and brand level outcomes of BE. Therefore, respondents in this study are asked to focus on a single brand—regardless of their relationships with more than one brand. Since, it is much easier for the customers' to consider brands at an abstract level, therefore brand in the context of this study is considered "as a whole." For example, the Apollo hospital brand includes not only the primary products/service (inpatient/outpatient care) provided at the various hospital (which have local names), but also other brands under the parent brand name (e.g. Apollo Pharmacies, Apollo Cradle, Apollo REACH), and additional service (pathology, radiology, TPA, etc.) brands with the group.

5.3. ITEM GENERATION

The aim of this phase was to identify the required number of items that represent the complete domain of the constructs as described in the domain specification stage. This process began with the generation of an initial pool of items for brand knowledge, OBE and BHE constructs, which was further refined by a panel of academic experts who assessed these items for content and face validity (Churchill, 1979; Arnold & Reynolds, 2003; Hardesty & Bearden, 2004). Consistent with the procedures accepted by earlier researchers (Zaichkowsky, 1985; Arnold and Reynolds, 2003; Voss, Spangenberg, and Grohmann, 2003), the item generation process involved two stages: (1) generation of an initial pool of items, and (2) item reduction. The initial pool of item was generated on the basis of literature, discussions with academic and industry experts, and on the basis of existing scales (see Table 5.1). These items were then judged by a panel of experts to reduce items in each set based on their content and face validity. Further review by the researcher led to additional changes. Then, the resulting set of items was subjected to various reliability and validity tests for refinement, details of which are reported in the subsequent sections of this chapter.

5.3.1 Generation of initial pool of items

At this stage, the goal was to generate as many items as possible (a pool of items) that captured the full domain of brand knowledge constructs: brand recognition, brand recall, attribute related associations, benefits related associations, and attitude related associations, and OBE constructs: Knowledge Equity, Attitudinal Equity and Relationship Equity (Churchill, 1979). Items for the three BE outcome constructs were drawn from Tolba and Hassan (2009). Literature review of existing measures was used to begin with the item

generation process and discussions with industry and academic experts led to the generation of additional items (if any). Wherever possible reliable items were drawn from the previous scales (see Table 5.1).

Table 5.1.Scales used for Item Generation

Construct	Description	Source	α
Knowledge Equity	Three seven-point semantic differential items intended to measure a person's familiarity with a specific brand	Simonin and Ruth (1998)	0.80-0.94
Perceived quality	Three seven-point semantic differential items intended to measure a person's attitude toward the quality of a specific product.	Keller and Aaker (1992)	>0.70
Perceived value	Four seven-point Likert-type items intended to measure a person's perceived economic value of a specific brand	Sweeney and Soutar (2001)	0.80-0.91
Satisfaction	Three seven-point Likert-type items intended to measure a person's level of satisfaction with a product's performance	Tsiros and Mittal (2000)	0.95
Attitudinal loyalty	Three five-point Likert-type items intended to measure a person's loyalty in general for a specific brand	Yoo et al. (2000)	0.90
Brand preference	Three five-point Likert-type items intended to measure a person's preference for a specific brand in comparison to a referent brand	Sirgy et al. (1997)	0.72-0.98
Intention to buy	Three seven-point Likert-type items that intended to measure the degree of a person's intention to buy (or try) a specific brand in future.	Putrevu and Lord (1994)	0.91
Behavioural loyalty	Three nine-point Likert-type items intended to measure a person's likelihood to use a specific object again	Cronin et al. (2000)	0.93

This process yielded a pool of measurement items that not only covered the full domain of brand knowledge, OBE and behavioural brand equity (BHE) constructs, but also included items and terminologies that were grounded in the hospital practitioners' and customers' (hospital patients and their relatives) experiences. This initial item generation process yielded a pool of 96 items in total: 9 items for brand recognition, 11 items for brand recall, 13 items for attribute-related brand associations, 16 items for benefits-related brand associations, 11 items for attitude-related brand associations, 9 items for attitudinal loyalty, 6 items for satisfaction, 7 items for brand preference, 8 items for purchase intention and 6 items for behavioural loyalty (see Table 5.2).

5.3.2 Reduction of Items

To reduce the number of items, an expert questionnaire was first used to assess the initial pool of 96 items for face validity and content validity based on the conceptual definition of the constructs (as suggested by Lin and Hsieh, 2011). Each expert judge was given the conceptual definition for constructs and were requested to rate each item for one of the three categories i.e. "not representative", "partially representative" or "fully representative". Only items which were rated as 'fully representative' and 'partially representative' were retained for the next stage (an acceptance level of at least 80 percent).The items representing each construct were included and rest were deleted. The experts were also asked to assess the understandability of items (choice of words, sentence structure, vagueness and comprehensibility). Items considered for deletion were those that were thought not to be representative of the domain, or were considered unclear and/or open to misinterpretations (Babin et al., 1994). In this case, item candidates for deletion were those which had less than 80 percent agreement level for applicability. Items with only understandability issues were revised whenever possible. Some highly redundant items were also eliminated (Arnold & Reynolds, 2003) at this point. The revised list included 76 items in total: 7 items for brand recognition, 7 items for brand recall, 9 items for attribute-related brand associations, 12 items for benefits-related brand associations, 9 items for attitude-related brand associations, 7 items for Attitudinal Loyalty, 6 items for Satisfaction, 7 items for brand preference, 6 items for purchase intention and 6 items for behavioural loyalty (see Table 5.2).

The reduced list of items was reviewed in depth, and further deletions and changes were made after careful evaluation of each item by the primary researchers (Arnold & Reynolds, 2003). The researchers went through an iterative process of discussion and deletion of items so that a manageable number of theoretically necessary items would appear on the questionnaire. Then, in line with Brakus et al. (2009), the remaining items were exposed to 29 management graduates, 2 marketing professors, 2 doctors, and 2 patients (total= 35), who were requested to assess whether these items were able to explain their beliefs, feeling, perceptions, attitudes and behaviour with regard to their hospital brand selection and use. Their responses were gathered on a five-point Likert scale, where 1=highly non-descriptive and 5=highly descriptive. The items whose mean value was greater than 3 and standard deviation was less than 2 were only retained. According to this criterion 22 out of 76 items were deleted, hence the final list of items included a total of 54 items: 5 items for brand recognition, 6 items for brand recall, 6 items for attribute-related brand associations, 9 items for benefits-related brand associations, 7 items for attitude-related brand associations, 6

items for Attitudinal Loyalty, 5 items for Satisfaction, 4 items for brand preference, 3 items for purchase intention and 3 items for behavioural loyalty (see Table 5.2). All items kept in the final questionnaire were worded specifically to relate to the customer-based hospital BE sources and outcomes rather than consumer-based brand equity in general.

Table 5.2 Number of Items per Construct (Prior EFA)

Constructs	Initial	Revised	Final
Brand recognition	9	7	5
Brand recall	11	7	6
Attribute related associations	13	9	6
Benefits related associations	16	12	9
Attitude related associations	11	9	7
Attitudinal Loyalty	9	7	6
Satisfaction	6	6	5
Brand Preference	7	7	4
Intention to purchase	8	6	3
Behavioural loyalty	6	6	3
Total	**96**	**76**	**54**

5.4. MEASURE PURIFICATION

The scale refinement and purification process involved questionnaire design, data collection, pilot testing and data analyses for item reduction using exploratory factor analyses, confirmatory factor analysis, as well as various tests for scale reliability, unidimensionality, and convergent and discriminant validity (Churchill, 1979; Arnold & Reynolds, 2003). The proposed conceptual CBBE framework included two seven exogenous (independent variables) and three endogenous (dependent variables) constructs. Exploratory factor analysis (EFA) was first used to eliminate superfluous items, then a confirmatory factor analysis (CFA) was conducted in AMOS using the maximum likelihood method to test the measurement model. But before that data had to be collected for the above mentioned items through a questionnaire survey. The questionnaire contained item questions that were to be evaluated on a 5-point Likert scale, where 1 meant highly disagreed and 5 meant highly agreed. The following sections provide a detailed description of the above mentioned processes.

5.4.1. Questionnaire Development

The questionnaire comprised of six sections: (1) explanations of key concepts, (2) items related personal brand example, (3) items related to brand knowledge, (4) items related to

respondent's individual response to OBE, (5) items related to respondent's individual response to BHE, and (6) demographics. In addition, three items were included for examining moderation effects that were used in Chapter Six.

The questionnaire consisted of 9 pages and included 91 items/questions in total (included in Appendix-I), and was administered in person (off-line mode). Data collection methods utilizing new electronic technology have been also encouraged (Craig and Douglas, 2001), and survey sites have become an effective means of collecting research data. But, there could be still some concerns regarding the representativeness of such data, as many consumers in India don't yet have access/and or aptitude for online survey. Therefore, the researcher decided to use an off-line mode of data collection, despite cost effectiveness and increasingly popularity for online survey (Ilieva et al., 2002).

Section 1(Introduction): Following the informed consent page, this first section of the questionnaire provided the respondent with explanation of the key concept—the brand, brand equity and hospital. Since section two is designed to elicit customers' response to brands, the goal for this section is to be sure that the respondent understands that: (1) they can consider any type of hospital as brand (branded product, service/retail, etc.), (2) they need to view the brand "as a whole," and (3) they have to consider a single brand while responding to all the items. Inputs for these informational pages were gathered from both the expert panel and from six "real consumers." The expert panel was given a draft of this information and asked for input, specifically regarding clarity of concepts. A revised draft was then reviewed by six non-academics to determine whether the concepts were explained in a way that the average consumer would be able to understand. At this point, the section went through several reviews by the primary researchers to create a concise explanation of the complicated concepts. The final version was example driven, as both the experts and real consumers felt that was important in clarifying the information for the average consumer.

The first two pages in this section clarified what was meant by "brand." In order to prime the respondent to consider any type of brand, they were first told that "a multi-specialty hospital brand can be any type of secondary and tertiary care hospital, where more than one specialization or ailments are treated*"* and was given a list of brands to decide. Finally, in order to prime the respondent to view the brand "as a whole," they were told, "the 'whole' brand may include multiple products, services, and brand representatives". Examples were used to clarify this idea.

The third page consisted of a brief summary of the information presented along with a statement of appreciation for the respondent's effort. Therefore, the goal of this section was to be sure that the respondents would be able to manifest her/his feelings about a multi-specialty hospital brand.

Section 2 (Brand Example): The second section began with an elicitation of the name of a multi-specialty hospital brand for which they would respond (as explained in the first section) and provide a description of their perception and attitude toward brand. Instructions were given to help ensure that the respondent focused on what "typically" happens when dealing with this brand. Follow up questions were used to make sure that a determination could be made as to whether or not the response really represents the customer's manifestations regarding the brand. In addition, the respondent was asked to rate the degree to which they thought their knowledge regarding the brand varied. These scores were used as a means of determining the two groups for the moderation test—high brand knowledge and low brand knowledge.

Section 3 (Brand Knowledge): The third section focused on items related to the respondent's personal response to brand knowledge variables. this sections focuses on items related to brand recognition, brand recall, attribute related associations, benefits related associations, and attitude related associations.

Section 4 (Overall Brand Equity): The fourth section contains items for measuring the three aspects of BE. All the items were worded to include measures for (1) knowledge equity, (2) attitudinal equity, and (3) relationship equity. Therefore, instructions prompted the respondent to answer the questions by keeping a specific brand in mind, and the items were organized according to the ease of flow for the respondent.

Sections 5 (BHE Outcomes): This sections contained items for measuring the outcomes of BE using three aspects: brand perception, intention to purchase and behavioural loyalty. Therefore, items were included in this section that particularly focussed on eliciting customer's individual response to the above mentioned variables.

Section 6 (Demographics): The final section collected general demographic data for sample description, including age, gender, marital status, employment status, educational level, and income. The entire questionnaire was designed in such a way that it would take approximately 10-15 minutes to complete.

5.4.2. Sampling Procedure

The subsequent step after questionnaire design was to identify a sample of respondents for data collection (Churchill, 1979). Sampling plays a vital role in the collection of reliable data as it helps in identifying a subset of population, which is identical in nature and characteristics of the main population. Therefore, it is deemed that reliable data can be obtained through that sample. A sampling procedure in general involves: specifying target population, and determining sample frame and sample size (Malhotra and Dash, 2010). There are several probability and non-probability techniques that can be used to decide a sample (Zikmund and Babin, 2007). The following are the details of the sampling procedure followed for this study.

- **Target Population:** describes the elements of the sample from which/whom the data would be collected (as patients, doctors, and healthcare decision makers comprise the sampling elements in the present study), sampling units-the basis on which the sampling elements can be grouped (e.g., primary hospitals, secondary hospitals and tertiary care hospitals), extent-the scope of data collection (e.g., six major hospital clusters of India) and time frame-the period of data collection (e.g., March 2012 to July 2013) (Malhotra and Dash, 2010). In this research, the elements of the target population are an extended group of customers—patients and healthcare decision makers in the patient's family, as hospitalization decisions in India are either taken in consultation with family doctors or with the suggestion of family, friends and relatives.

- In terms of sampling units, the present study aims to capture the brand perception and brand attitudes of only multi-specialty hospital brand customers, as it provides a range of both inpatient and outpatient care that include even those services which are provided in other types of hospitals (i.e., single specialty hospitals and other primary, secondary and tertiary care hospitals). The extent of the data collection is limited to six major hospital clusters of India (i.e., Delhi & NCR, Mumbai, Kolkata, Hyderabad, Bangalore and Chennai), which cater to patients within city, from nearby towns, and referral patients from other parts of the country and even neighbouring countries (CRISIL Report, 2009). The reasons for considering these six clusters could be justified from the fact that the growth of multi-speciality hospitals in India is mainly concentrated in large cities (CRISIL Report, 2009). The characteristics of Indian hospital industry suggest a seasonal effect on the patient inflow in a hospital.

As discussions with hospital management revealed that the period from June to September is considered as the boom period, while the patient rate is least during months of October-November. Therefore, the time frame for the data collection extended from March, 2012 to July, 2013, which could control the seasonality effect as well.

- **Sampling Frame:** is decided mainly on the basis of various characteristics of the main population. In general, the sample frame in studies on hospital industry can be decided on the basis of industry report, hospital classifications, bed size, hospital accreditation and affiliation, and some kind of internal or external rating or ranking system. In the present case, the sampling frame was decided on the basis of the following three criteria:

  (1) First, the major hospital clusters were decided on the basis of 'Hospital Industry Report 2009' published by CRISIL India Ltd., which publishes profiles of major hospital industry players, city-wise market size in terms of bed capacity, upcoming hospitals in the clusters, and segment-wise bed capacity of single and multi-specialty hospital groups. In absence of any consumer-based hospital rating or ranking system, and variability in the accreditation of Indian hospitals, deciding sampling frame on the basis of city-wise bed capacity could have been one of the rationales.

  (2) Second, a cluster-wise detail of all multi-specialty hospital was obtained as well as randomly verified through data mining (source: http://www.medicards.in). Further, in order to bring this list to a manageable size, hospitals were filtered on the basis of ownership and bed capacity. Thus, private multi-specialty hospitals having a bed capacity not less than 80 were only considered for this study as hospitals less than 80 were very large in number. Further, the rationale for choosing only private hospitals was that both private and government hospitals in India cannot be compared on the basis of infrastructure and consumer experience. Moreover, only private hospitals in India engage themselves in branding activities to a certain level.

Therefore, the final sampling unit consisted of only private multi-specialty hospitals (both secondary and tertiary care). Table 5.3 provides the cluster-wise figure for total number of private multi-specialty hospitals that were considered as the sampling frame of this study.

Table 5.3: Cluster-wise Total Number of Multi-specialty Care Hospitals

Clusters	Secondary Care (No. of Hospitals)	Tertiary Care (No. of Hospitals)	Total
Delhi & NCR	81	49	130
Kolkata	69	27	96
Mumbai	90	45	135
Chennai	78	25	83
Bangalore	62	52	114
Hyderabad	71	41	112
Total	451	219	670

- **Sample Size:** For deciding the sample size, a two-stage sampling process has been adopted. In the first stage, sample size was decided for the sampling units, i.e. the number of private multi-specialty care hospitals that would be considered for data collection in the study. This sample size was done on the basis of a clustering technique where the total sample size comprised of proportionate (10 percent of all hospitals identified in each cluster) sample drawn from each cluster. Based on this method, the sample size was 56 hospitals. The reasons for adopting this technique is that it is easily understandable and projectable (Malhotra and Dash, 2010). In the second stage, the sample size was decided for the sampling elements (i.e., the group of final respondents for the study). Since, customers in the case of present study include hospital patients, doctors, and healthcare decision makers in the family (relatives), which are infinite in number, no probabilistic sampling technique could have been applied for the sample size selection. In this regard, decision regarding appropriate sample size rests upon various qualitative issues: such as importance of decision maker, nature of research, number of variables, nature of analysis, sample size considered in similar studies, completion rates, incidence rates, and resource constraints, etc. (Malhotra and Dash, 2010). In this regard, different researchers apply different thumb rules. According to Hair et al. (1998; 2006) sample size could be in the ratio of 15-20 observations for each of the independent variable. However, a ratio of 5:1 is also acceptable. Further, Comrey and Lee, (1992) suggest that 300 is an adequate sample size, whereas a sample size of 100 is poor and 1000 is excellent. Kass and Tinsley, (1979), prescribe that the sample size of 5-10 respondents per variable with total of 300 responses is appropriate. Further, Nunnally, (1978) also recommend that the number of participants should be ten times the number of measurement items. Similarly, Tabachnick and Fidell, (2001), suggest that the sample size for applying factor analysis should be at least 300 cases. To verify the

internal consistency of the developed scale, a minimum sample size of 100 to 200 respondents is considerable (Spector, 1992). Hair et al. (2006), suggest that studies using Structural Equation Modeling (SEM) should have a sample size be at least 100 to 150. Further, for multiple correlations many researchers supported the sample size formula given by Green (1991). Therefore, in such case, the present study has adopted a benchmark of 10-20 per cent observations for each variable was decided on the basis of judgemental non-probabilistic sampling technique. Further, according to the formula suggested by Thorndike (1978) for sample size in case of principle component analysis (PCA), which is cut-off multiplied by number of variables plus 50. Since there were 10 variables in the proposed model, the sample size for pilot testing was in the range of 160-270, which also complied with the Spectator's (1992) 100-200 minimum sample size norm for internal consistency. Further, for the main study the minimum sample size on the basis of formula for infinite population proposed by (Godden, 2004), it yielded a minimum sample size of 600.14 ≈ 600 for the study. Therefore, the final sample size for study was decided that it should lie between 270-600 respondents.

5.4.3 Data Collection

The data collection procedure and description of the respondent sample is provided in the following sections:

5.4.3.1 Data Collection Procedure

In this study, data was collected separately for the pilot-testing stage and measure purification stage as depicted in Figure 5.2. For pilot-testing, data was collected in line with Brakus et al, (2009); Lin and Hsieh (2011); Froehle and Roth, (2004); Arnold and Reynolds, (2003), in which questionnaire was administered on a student sample (undergraduate and post-graduate students of a reputed institute) in the month of April, 2012. In total, 203 usable responses were gathered over a period of 25 days. But for purification and validation stages, data was collected from the actual customers (an extended group of customers): inpatients and outpatients, and relatives of patients (who were present at the hospital). Since the sampling elements were more than one, a weight-age scheme was applied for the distribution of respondents, in which 60 per cent weight-age was given to the patient and remaining 40 per cent to the relatives of patients. The data collection began in the month of June, 2012, which was based on a hospital-intercept method. The data collection began cluster-wise starting with the Delhi & NCR. In the process of data collection, the questionnaire was

handed overall to the customers, who were chosen on the convenience basis. The criteria adopted for choosing the relatives of patients was based on their involvement in hospital selection. Before handing over the questionnaire, the aim of the study and terms and conditions regarding the privacy of responses was explained to the prospective respondents.

Table 5.4 Description of Respondent Sample

Characteristics	Category	Respondents
Age Group	<21	85
	21-30	192
	31-40	135
	41-50	40
	51-60	23
	>60	9
	No response	2
Gender	Male	219
	Female	259
	No response	8
Education	No Formal Education	9
	< Senior Secondary (10^{th})	11
	Senior Secondary (10^{th})	29
	Higher Senior Secondary (12^{th})	32
	Graduate	197
	Postgraduate	159
	Doctorate (Ph.D.)	29
	Diploma	14
	No response	6
Annual Income	<1,00,000	83
	1,00,001-2,00,000	112
	2,00,001-4,00,000	93
	4,00,001-6, 00, 000	55
	6, 00, 001-10,00,000	83
	>10, 00,000	34
	No response	26
Type of Patient	Outpatient	293
	Inpatient	189
	No response	4
Disease Perception	Life threatening	213
	Non-life threatening	193
	No idea	67
	No response	13
Payment Borne	Self	209
	Insurance company	83
	Employer	187
	Partially self and partially others*	7

*Others include employer, charity, TPA, etc.
Note: Figures in parentheses show the percentages of the total number of respondents

After getting back the filled in questionnaire, a quick review was done by the researcher for missing information and the same respondent was requested to furnish the missing information (if any). The questionnaire was administered during different working hours of the day and all seven days of the week from Monday to Friday, in which the researcher visited only one hospital each day. With the aim to achieving 100 percent response rate, the researcher waited at the hospital premise until the target number of responses were collected.

On an average, the target number of responses was met by visiting one hospital for at least 2-3 days. The aim of the present study was to gather responses from all groups of customer i.e. local patients, referral patients from rural and semi-urban areas, and patients from neighbouring countries as well (if there were any). Since all respondents were not comfortable with English version of the questionnaire, assistance was provided to them by the researchers in Hindi and local languages (if possible). Both male and female respondents of different age groups participated in the survey. The validation of the proposed scale was done in Chapter 6, for which no separate data was collected due to time and monetary constraints.

5.4.3.2. Description of Response Sample

A total of 491 surveys were completed, out of which 5 responses were unusable. A review of the demographic variables (see Table 5.4) reveals that there was more number of female than male respondents. The vast majority of the respondents are young (between 21-30 years of age) and many of them have completed at least two years of college (above +2). Although the majority of respondents were patients (63% including both inpatient and outpatient), there was quite a bit of variability within the sample with regard to the other type of respondents, i.e. relatives of patients (20%) and close acquaintances--friends (17%). Therefore, the results of the study could be mainly generalized from the point of view of patients.

5.4.4. Item Reduction and Construct Specification

The goal of this process was scale purification by reducing those items which were not reliable for measuring each of the proposed constructs. Therefore, this phase involved pilot-testing of questionnaire, and item purification stages. For pilot testing, a questionnaire of 91 items was administered, which included 51 items on a 5-point Likert scale. In line with Brakus et al., (2009); Lin and Hsieh (2011); Froehle and Roth, (2004); Arnould and Reynolds, (2003), data was collected from a sample of 203 graduate and post graduate students from a reputed institution. The sample size for pilot testing was similar to the

sample size taken in other similar scale development studies (e.g. Parasuraman et al., 1988; Karatepe et al., 2005: Webster, 1990). A review of demographic variables of the pilot sample revealed that there were 63 percent male and 37 percent female. The vast majority of the respondents were young (98% between 18-30 years of age), and unmarried (82.5%), full-time students (100%), and had completed at least two years of college (47%). As suggested by Churchill (1979) and others, the pilot data was analyzed through EFA and item analysis. EFA tests were run for each exogenous and endogenous constructs. The following sections provide a description of the procedures that were followed. Based on the pilot study results, 8 items were deleted and the questionnaire was further modified accordingly. Then, data for the measurement model was collected for the remaining 43 items, which yielded a total of 486 usable responses (see Table 5.4).

5.4.4.1 Item Analysis

The first step toward item purification process was analysis of individual items based on computation of coefficient alpha i.e. Cronbach alpha (Cronbach, 1951), which suggests the uni-dimensionality or the strength of a construct. For all brand knowledge and BHE constructs, the coefficient alpha ranged from 0.67 to 0.85, which was above the 0.3 benchmark. But the minimum value for Cronbach's alpha that is generally accepted is 0.7 and above (Nunnally, 1978). Therefore, in order to improve the alpha value, corrections in the item-to-total correlation for each construct were computed. These corrections were done for the items having very low correlations and/or items which produced sharp decline in the item-to-total correlations after correction and/or items whose removal improved the alpha value, and therefore those items were deleted. These corrections were made in an iterative process, which resulted in the deletion of some items from the constructs. Finally, the improved alpha values for all brand knowledge and BHE constructs ranged from 0.75 to 0.88. The Cronbach's alpha values for the underlying constructs were (see Appendix-III): brand recognition (0.88); brand recall (0.81); attribute associations (0.85); benefits associations (0.85); attitude associations (0.77); attitudinal loyalty (0.79); satisfaction (0.82); brand preference (0.82); intention to purchase (0.76), and behavioural loyalty (0.83).

5.4.4.2 Exploratory Factor Analysis

After item analysis, the next step was to explore the factor structure. For this the remaining 47 items were exposed to Exploratory Factor Analysis (EFA). The purpose of EFA is to determine wherever the researcher is uncertain about the linkages between the latent and the observed variables. For this analysis, Principal Component Analysis (PCA) method and

Varimax rotation is generally used for extracting the factors (Costello and Osborne, 2005; Prasad et al., 2010), which in the case of present study was done in SPSS. Since item reduction was the primary motive behind this process (Costello and Osborne, 2005), items with low factor loadings (<0.50) (Karatepe et al., 2005), high cross loadings (>0.40) or low communalities (<0.30) were considered as items for deletion (Hair et al., 1998). At this point, we used Bartlett's test for the analysis of variance.

In order to reduce the set of items for each construct, separate EFA tests were run for each of the brand knowledge, RE and BHE constructs. EFA was not mandatory as their factor structure was already clear. For brand recognition, four items explained 59.2% of variance (MSA=.887, Bartlett's test significant <.001 level), with all communalities over .4 on a single factor. For brand recall, five items explained 72.8% of variance (MSA=.866, Bartlett's test significant <.001 level), with all communalities over .5 on a single factor. For attribute associations, five items explained 76.4% of variance (MSA=.809, Bartlett's test significant >.001 level), with all communalities over .5 on a single factor. For benefits associations, seven items explained 52.6% of variance (MSA=.757, Bartlett's test significant <.001 level), with all communalities over .5 on a single factor. For attitude associations, five items explained 77.5% of variance (MSA=.825, Bartlett's test significant <.001 level), with all communalities over .4 on a single factor.

Table 5.5. Items retained after EFA

Construct	No. of items	Variance Explained
Scale Dimensions (exogenous):		
Knowledge equity		
Brand recognition	4	59.2%
Brand recall	5	72.8%
Attitudinal equity		
Attribute related associations	5	76.4%
Benefits related associations	7	52.6%
Attitude related associations	5	77.5%
Relationship equity (RE)		
Attitudinal Loyalty	4	72.2%
Satisfaction	3	59.2%
BHE Constructs (endogenous):		
Brand Perception	4	79.9%
Intention to Purchase	3	59.2%
Behavioural Loyalty	3	51.9%

For attitudinal loyalty, four items explained 72.2% of variance (MSA=.751, Bartlett's test significant <.001 level), with all communalities over .5 on a single factor. For satisfaction, three items explained 59.2% of variance (MSA=.821, Bartlett's test significant <.001 level), with all communalities over .5 on a single factor. For brand perception, four items explained 79.9% variance MSA=.711, Bartlett's test significant <.001 level), with all communalities over .4 on a single factor. For intention to purchase, three items explained 59.2% of variance (MSA=.851, Bartlett's test significant <.001 level), with all communalities over .39 for a single factor. For behavioural loyalty, three items explained 51.9% of variance (MSA=.722, Bartlett's test significant <.001 level), with all communalities over .4 on a single factor. The above mentioned results of EFA are mentioned in Table 5.5.

Further, these tests were seconded by the Kaiser-Meyer-Olkin (KMO) statistic for sampling adequacy which yielded a KMO value of 0.83 surpassing the minimum benchmark of 0.60 for sample adequacy (Tabachnick and Fidell, 2001). During EFA, 8 items were dropped after a close inspection, as they could not fulfil the minimum cut off criteria. Therefore, after the exploratory factor analysis and item analysis using Cronbach's Alpha, seven exogenous constructs were introduced to a confirmatory factor analysis for the development of first and second order measurement model.

5.4.5. Measurement Model

After EFA, the next step in the item purification process was the development of a measurement model. This measure purification process relies on "iteration of confirmatory factor analyses, where the goal is to improve the congeneric measurement properties of the scale" (Arnold & Reynolds, 2003, p. 83). So, Confirmatory Factor Analyses (CFA) was performed on the remaining items (Marsh, and Hocevar, 1985). CFA is a special case of Structural Equation Modelng (SEM), which is also known as linear structural relationship model (Joreskog and Sorbom, 2004) or covariance structure model (McDonald, 1978). It applies a multivariate technique to understand the structure of latent variables.

Since improvement in the psychometric properties of the scale depends on the iteration of items, (Bagozzi, 1980; Anderson and Gerbing, 1988; Arnould and Reynolds, 2003), a 33-item 7 construct (excluding the BHE constructs) confirmatory factor model was submitted to first order CFA in AMOS (see Figure 5.3). However, the initial indices for the first order model (x^2=2625.179 (p=.000), CFI=0839, RMSEA=0.085, RMR=0.206) did not meet the acceptable levels of fit indices, so relevant results (e.g. standardized loadings, presence of negative error terms, unacceptable standardized residuals, and high modification indices)

were examined, and problematic items were identified and removed in an iterative process, which resulted in achieving acceptable levels of model fit (see Table 5.6). Then, three second order OBE constructs were introduced-KE, AE and RE, where brand recognition and recall led to KE, attribute associations, benefits associations and attitude associations led to AE, and attitudinal loyalty and satisfaction led to RE. The above mentioned framework is consistent with the literature (e.g. Tolba and Hassan, 2008) as discussed in the earlier sections of this chapter. The results of the second order CFA is also reported in Table 5.6.

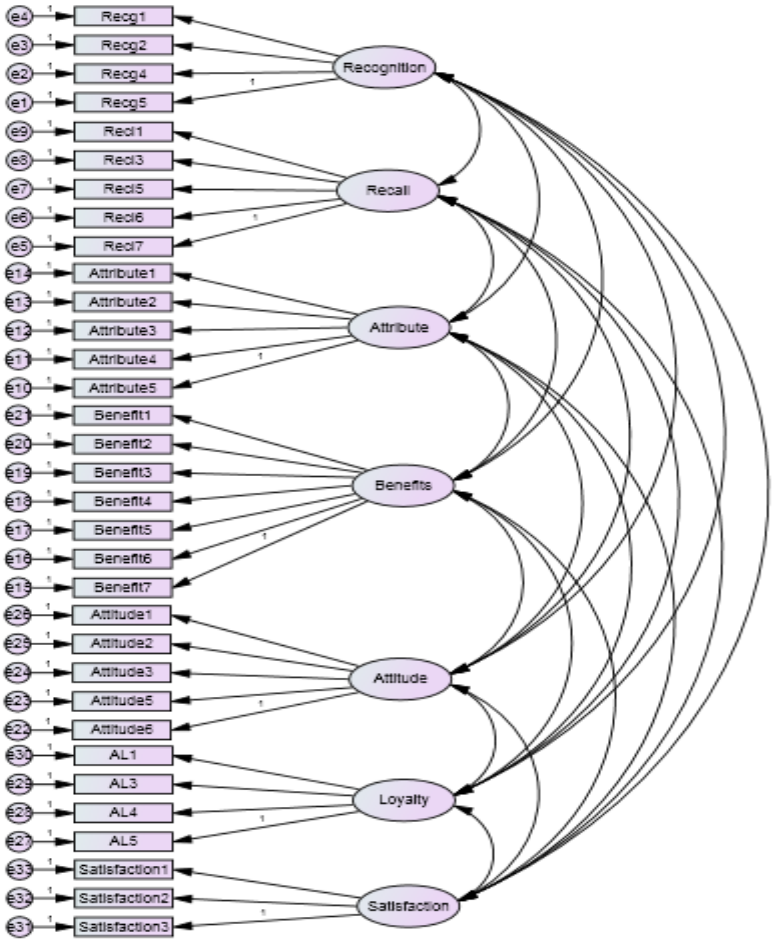

Figure 5.3. First Order 33 item Confirmatory Factor Model

The final model consisting of 21 items (excluding 9 items for the three BHE constructs) representing seven constructs had acceptable fit indices, and showed improvement over the initial CFA. Table 5.6 reports the fit indices for the initial and final CFA results for the first order model. The final CFA results for the second order model indicate acceptable model fit with the data (x^2=892.405 (p=.000), CFI=0.982, RMSEA=0.022, RMR=0.055). The chi-square was significant, which is usually common with very large sample size data like the present one (Bollen, 1989). The ratio of chi-square to degrees of freedom was much below the recommended acceptable range (2-5) and the root mean square error of approximation

(RMSEA) was below the 0.08 threshold, which indicated that the model had an overall good fit.

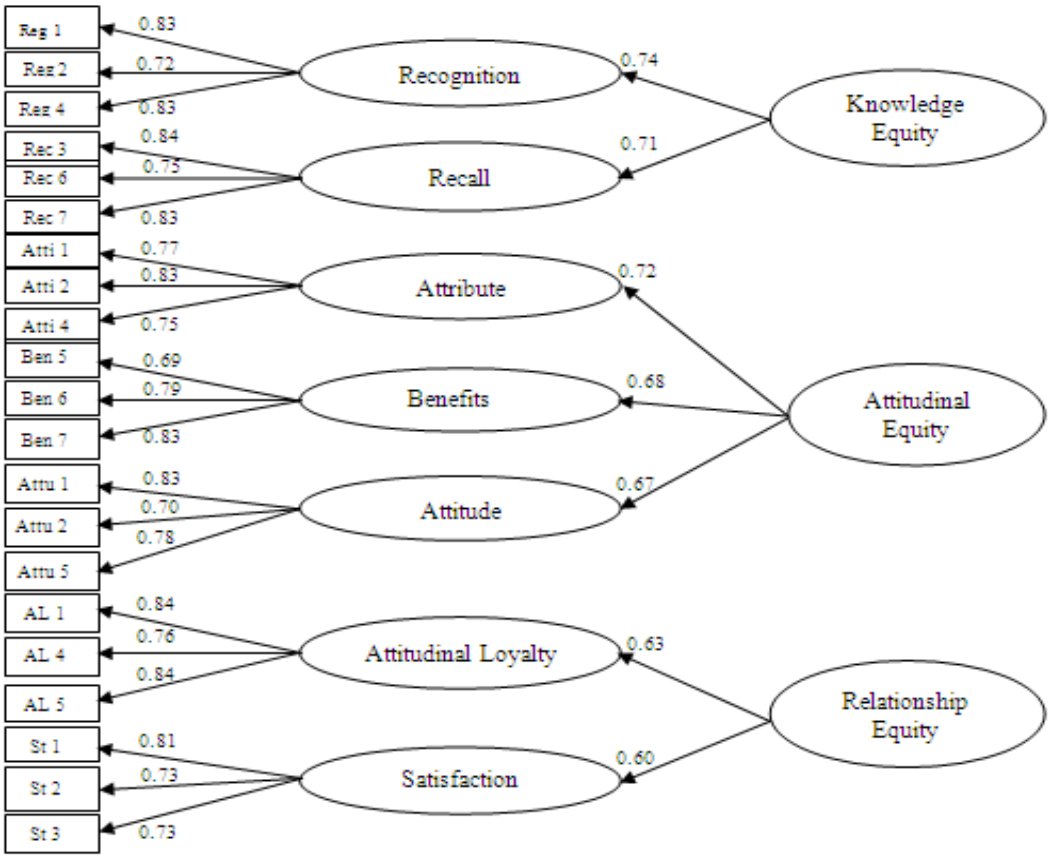

Figure 5.4. CFA Standard Coefficients for Second Order Model

Table 5.6 Measurement Model (CFA) Fit Indices

	x^2	df	x^2/df	CFI	RMSEA	RMR
(First Order Model)						
Initial CFA	2625.179	704	3.729	.839	.085	.206
Final CFA	1020.783	498	2.050	0.986	.031	.035
(Second Order Model)						
Final CFA	892.405	764	1.168	.982	.022	.055

5.4.6 Scale Reliability and Validity Assessment

It is recommended that each item should reflect one and only one underlying construct, and loadings and item-to-total correlations should meet acceptable levels (Arnold & Reynolds, 2003). Unidimensionality and convergent validity of each construct was supported by their acceptable loadings (all above .60) and paths of all items to their respective hypothesized construct were significant (p<.000). In addition, the modification indices did not suggest any substantial cross-loadings between constructs. Reliability was assessed by computing the

average variance extracted (AVE) and composite reliability for each construct, in which all constructs passed the thresholds (AVE >= 0.50; composite reliability >= 0.70) (Table 5.7, 5.8 and 5.9). Discriminant validity was assessed by comparing the AVE of each construct to that pair's squared correlation, where the variance extracted estimates exceeded squared phi correlations between the constructs (Arnold & Reynolds, 2003) (see Appendix-III for the correlation matrix). This shows that each construct explains a greater amount of variance than the variance between constructs (Hair et al. 2010). All construct pairs passed this test, showing strong evidence of discriminant validity.

Table 5.7 Model Properties and Standardized Loadings

Construct and Final Items	**Standardized loadings**	**AVE**	**C.R.**
Brand Recognition		**.667**	**.806**
X is a popular brand in healthcare	**.827**		
I can recognize X among all other hospital brands	**.719**		
I am familiar with the services provided at X	**.831**		
Brand Recall		**.640**	**.774**
Whenever I have health problems, some characteristics of X come to my mind quickly	**.838**		
I can recall how hospital X looks like	**.751**		
I know many people who use X	**.829**		
Attribute related brand associations		**.653**	**.904**
X delivers treatment with the help of latest technology	**.767**		
X has tie-ups with many good foreign hospital	**.833**		
X has many good doctors and well-behaved nursing staff	**.750**		
Benefits related brand associations		**.654**	**.904**
X goes with my social status	**.692**		
Treatment provided by X is much useful than most other hospitals in town	**.795**		
X offers services that are good value for money	**.834**		
Attitude related brand associations		**.794**	**.920**
X is devoted to public service	**.826**		
My experiences with X has been good	**.699**		
I will go to hospital X in the future	**.781**		
Attitudinal Loyalty		**.847**	**.943**
X offers consistent and reliable service	**.844**		
I would prefer X, even if other hospitals are seemingly similar	**.763**		
In case of health problems, I will prefer to go to X	**.842**		
Satisfaction		**.675**	**.861**
I will go to hospital X in the future	**.811**		
I am satisfied with the services provided by X	**.732**		
I encourage/recommend others to try X	**.729**		

5.5. CONCLUSIONS

The present chapter has dealt with the development of a measurement instrument for customer-based hospital brand equity measurement. Based on the procedures suggested by earlier researchers, the development of the present scale began with the item generation, for

which a total of 96 items were identified for the underlying constructs. Through expert review--expert panel questionnaire and researcher discussion, the exploratory factor analyses, and the confirmatory factor analysis, the items were refined to contain it to a theoretically consistent set of 21 items, which included seven underlying constructs. Besides items for the three BHE outcomes (three each for: brand preference, intention to purchase, and behavioural) were also assessed, that were used for the structural model. The scale developed in this chapter is further applied for examining the relationships between brand knowledge and BHE constructs in the next chapter. Thus, the next chapter can also be considered as a validation of the present scale.

Chapter 6

MODELLING CUSTOMER-BASED HBE

After the fulfilment of objective one of the study in Chapter Five, i.e., the development of an instrument for measuring customer-based hospital brand equity, the present chapter aims at achieving objective two—examining relationships between customer-based HBE constructs, and objective three—examining variations in the HBE model based on levels of customer brand knowledge. The present chapter provides a brief overview of procedures and results of modelling and moderation analysis. In the subsequent sections of this chapter, the proposed structural model and hypotheses are presented for modelling and the basis of multi-group analysis have been discussed for moderation analysis.

6. INTRODUCTION

In the last two decades, there has been a steady supply of measures and models of brand equity and brand performance (de Chernatony et al., 1998), which has resulted in the alleviation of status of brand equity from a general management principle to top management priority (Jourdan, 2002; Clark, 1999). However, it has been realized that apart from consumer characteristics, the BE of a brand is influenced by several internal and external factors. The internal factors include: firms' market plan, profitability, efficiency and strategy (Kotler, 2003), level of difficulty in evaluating marketing results (Eisenhardt, 1985), organizational culture (Eisenhardt, 1988), and market orientation of the firm (Narver and Slater, 1990) and the external factors include: social, economic, cultural, legal and environmental complexities, which surreptitiously influence the customers' perceptions, attitudes and behavior in different market condition, culture, etc. The relationships between CBBE constructs and behavioral brand equity outcomes that occur in developed countries are likely to obscure in emerging markets, multi-ethnic culture, etc. Therefore, the present study aims at examining the relationships between brand knowledge (BE sources) and behavioral brand equity (BHE) outcomes in the context of hospital industry in an emerging market and multi-ethnic culture like India.

Further, it has been also found during the course of literature review that the current models of BE do not give much consideration to industry related factors--drivers of brand value in a particular industry (Kartono and Rao, 2008). Past experiences suggest (e.g., Hsu et al., 2012), that there is no logical reason to give equal importance to all brand equity categories, and suggest a less arbitrary method of indicator selection, depending on the relative

importance of an individual indictor in a given industry. Therefore, despite BE being successful in espousing increased academia and practitioner interests, limited information is available with regard to the measurement and management of CBBE in services (Boo et al., 2009; Brodie et al., 2009), particularly in the case of hospital services (Kim et al., 2008; Harvey and Jerome, 1995). Considering the limitations in the understanding of relationships between brand knowledge, and BHE constructs in the case of hospital services, the present study aims at examining these relationships in context of hospital industry in the Indian healthcare setup.

Literature review in Chapter Two suggests that there is a great deal of inconsistency involved with regard to the measurement of CBBE sources and outcomes (Christodoulides and de Chernatony, 2010). Apart from brand awareness and brand associations, most of the other dimensions of BE (i.e., perceived quality and brand loyalty) were found inconclusive. Although, Aaker (1991, 1996) and several others have considered perceived quality as a constituent dimension of BE, yet Keller (1993) did not include perceived quality as a construct in his conceptual framework that directly influences CBBE. This has brought an atmosphere of inherent ambiguity with regard to perceived quality and its relationship with brand equity. Most service-oriented BE researchers have also not considered perceived quality as a component of BE (e.g. Bauer et al., 2008; Berry, 2000; Ross, 2006; Ross et al., 2006) unlike the goods dominated brand equity models which consider perceived quality as a primary construct of BE (e.g. Yoo et al., 2001; Yoo and Donthu, 2000; Pappu et al., 2005). Further, brand loyalty as a source or outcome of BE is highly debatable in the literature. While some scholars (e.g. Aaker, 1991; Pappu et al., 2005; Gladden and Funk, 2001; Yoo et al., 2001; Bauer et al., 2008) consider it as a source of brand equity, (Keller, 1993) and others (e.g. Ross, 2006) considers it as a potential outcome. Keller (1993) believes that only brand awareness and brand association are directly related to brand equity.

Kotler (1991), Webster (1992) and many others have posited that loyal customers are valuable firm assets and good ambassadors of a brand, and therefore, cherishing social bonding with them could be highly profitable to brands (Hess et al., 2011; Gummeson, 2002; Gronroos, 1997). But now-a-days, it is extremely intricate for firms to maintain such loyalty solely on the basis of transactional activities, as customers are now more empowered to seek relational and co-creational benefits from brands (Jahn and Kunz, 2012; Kazinets et al., 2010; Libai et al., 2010; Henning-Thurau et al., 2010; Deighton and Kornfeld, 2009). Therefore, the idea of BE in the present research goes beyond the attitudinal and behavioral loyalty (Chaudhuri and Holbrook, 2001; Fournier, 1998; Fournier and Yao, 1997) that

requires the creation of social bond between the customer and the brand. But the current literature does not fully acknowledge this view point. As a result, the present study aims to examine the relational outcomes of BE as a separate entity (by breaking OBE into knowledge equity, attitudinal equity and relationship equity).

6.1. PROPOSED STRUCTURAL MODEL AND HYPOTHESES

The proposed structural CBBE model focuses on the relationships between the brand knowledge constructs and overall brand equity (OBE) constructs, and further between OBE constructs and Behavioural Equity (BHE) constructs. Based on the literature review, the proposed model comprises of two brand knowledge dimensions: Brand Awareness (Brand Recognition, Brand Recall) and Brand Associations (Attribute related Associations, Benefits related Associations, Attitude related Associations) as components of knowledge equity and relationship equity respectively. Besides, attitudinal loyalty and satisfaction have been taken as components of relationship equity (Tolba and Hassan, 2008). Table 6.1 highlights on the literature support for relationships between various model constructs. The Figure 6.1 illustrates that brand recognition, brand recall, brand associations—attribute related, benefit related and attitude related, attitudinal loyalty and satisfaction as the primary sources of brand equity. Further, these primary sources (or first order constructs) lead to the three OBE constructs (Knowledge Equity, Attitudinal Equity and Relationship Equity). consequently, the model examines the direct outcomes of OBE and indirect outcomes of brand knowledge using three BHE constructs (Brand Preference, Intention to purchase and Behavioural Loyalty). The proposed model assumes the following relationships between variables:

$$\textbf{Brand Knowledge (BK)} = f\ \textbf{(BA, BS)} \quad (1)$$

Where, BA = f (Recognition, Recall) and BS = f (Attributes, Benefits, Attitudes)

$$\textbf{Overall Brand Equity (OBE)} = f\ \textbf{(KE, AE, RE)} \quad (2)$$

Where, Knowledge Equity (KE) = f (Brand Recognition, Brand Recall); Attitudinal Equity (AE) = f (Attribute Association, Benefit Association, Attitude Association), Relationship Equity (RE) = f (Attitudinal Loyalty, Brand Satisfaction)

$$\textbf{Behavioural BE (BHE) Outcomes} = f\ \textbf{(Preference, Intention to Purchase, Behavioural Loyalty)} \quad (3)$$

The model assumes four control variables: market, brand usage, attitude toward firm, and country-of-origin of the brand. Table 6.1 illustrates the literature support for the model constructs. The structural model is illustrated in Figure 6.1.

Table 6.1 Literature Support for the Model Constructs

Construct		Literature Support
Brand Knowledge	Brand Awareness	Chattopadhyay et al. (2010); Ha et al. (2010); Tong & Hawley (2009); Buil et al. (2008); Pappu et al. (2005);Washburn & Plank (2002); Yoo & Donthu (2001); Keller (1993); Aaker (1991)
	Brand Associations	Tong & Hawley (2009); Buil et al. (2008); Anselmsson et al. (2007); Kocak et al. (2007); Pappu et al. (2005); Washburn & Plank (2002); Yoo & Donthu (2001); Keller (1993); Aaker (1991)
Knowledge Equity	Brand Awareness and Familiarity	Kim and Kim (2004); Balduf et al. (2003); Keller and Lehmann (2003); Washburn and Plank (2002); Mackay (2001); Yoo et al. (2000); Yoo and Donthu (1997); Agarwal and Rao (1996); Keller (1993); Aaker (1991, 1996); Lavidge (1961)
Attitudinal Equity	Perceived Quality	Chattopadhyay et al. (2010); Ha et al. (2010); Tong & Hawley (2009); Buil et al. (2008); Pappu et al. (2005); Kim and Kim (2004); Balduf et al. (2003); Washburn and Plank (2002); Chaudhuri and Holbrook (2001); Yoo et al. (2000); Chadhuri (1999); Yoo and Donthu (1997); Lassar et al. (1995); Aaker (1991, 1996)
	Perceived Value	Rajasekar & Nalina (2008); Netemeyer et al. (2004); Mackay (2001); Agarwal and Rao (1996); Aaker (1996);); Lassar et al. (1995)
	Attitudinal Loyalty	Kim and Kim (2004); Balduf et al. (2003); Washburn and Plank (2002); Chaudhuri and Holbrook (2001); Yoo et al. (2000); Chadhuri (1999); Yoo and Donthu (1997); Lassar et al. (1995); Aaker (1991, 1996)
Relationship Equity	Intention to Interact	Reynolds and Beatty (1999)
	Intention to spread WOM	Carroll and Ahuvia (2006)
	Brand Satisfaction	Ha et al. (2010); Kim et al. (2008); de Chernatony et al. (2004); Aaker (1996)
Behavioural Equity	Brand Preference	Mackay (2001); Agarwal and Rao (1996); Keller (1993); Lavidge (1961)
	Intention to Purchase	Balduf et al. (2003); Fairlock et al. (2001); Mackay (2001); Agarwal and Rao (1996); Keller (1993); Lavidge (1961)
	Behavioural Loyalty	Chaudhuri and Holbrook (2001); Lavidge (1961)
Control Variables	Attitude toward firm	Chaudhuri and Holbrook (2001); Aaker (1996); Lassar et al. (1995)
	Country-of-origin	Cervino et al. (2005); Lin and Kao (2004)

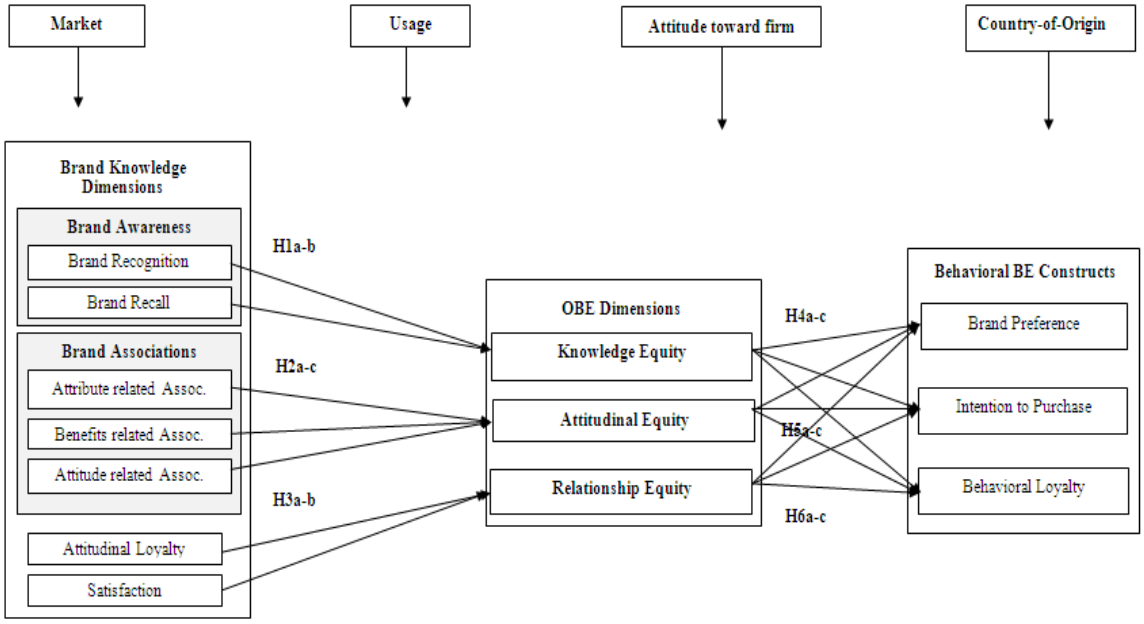

Figure 6.1. Structural Model and Hypotheses

The proposed model links the brand knowledge constructs (brand awareness and brand associations) to the OBE constructs (Knowledge equity, attitudinal equity) and two affective dimensions—attitudinal loyalty and satisfaction to relationship equity. Then, OBE constructs are further linked to BHE constructs (brand preference, intention to purchase, and behavioural loyalty). Table 6.2 illustrates literature support for the aforementioned relationships. Based on the Keller's (1993) conceptualization of BE, brand knowledge is the primary source of CBBE. Further, the present model can be explained with the help of the hierarchy-of-effects (HOE) model, an advertising effectiveness model developed by Robert Lavidge in 1961, which suggests three consumer hierarchy stages--cognitive, affective and conative (behavioural) stages for understanding the effect of marketing. However, Poctzer (1987) argues that the consumers do not necessarily follow all the steps of the hierarchy; rather it may follow a random fashion. Therefore, Vakratsas and Ambler (1999) suggest grouping of consumers on the basis of their movement on these hierarchical steps. So, in the present study, the OBE was split into three dimensions (KE, AE and RE) based on the HOE model, and the brand knowledge constructs (brand awareness and brand associations) are expected to have a direct and positive effect on the three OBE dimensions: KE, AE and RE. The eight major hypotheses in this regard are:

Hypothesis 1a: Brand Recognition positively affects KE at the individual level (H1a).

Hypothesis 1b: Brand Recall positively affects KE at the individual level (H1b).

Hypothesis 2a: Attribute related brand associations positively affect AE at the individual level.

Hypothesis 2b: Benefits related brand associations positively affect AE at the individual level.

Hypothesis 2c: Attitude related brand associations positively affect AE at the individual level.

Hypothesis 3a: Attitudinal loyalty positively affects RE at the individual level.

Hypothesis 3b: Satisfaction positively affects RE at the individual level.

Further several studies in the literature have supported relationships between CBBE and brand preference (Cobb-Walgren et al. 1995; Agarwal and Rao, 1996), intention to purchase (Cobb-Walgren et al. 1995; Agarwal and Rao, 1996; Meyers, 2003) and behavioural loyalty (Morgan, 2000; Chaudhuri and Holbrook, 2001). Therefore, OBE constructs are expected to be a direct and positive driver of BHE constructs (brand preference, intention to purchase, and behavioural loyalty). The hypotheses in this regard are:

Hypothesis 4a-c: KE positively affects brand perception, intention to purchase and behavioural loyalty.

Hypothesis 5a-c: AE positively affects brand perception, intention to purchase and behavioural loyalty.

Hypothesis 6a-c: RE positively affects brand perception, intention to purchase and behavioural loyalty.

Table 6.2 Literature Supporting BE Relationships

Relationships	Literature Support
Brand Awareness with OBE constructs	Wang et al. (2011); Chattopadhyay et al. (2010); Hedhli & Chebat (2009); Keller (1993); Aaker (1991, 1996)
Brand Associations with OBE constructs	Wang et al. (2011); Chattopadhyay et al. (2010); Hedhli & Chebat (2009); Yu et al. (2008); Keller (1993); Aaker (1991, 1996)
KE with BHE Constructs	Chen & Tseng (2010); Mackay (2001); Vakratsas and Ambler (1999); Agarwal and Rao (1996)
AE with BHE Constructs	Mackay (2001); Vakratsas and Ambler (1999); Agarwal and Rao (1996)
RE with BHE constructs	Cobb-Walgren et al (1995); Vakratsas and Ambler (1999)

Among the control variables that were assumed for this model, market (primary care, secondary care, and tertiary care—based on ailments treated and nature of services rendered), attitude toward firm and country-of-origin (COO), in the case of co-branding and

foreign tie-ups, could be directly added to the model. But, 'brand usage' is not directly deductible into the model, as the model constructs for three of its categories (never used, first time user/just tried, and regular users) might vary significantly. For example, customers who have never used/first time users/or are about to try the brand might have some knowledge, attitude, preference, and intention to purchase, but they might not have attitudinal loyalty, satisfaction, intention to spread WOM, or behavioural loyalty as such. In this regard the researcher could foresee two solutions, i.e. either to construct different models for the three user categories, or examine the moderating effect of levels of brand knowledge on the model (see Objective Three—moderation analysis), as customers' level of brand knowledge in the three categories could vary greatly (Vakratsas and Ambler, 1999).

6.2. MODELLING RESULTS

A thirteen-construct structural equation model (SEM) was estimated in AMOS. The overall model fit was in acceptable range (x^2=164.560 (p=.000), x^2/df=1.383, CFI=0.977, RMSEA=0.033, RMR=0.054). The chi-square test for the model was significant—which is very commonly seen in the case of studies having large sample sizes (Bollen, 1989). The ratio of chi-square to degrees of freedom was also in the acceptable range, and the root mean square error of approximation (RMSEA) was below the 0.08 threshold limit, which indicated a good overall model fit (Table 6.3). The comparative fit index (CFI) was also above the traditional .90 cut-off point (.977), however with more complex models it is likely that the CFI drops below the acceptable level to some extent (Hair et al. 2010). All hypothesized paths from brand knowledge dimensions (brand awareness and brand associations) and relational dimensions (attitudinal loyalty and satisfaction) were significant ($p<0.005$). However, their impacts did vary. The results seen in the case of above relationships suggest that brand knowledge, attitudinal loyalty and satisfaction are required in order to generate overall brand equity (knowledge equity, attitudinal equity and relationship equity). This information could be also aligned with the findings of earlier research by partially supporting the BVC model and HOE model, which suggest that the consumers move through the different stages before making a final purchase decision. Tables 6.4 and 6.5 shows the standardized structural path loadings, and hypotheses supported.

Table 6.3 Structural Model Fit Indices

	x^2	**df**	**X^2/df**	**CFI**	**RMSEA**	**RMR**
Hypothesized Model	164.560	119	1.383	.977	.033	.054

Effect of Brand Knowledge on the OBE Dimensions

As discussed previously, brand knowledge (Brand Awareness and Brand Associations) was expected to have a direct and positive impact on the second order OBE dimensions (Knowledge Equity, Attitudinal Equity and Relationship Equity). The assumption about the above mentioned relationships were based on the literature review, where the previous studies (e.g. Lavidge ,1961; Tolba and Hassan, 2008; Keller and Lehmann, 2003) support that brand awareness (brand recognition and brand recall) and brand associations are needed in order to develop knowledge equity, attitudinal equity, and relationship equity. Some researchers (e.g. Tolba and Hassan, 2008; Reynolds and Beatty, 1999) have also suggested that constructs like attitudinal loyalty, customer-brand interaction, trust and satisfaction lead to relational outcomes of brand equity.

Since knowledge equity, attitudinal equity and relationship equity were higher order constructs, positive relationship was hypothesized with their respective lower order constructs. While all other hypotheses were accepted, they varied in their influence (see table 6.4 for standardized path loadings). Although, brand recognition and brand recall are both important, recognition was found to be more important in comparison to recall in creating knowledge equity. Similarly among the three types of brand associations, benefit association has more influence in generating attitudinal equity than the other two types of associations. In a similar comparison, satisfaction plays a more important role in developing relationships with the customer.

Table 6.4 Effects of Brand Awareness on OBE Dimensions

Hypo.	Antecedent	Outcome	Loading	Sig.	Hyp. Supported?
H1a	Brand Recognition	KE	.314	.000	Yes
H1b	Brand Recall	KE	.241	.000	Yes
H2a	Attribute Association	AE	.187	.000	Yes
H2b	Benefit Association	AE	.859	.000	Yes
H2c	Attitude Association	AE	.455	.000	Yes
H3a	Attitudinal Loyalty	RE	.327	.000	Yes
H3b	Satisfaction	RE	.235	.000	Yes

All three brand associations had a significant impact on attitudinal dimension. However their effects varied, were the benefits related associations clearly emerging as the strongest driver with a standardized loading of .859. But one interesting finding was observed in this regard, while attribute related associations had a smaller but significant impact on AE, but it had *negative* impact on brand perception, thus H5a was supported but in opposite direction.

However, AE significantly predicted intention to purchase and but not behavioural loyalty (supporting H5b and rejecting H5c).

The Outcomes of OBE dimensions on BHE Constructs

All paths from the OBE dimensions to the BHE (brand preference, intention to purchase, and behavioural loyalty) variables varied significantly. The purpose of including the BHE variables at this stage was to show support that OBE does lead to positive customer-based brand equity outcomes. Knowledge equity has a significant impact on the consumer's brand preference (H4a), their intention to purchase the brand (H4b), but in the negative direction. This suggests that in order to generate brand perception and intention to purchase, the burden of creating brand knowledge lies on the firm. However, the relationship between KE and behavioural loyalty was not supported (H4c was rejected).

Table 6.5 Effects of OBE Dimensions on BHE constructs

Hypo.	Antecedent	Outcome	Loading	Sig.	Hyp. Supported?
H4a	KE	Brand Preference	-.312	.000	No-opp*
H4b	KE	Intention to Purchase	-.412	.000	No-opp*
H4c	KE	Behavioural Loyalty	.029	.008	
H5a	AE	Brand Preference	-.153	.000	No-opp*
H5b	AE	Intention to Purchase	.116	.000	Yes
H5c	AE	Behavioural Loyalty	.010	.009	
H6a	RE	Brand Preference	.259	.000	Yes
H6b	RE	Intention to Purchase	238	.002	Yes
H6c	RE	Behavioural Loyalty	.319	.001	Yes

Similarly, the path from AE to purchase intention and brand perception was significant. However, the relationship between AE and brand perception was supported but in the opposite direction. The path from AE to behavioural loyalty was rejected. This suggests that mere attitude may not lead to repetitive buying behaviour. The relationship between RE to brand perception, intention and behaviour was significant.

6.3. MODERATION ANALYSIS

As earlier discussed, the effect of brand knowledge on OBE and BHE may significantly vary in the three brand usage categories (never used, first time user/just tried, and regular users), particularly due to differences in the levels of consumers' brand knowledge. To help develop a more comprehensive understanding of the brand knowledge effect on CBBE, differences

between levels of customer brand knowledge will be considered for the three usage categories. First, a preliminary analysis of variance (ANOVA) test is used to support the presence of significant differences in the usage, and dimension scores based on the levels of customers' brand knowledge.

Next, the groups are specified for the moderation analysis based on level of knowledge/or usage. Finally, the multiple-group analysis is conducted in AMOS focusing on the relationships between the model dimensions. As shown in Table 6.6, the means across usage categories/brand knowledge levels are different, and the following analyses will determine if there are significant differences in the three categories

Table 6.6 Means of Construct Scores by Self-Categorized Usage Types

Construct	Never used (Low Knowledge)	Just Tried (Moderate Knowledge)	Regular User (High Knowledge)
Brand Awareness:			
Brand Recognition	5.44	5.59	5.77
Brand Recall	5.45	5.68	5.62
Brand Associations:			
Attribute Associations	4.18	4.76	4.76
Benefits Associations	4.39	5.04	5.14
Attitude Associations	4.11	4.93	4.94
RE Dimensions:			
Attitudinal Loyalty	5.27	5.72	5.77
Satisfaction	5.32	5.63	5.78
BHE Constructs:			
Brand Preference	5.12	5.35	5.54
Purchase Intention	5.77	5.99	6.32
Behavioural Loyalty	5.57	5.94	5.93

6.3.1 Preliminary Analysis

The survey included three questions that could be used to determine groups based on levels of brand knowledge. The first question asked respondents to specify how frequently they have used this hospital brand (1) never used, (2) first time user/just tried, or (3) regular user. The next two survey questions asked respondents to rate on a 5-point scale: (1) how easy it is for them to recognize and recall this hospital brand? and (2) how difficult it is for them to recognize and recall this hospital brand? Cross-tabs were used to check the consistency among the responses for these three questions, and asked if they did match up—regular users had higher scores for recognition and recall and vice-versa. The means are consistent as well (Table 6.7).

Table 6.7 Mean Ratings of Levels of Usage by Self-Categorized Knowledge Levels

Levels of Brand Knowledge	Never used	Just Tried	Regular User
Ease in Recognition & Recall	2.26	3.51	4.39
Difficulty in Recognition & Recall	4.21	3.32	1.83

53 respondents reported that they have never used that specific hospital (low brand knowledge), 144 reported that they have just tried/ first time used that specific hospital brand (moderate knowledge), and 185 respondents reported that they are the regular users of that specific hospital (high brand knowledge). Based on this question, an ANOVA test was used to first establish that there are actually differences based on usage/knowledge levels (high versus low). Results found significant ($p<.01$) differences for the overall brand knowledge scores, as well as for several other dimensions in the proposed model (Table 6.8). These results help establish that there are differences among the dimensions based on usage/knowledge levels. Initially, this first question was used for creating three groups—(1) never used, (2) just tried and (3)regularly used. However, the group size for never used was too small (only 53 responses) to analyze with SEM. Therefore, the other two related survey questions were used grouping.

Table 6.8 Differences in construct means by level of Brand Knowledge

Construct	**F**	**Significance**
Brand Awareness:		
Brand Recognition	3.015	.050
Brand Recall	1.253	.287
Brand Associations:		
Attribute Associations	6.919	.001
Benefits Associations	10.102	.000
Attitude Associations	11.588	.000
RE Constructs:		
Attitudinal Loyalty	6.801	.001
Satisfaction	5.715	.004
BHE Constructs:		
Brand Preference	2.837	.060
Purchase Intention	5.537	.004
Behavioural Loyalty	3.723	.025

Additional post hoc tests for the model revealed that for Knowledge Equity and Brand Associations (attribute related, benefits related, and attitude related), the ‘never used’ and ‘just tried’ categories had insignificant differences between each other, but had significant differences ($p<.05$) with the ‘regular users’. For knowledge equity, attitudinal equity,

relationship equity, brand recall and the BHE constructs (brand preference, intent to purchase, behavioural loyalty) only 'never used' and 'regular user' categories were significantly different (p>.05). There were no significant differences among the categories for brand recognition. These post hoc results suggest that additional examination might reveal more similarities between the three user categories—meaning that the key distinction in proposed model might be whether or not brand knowledge is present.

6.3.2 Group Specification

Based on the rating questions, variables were created in the data set to represent (a) Low brand knowledge and (b) High brand knowledge—where 0=low (scores of 1-2), 2=high (scores of 4-5). The intention was to specify three groups: one as low brand knowledge (included never used and who had difficulty in brand recognition and recall), one as moderate brand knowledge (included just tried who had some difficulty in recognition and recall), and one as high brand knowledge (regular users who has greater ease in brand recognition and recall).

Table 6.9 Differences in construct means (ANOVA) by level of Brand Knowledge

Construct	Low Brand Knowledge	High Brand Knowledge	F	Sig.
Brand Awareness:				
Brand Recognition	5.45	5.88	4.665	.010
Brand Recall	5.51	5.75	2.875	.058
Brand Associations:				
Attribute Associations	4.18	4.94	9.044	.000
Benefits Associations	4.42	5.28	10.612	.000
Attitude Associations	4.13	5.08	11.935	.000
RE Constructs:				
Attitudinal Loyalty	5.15	5.97	12.430	.000
Satisfaction	5.14	5.90	6.109	.002
BHE Constructs:				
Brand Preference	5.12	5.75	5.939	.003
Purchase Intention	5.92	6.27	1.852	.158
Behavioural Loyalty	5.53	6.08	6.869	.001

But again, there were not sufficient numbers for low brand knowledge (46 responses) to analyze with SEM, so an alternative approach was used. The two groups low and moderate brand knowledge were merged. So, the groups used in the moderation analysis were high brand knowledge (126 responses with scores of 4-5 on brand recognition and recall), and low brand knowledge (146 responses with scores of 1-2 on brand recognition and recall).

Although not ideal, this approach can be justified in the present context. As we are talking about brand knowledge in the CBBE context, it is difficult for all consumers to possess high brand knowledge. Therefore, focusing on the brand knowledge and its moderating effects on the proposed CBBE model has merit, and ANOVA results (Table 6.9) also show significant differences among these two groups.

6.3.3 Multiple-group Analysis

To determine whether there are differences in the relationships in the proposed model when the customer brand knowledge is high/or low, the examination of moderating effect of levels of brand knowledge by conducting a multiple-group analysis was required (Hair, et al., 2010). This moderation test was done in AMOS 0.18, which involved comparison of chi-squares of an unconstrained model with a constrained model. In a constrained model, the structural path estimates were set to be equal across the two groups. In the unconstrained model, all the structural estimates were freely estimated, where difference among the two groups were permitted. Moderation of the proposed model was determined based on the chi-square difference test, in which moderation is supported when the chi square in the constrained model is significantly higher than in the unconstrained model (Hair, et al., 2010).

Table 6.10 Significant Standardized Structural Path Loadings for High and Low Brand Knowledge groups

Levels of Brand Knowledge	Antecedent	Outcomes	Loading	Path Sig.	Sig. Diff. between groups
High	Brand Recognition	Knowledge Equity	.697	.011	No
High	Brand Recall	Knowledge Equity	.382	.028	P<0.10
High	Attribute related Assoc.	Attitudinal Equity	.439	.000	No
High	Benefits related Assoc.	Attitudinal Equity	.928	.000	P<0.10
High	Attitude related Assoc.	Attitudinal Equity	.884	.000	No
High	Attitudinal loyalty	Relationship Equity	.744	.000	No
High	Satisfaction	Relationship Equity	.779	.000	No
Low	Knowledge Equity	Brand Perception	.516	.000	No
Low	Relationship Equity	Brand Perception	.418	.000	P<0.02
Low	Attitudinal Equity	Brand Perception	.767	.000	P<0.10
Low	Knowledge Equity	Intention to purchase	.775	.000	No
Low	Attitudinal Equity	Intention to Purchase	.478	.000	No
Low	Relationship Equity	Intention to Purchase	.247	.000	No
Low	Knowledge equity	Behavioural loyalty	-.240	.000	P<0.05
Low	Attitudinal equity	Behavioural loyalty	-.529	.000	P<0.02
Low	Relationship Equity	Attitudinal Equity	.412	.000	No

The results did support an overall significant difference based on brand knowledge levels. The unconstrained model (χ2 (820) =1895.853, p<.000; RMSEA=.070, CFI=.831) did show better fit than the constrained model (χ 2(833) =1924.154, p<.000; RMSEA=.070, CFI=.829) based on the chi-square difference test (Δ χ 2(13) =28.301, p<.01). The model observed some significant key differences in the path loadings for high brand knowledge versus low brand knowledge group. In the high brand knowledge group, the paths from attribute related brand associations to two OBE dimensions (KE and AE) were significant at the p<.05 level, as were the paths from benefits related brand associations to RE, and brand recognition and brand recall to KE. In the low brand knowledge group, more paths were significant in comparison to high brand knowledge group: paths from attribute related brand associations to all the OBE dimensions (KE, AE, and RE), the paths from benefits related associations and attitude related brand associations to KE and AE, as well as the paths from KE and AE to brand perception. Table 6.10 shows the significant paths for both the groups.

Further, the results of 14 specific moderation tests to determine which structural paths were significantly different between the two groups show that effects of AE and the brand recognition are significantly different for the two groups. The effects of attribute related associations on KE, benefits related associations on RE, and attitude related associations on AE were significantly different for low versus high brand knowledge groups.

6.4. CONCLUSION

This chapter presents the primary outcomes of this study, where the conceptual framework has been tested and the variations in the proposed structural model have been examined. The test of the hypothesized structural model found support that the identified dimensions of brand knowledge are important for creating knowledge equity, attitudinal equity and relationship equity among customers. Further, the results show that brand knowledge constructs affects the behavioural outcomes indirectly while the CBBE affects them directly supporting Raggio and Leone's (2007) conceptualization that CBBE moderate the individual and aggregate outcomes of brand marketing.

Chapter 7

DISCUSSIONS AND CONCLUSIONS

This chapter expands the major findings and discussions based on the results obtained after fulfilment of the objectives of this research. It integrates those findings with the theoretical and managerial implications drawn from the studies, and highlight upon the limitations and suggestions for future research.

7.1. FINDINGS AND DISCUSSIONS

In order to address the problem statement that was conceptualized on the basis of research gaps identified during literature review and hospital industry overview, the researchers laid down three underlying objectives of this research. Based on literature review, several brand equity measurement variables were identified, which were further verified with the academia and the industry experts and led to the development of a conceptual framework. In order to empirically test the conceptual framework and hypotheses, the researchers aimed at (1) developing an instrument for measuring customer-based hospital brand equity (HBE), (2) understanding key relationships in the HBE model constructs, and (3) exploring variations in the structural model based on levels of customer brand knowledge. The subsequent sections report the major findings of this research.

The primary objective of this research was to understand the role of customer brand knowledge in developing customer-based hospital brand equity, which further leads to several behavioural BE outcomes. Since brand knowledge is considered to be the most important precursor and building block of CBBE, this study explores how the key brand knowledge dimensions (brand awareness and brand associations) directly relate to the three aspects of overall brand equity (OBE): knowledge equity, attitudinal equity and relationship equity, and indirectly relate to the three BHE outcomes: brand perception, intention to purchase and behavioural loyalty. Therefore, the first and the foremost objective of this research is to identify key brand knowledge, OBE and BHE constructs, and develop a scale for measuring customer-based hospital brand equity. Based on literature survey and the interviews of industry and academic experts, two dimensions and five constructs were identified for measuring brand knowledge: brand recognition, brand recall, attribute related associations, benefits related associations, and attitude related associations. Three constructs were identified for measuring the three aspects of OBE: knowledge equity, attitudinal equity, and relationship equity. Then, the indirect outcome of brand knowledge was measured using

three BHE constructs: brand perception, intention to purchase and behavioural loyalty, as suggested by Tolba and Hassan (2009).

Based on the domain specifications for the above mentioned constructs, a conventional scale development procedure was applied for generating of a pool of measurement items, item reduction, questionnaire, sampling, data collection and development of measurement model. For scale development, it followed the procedures suggested by Chruchill, (1979), and augmented by others (e.g. Peter, 1981; Anderson and Gerbing, 1982; Nunnally and Bernstein, 1994; Zaichkowsky, 1985; Arnold and Reynolds, 2003). After construct domain specification and initial reduction of items for content and face validity a questionnaire was designed for data collection. After data collection, scale items were further purified with the help of EFA and CFA tests. Exploratory factor analysis (EFA) was used to eliminate the superfluous items, and then a confirmatory factor analysis (CFA) was conducted using the maximum likelihood method to test the measurement model.

Separate EFA tests were run for each of the brand knowledge and BHE constructs. EFA was not mandatory as their factor structure was already clear. For brand recognition, four items explained 59.2% of variance (MSA=.887, Bartlett's test significant <.001 level), with all communalities over .4 on a single factor. For brand recall, five items explained 72.8% of variance (MSA=.866, Bartlett's test significant <.001 level), with all communalities over .5 on a single factor. For attribute associations, five items explained 76.4% of variance (MSA=.809, Bartlett's test significant >.001 level), with all communalities over .5 on a single factor. For benefits associations, seven items explained 52.6% of variance (MSA=.757, Bartlett's test significant <.001 level), with all communalities over .5 on a single factor. For attitude associations, five items explained 77.5% of variance (MSA=.825, Bartlett's test significant <.001 level), with all communalities over .4 on a single factor. For attitudinal loyalty, four items explained 72.2% of variance (MSA=.751, Bartlett's test significant <.001 level), with all communalities over .5 on a single factor. For satisfaction, three items explained 59.2% of variance (MSA=.821, Bartlett's test significant <.001 level), with all communalities over .5 on a single factor. For brand perception, four items explained 79.9% variance MSA=.711, Bartlett's test significant <.001 level), with all communalities over .4 on a single factor. For intention to purchase, three items explained 59.2% of variance (MSA=.851, Bartlett's test significant <.001 level), with all communalities over .39 for a single factor. For behavioural loyalty, three items explained 51.9% of variance (MSA=.722, Bartlett's test significant <.001 level), with all communalities over .4 on a single factor.

Further, these tests were seconded by the Kaiser-Meyer-Olkin (KMO) statistic for sampling adequacy which yielded a KMO value of 0.83 surpassing the minimum benchmark of 0.60 for sample adequacy (Tabachnick and Fidell, 2001). During EFA, 8 items were dropped after a close inspection, as they could not fulfil the minimum cut off criteria. Therefore, after the exploratory factor analysis and item analysis using Cronbach's Alpha, seven exogenous constructs were introduced to a confirmatory factor analysis for the development of first and second order measurement model.

After EFA, the next step in the item purification process was the development of a measurement model. This measure purification process relies on "iteration of confirmatory factor analyses, where the goal is to improve the congeneric measurement properties of the scale" (Arnold & Reynolds, 2003, p. 83). So, Confirmatory Factor Analyses (CFA) was performed on the remaining items (Marsh, and Hocevar, 1985). CFA is a special case of Structural Equation Modelng (SEM), which is also known as linear structural relationship model (Joreskog and Sorbom, 2004) or covariance structure model (McDonald, 1978). It applies a multivariate technique to understand the structure of latent variables.

Since improvement in the psychometric properties of the scale depends on the iteration of items, (Bagozzi, 1980; Anderson and Gerbing, 1988; Arnould and Reynolds, 2003), a 33-item 7 construct (excluding the BHE constructs) confirmatory factor model was submitted to first order CFA in AMOS (see Figure 5.3). However, the initial indices for the first order model did not meet acceptable levels (see Table 5.6), so relevant results (standardized loadings, presence of negative error terms, unacceptable standardized residuals, and high modification indices) were reexamined, and problematic items were removed in an iterative process. Then three second order OBE constructs were introduced-KE, AE and RE, where brand recognition and recall led to KE, attribute associations, benefits associations and attitude associations led to AE, and attitudinal loyalty and satisfaction led to RE. The above mentioned framework is consistent with the literature (e.g. Tolba and Hassan, 2008) as discussed in the earlier sections of this chapter. The results of the second order CFA is also reported in Table 5.6.

The final model consisting of 21 items (excluding 9 items for the three BHE constructs) representing seven constructs had acceptable fit indices, and showed improvement over the initial CFA. Table 5.6 reports the fit indices for the initial and final CFA. The final CFA indicate acceptable model fit with the data ($x2$=1298.206 (p=.000), CFI=0.982, RMSEA=0.028, RMR=0.055). The chi-square was significant, which is usually common

with very large sample sizes (Bollen, 1989). The ratio of chi-square to degrees of freedom was in the acceptable range (2-5) and the root mean square error of approximation (RMSEA) was below the 0.08 threshold, which indicated good overall model fit.

Further, each construct was also examined for unidimensionality, reliability and validity. Each construct had acceptable loadings (above 0.60) and path significance ($p < .000$), which supported the unidimensionality and convergent validity of constructs. In addition, cross-loadings were not reported. Each construct passed their AVE and composite reliability benchmark (AVE ≥ 0.50, composite reliability ≥ 0.70), thus supporting the reliability of each construct. Discriminant validity was also supported as AVE for each construct exceeded squared phi correlations between constructs (Hair et al. 2010), showing strong evidence of discriminant validity.

For structural model, a thirteen-construct structural equation model (SEM) was estimated in AMOS. The overall model fit was in acceptable range (x^2=164.560 (p=.000), x^2/df=1.383, CFI=0.977, RMSEA=0.033, RMR=0.054). The chi-square test for the model was significant—which is very commonly seen in the case of studies having large sample sizes (Bollen, 1989). The ratio of chi-square to degrees of freedom was also in the acceptable range, and the root mean square error of approximation (RMSEA) was below the 0.08 threshold limit, which indicated a good overall model fit (Table 6.3). The comparative fit index (CFI) was also above the traditional .90 cut-off point (.977), however with more complex models it is likely that the CFI drops below the acceptable level to some extent (Hair et al. 2010). All hypothesized paths from brand knowledge dimensions (brand awareness and brand associations) and relational dimensions (attitudinal loyalty and satisfaction) were significant ($p<0.005$). However, their impacts did vary. The results seen in the case of above relationships suggest that brand knowledge, attitudinal loyalty and satisfaction are required in order to generate overall brand equity (knowledge equity, attitudinal equity and relationship equity). This information could be also aligned with the findings of earlier research by partially supporting the BVC model and HOE model, which suggest that the consumers move through the different stages before making a final purchase decision. Tables 6.4 and 6.5 shows the standardized structural path loadings, and hypotheses supported.

Since knowledge equity, attitudinal equity and relationship equity were higher order constructs, positive relationship was hypothesized with their respective lower order constructs. While all other hypotheses were accepted, they varied in their influence (see table

6.4 for standardized path loadings). Although, brand recognition and brand recall are both important, recognition was found to be more important in comparison to recall in creating knowledge equity. Similarly among the three types of brand associations, benefit association has more influence in generating attitudinal equity than the other two types of associations. In a similar comparison, satisfaction plays a more important role in developing relationships with the customer.

All three brand associations had a significant impact on attitudinal dimension. However their effects varied, were the benefits related associations clearly emerging as the strongest driver with a standardized loading of .859. But one interesting finding was observed in this regard, while attribute related associations had a smaller but significant impact on AE, but it had *negative* impact on brand perception, thus H5a was supported but in opposite direction. However, AE significantly predicted intention to purchase and but not behavioural loyalty (supporting H5b and rejecting H5c).

All paths from the OBE dimensions to the BHE (brand preference, intention to purchase, and behavioural loyalty) variables varied significantly. The purpose of including the BHE variables at this stage was to show support that OBE does lead to positive customer-based brand equity outcomes. Knowledge equity has a significant impact on the consumer's brand preference (H4a), their intention to purchase the brand (H4b), but in the negative direction. This suggests that in order to generate brand perception and intention to purchase, the burden of creating brand knowledge lies on the firm. However, the relationship between KE and behavioural loyalty was not supported (H4c was rejected). Similarly, the path from AE to purchase intention and brand perception was significant. However, the relationship between AE and brand perception was supported but in the opposite direction. The path from AE to behavioural loyalty was rejected. This suggests that mere attitude may not lead to repetitive buying behaviour. The relationship between RE to brand perception, intention and behaviour was significant.

Further, in objective three the results of the moderation analysis based on levels of customer brand knowledge did support an overall significant difference based on brand knowledge levels. The unconstrained model (χ2 (820) =1895.853, p<.000; RMSEA=.070, CFI=.831) did show better fit than the constrained model (χ 2(833) =1924.154, p<.000; RMSEA=.070, CFI=.829) based on the chi-square difference test ($\Delta\ \chi$ 2(13) =28.301, p<.01). The model observed some significant key differences in the path loadings for high brand knowledge versus low brand knowledge group. In the high brand knowledge group, the paths from

attribute related brand associations to two OBE dimensions (KE and AE) were significant at the p<.05 level, as were the paths from benefits related brand associations to RE, and brand recognition and brand recall to KE. In the low brand knowledge group, more paths were significant in comparison to high brand knowledge group: paths from attribute related brand associations to all the OBE dimensions (KE, AE, and RE), the paths from benefits related associations and attitude related brand associations to KE and AE, as well as the paths from KE and AE to brand perception. Table 6.9 shows the significant paths for both the groups.

Further, the results of 14 specific moderation tests to determine which structural paths were significantly different between the two groups show that effects of AE and the brand recognition are significantly different for the two groups. The effects of attribute related associations on KE, benefits related associations on RE, and attitude related associations on AE were significantly different for low versus high brand knowledge groups.

7.2. RESEARCH CONTRIBUTIONS

This research has several theoretical and managerial contributions. It offers a valid and reliable measurement scale and model for customer-based hospital brand equity (HBE). Besides replication of the HBE scale in other industries, the model provides guidelines for evaluating the BE performance of hospital brands, predicting their leveraging potential, and providing valuable suggestions for branding and brand equity management. The following sections highlight on the theoretical and managerial contributions of this research.

7.2.1. Theoretical Implications

From an academic perspective, this research focuses on the area of customer-based brand equity measurement. This study identifies important brand equity constructs, develops HBE model based on hierarchy-of-effect (HOE) model, and applies the recommended HBE model to link brand knowledge with OBE and BHE constructs. The major academic implications of this research include:

- This study identifies key CBBE constructs to be used for predicting customer-based hospital brand equity. In this regard, it was concluded that CBBE emanates from customer brand knowledge and results in behavioural brand equity outcomes. This conceptualization of BE supports the hierarchy-of-effects model, which suggests the cognitive, attitudinal and behavioural stages of consumer development. The EFA was conducted and replicated on thirteen constructs. The results of EFA concluded that

brand knowledge consists of five constructs (brand recognition, brand recall, attribute related associations, benefits related associations, and attitude related associations), the overall brand equity (OBE) consists of three constructs (knowledge equity, attitudinal equity and relationship equity), and finally, behavioural brand equity outcomes (BHE) constructs include brand perception, intention to purchase, and behavioural loyalty.

- The results of this study contribute toward the development of a comprehensive scale for measuring customer-based hospital brand equity. This measurement model has been developed with the help of a confirmatory factor analysis (CFA) in AMOS. The model integrates brand knowledge constructs with OBE and BHE constructs. The reliability and validity tests of the scale items suggest that the final items of the scale are capable of measuring the customer-based HBE constructs (see Chapter Five).

- The next academic contribution is the development of a structural HBE model for examining the relationships between brand knowledge, OBE and BHE constructs. For this purpose, the recommended HBE model was applied in the case of multi-specialty hospital brands. The model links brand knowledge (one of the most important source of CBBE as suggested by Keller, 1993) with overall brand equity (which is for better understanding has been divided into knowledge equity, attitudinal equity and relationship equity) and with three behavioural brand equity outcomes (brand perception, intention to purchase and behavioural loyalty). Consistent with the findings in earlier BE measurement literature, the hypothesized relationships in the model provide important guidelines for managing the three aspects of CBBE and further relate them to the above mentioned behavioural brand equity outcomes.

- The results of the moderation analysis conducted in this research suggest variations in the recommended HBE model based on levels of customer brand knowledge. The model observed some significant key differences in the path loadings for high brand knowledge versus low brand knowledge group. But, it was quite surprising to find out that more path loadings were significant in the case of low brand knowledge group that the high brand knowledge group, which suggests that high brand knowledge is sufficient but not a necessary condition for the existence of high brand equity.

7.2.2. Managerial Implications

This study provides several implications for managerial practice. It offers an in-depth analysis of CBBE in hospital industry and a practical implementation of the HBE model for understanding the relationships between key brand knowledge, OBE and BHE variables with regard to multi-specialty hospital brands in an emerging market setup like India. Further, the major practical implications of this study are:

- An in-depth analysis of HBE model based on levels of customer brand knowledge provides better understanding of the variations in the model relationships based on customer knowledge and provide guidelines to the hospital managers for analyzing brand performance, predicting future brand potential, and deciding upon the various aspects of brand building and brand equity management.

- By linking brand knowledge, overall brand equity and behavioural brand equity outcomes, the study provides a valid and reliable model for BE measurement, which can be replicated in other industries as well. In this study, the recommended HBE model has been applied for measuring brand equity of multi-specialty hospital brands, in an attempt to generalize the results of this model across similar segments and across industries.

- Considering the recent application of relationship theories in brand marketing, the present study attempts to provide a better idea of customer-brand relationship by considering relationship equity as a component of OBE. The present model provides a better understanding of how brand knowledge constructs are linked to the relational outcomes of brand marketing.

7.3. Limitations

Besides, providing several theoretical and managerial implications, the present research has some limitations that need to be considered while generalizing the study results. The following points enlighten on some of those limitations.

- The present research is based on consumer survey that captures the perceptions and behaviour of only current customers. Therefore, the results of the model may vary in the case of past and future data.

- Although the current model contains constructs that are similar to the other models of BE, yet the results of this model cannot be compared with that of other models, as the current model takes a fresh look at the brand knowledge dimensions by splitting them into their sub-constructs.

- The scale development and modelling of customer-based HBE was performed in the context of emerging market where the branding building style, consumer behaviour and market environment is different from those of developed markets. As a result, the replication of the present model would need a fresh reconsideration, particularly with regard to the levels of brand knowledge in those countries.

- The present study has been conducted in the context of multi-specialty hospital brands, therefore, the conclusions of the present study cannot be generalized in the context of other hospital types. However, the HBE scale and model has been developed to measure and analyse customer-based brand equity in any hospital and any industry.

- The model suggest four control variables—market, usage, country-of-origin and attitude toward the brand. Since, the present model was validated on the basis of data collected for a single market and country, the results of the model may not hold true if examined on a cross-sectional data.

- The moderation analysis for the HBE model was conducted on the basis levels of customer brand knowledge. Since levels of brand knowledge can vary in different setup, the results of the moderation analysis limited to those considerations.

7.4. Suggestions for Future Research

The conclusions drawn from the present study highlights several points that could be worth consideration to the future researchers. Some of those points are:

- The present research is conducted on data collected for the current customer. A verification of the recommended HBE scale and model using longitudinal and cross-sectional data is highly recommended.

- The validation of the present scale and the model is done using three BHE outcomes, which can be verified in the light of a combination of other important variables that are generic to brand equity and specific to various industries.

- The review of studies in the area of brand equity suggests multiplicity in the availability of BE measures, which could be very confusing to the young researchers. Therefore, future research work in this is needed for categorization and positioning of those measures.

- A critical review of studies related to BE suggest that the area is replete with multiple non-financial measures of BE, which suggest excessive theorization of cognitive aspects of BE and has hindered the progress of the disciple. Therefore, it is highly suggested that the future researchers can explore and draw inferences from the rich and vivid information provide in other appellations that are being used for understanding human behaviour.

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List of Publications from the Present Research

Research papers: Accepted/Submitted in International Journals

1. Kumar, I., Garg, R. and Rahman, Z (2010), "Influence of Retail Atmospherics on Customer Value in an Emerging Market Condition", *The Great Lakes Herald*, Vol.4, No.1, pp.1-13.
2. Rahman, Z and Kumar, I (2011), "Investigating the Role of marketing in decreasing the role of market barriers on consumer's choice of healthcare brand", *International Journal of Arts and Sciences*, Vol.4, No.6, pp.126-133.
3. Kumar, I. and Rahman, Z. (2013), "Measuring Customer-based Brand Equity in Emerging Markets", *International Journal of Pharmaceutical and Healthcare Marketing* (Under Review).
4. Kumar, I. and Rahman, Z. (2013), "Scale Development and Modelling of Customer-based Brand Equity: A Healthcare Industry Example", *Marketing Intelligence & Planning* (Submitted).
5. Garg, R., Kumar, I. and Rahman, Z. (2010), "Evaluating a model for analyzing methods used for measuring customer experience", *Journal of Database Marketing and Customer Strategy Management*, Vol.17 No.2, pp. 78-90.
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Papers: Presented/Awarded in International Conferences

1. Received Highly Commended Award for research titled "Investigating whether micro-credit can improve the utilization of private sector health services among Indian women" at 2009 Emerald/AIMA Indian Management Research Fund Award.

2. Kumar, I. and Rahman, Z. (2011), "Role of IT in Improving Healthcare Services at the Bottom of Pyramid", Selected among top three finalists for ICSEM Service Innovation Challenge-a global level service innovation challenge organized by ISB Hyderabad, SCRI, USA and IBM.
3. Kumar, I., Garg, R. and Rahman, Z. (2010), "A Theoretical Investigation into the Relationship between Customer Experience and Brand Loyalty", *2nd International Conference on Brand Management*, Organized by Institute of Management Technology, Ghaziabad, 8-9, January.
4. Kumar, I., Rahman, Z., Kumar, D. and Goyal, P. (2011) "Green Marketing Mix: Rethinking Competitive Advantage during Climate Change", International Conference on Interdisciplinary Research and Development, June 1, 2011, Bangkok, Thailand.
5. Kumar, I., Rahman, Z. (2010), "Measuring and Managing brand equity in Indian Healthcare Sector", Presented at the National Level Program on Knowledge sharing practices: A Management Perspective, 21-23 February, 2011, organized by IIT Roorkee and sponsored by DIT, Ministry of Communication and IT, Govt. Of India.
6. Presented paper in-absentia titled "Influence of barriers on consumer's choice of healthcare and Customer perceived value", International Conference on Operations and Management Sciences, organized by IMT Nagpur, 12-13 February, 2010.

APPENDIX-I

QUESTIONNAIRE FOR CONSUMER SURVEY

INFORMED CONSENT

Scale Development and Modelling of Customer-based Hospital Brand Equity (HBE).

Ishwar Kumar
ish83ddm@iitr.ernet.in
Department of Management Studies, IIT Roorkee

Dear Respondents,

The purpose of this questionnaire is to identify some valid and reliable questions for measuring and understanding the relationships between your knowledge about a specific brand and your cognitive, attitudinal and behavioural manifestations toward that brand, which you may have acquired as a result of brand marketing, your personal experiences with the brand, word-of-mouth from friends, relatives, peers and other acquaintances, or other sources.

This questionnaire contains some scale items, which you can voluntarily respond, or you may quit at any time you desire. Information collected through this questionnaire will be kept anonymous and will only be used for academic purposes. Although the results of this study will be published, it will be devoid of any identifying information. The respondent identity will be confidential until disclosure is required by the law.

The study has been explained to me and all my questions have been satisfied. I may suggest additional questions, if I feel it is required in my case. In case of further questions regarding the respondents' rights or anything regarding researcher's affiliation, I can contact Dr. Zillur Rahman, Department of Management Studies, IIT Roorkee, yusuffdm@iitr.ernet.in

***** I am at least 18 years of age, and I agree to participate in this survey, and I acknowledge that the researcher will provide me a copy of this consent form, if requested**.**

○ I am above 18 and willing to participate in this survey.

○ No, I do not agree to participate in this survey.

SECTION-I: INTRODUCTION

The objective of this research is to better understand the customer-based brand equity, by understanding the possible feelings, perceptions, beliefs, attitudes and behavior a customer manifests toward a specific brand. However, before asking you to share your feelings and perceptions about a specific hospital brand, we need to clarify what we mean by a hospital, a brand, or the concept of customer-based brand equity, so that it will be easier for you to think of a hospital brand example, which in your idea fits into the definition of customer-based brand equity.

1. Hospital

By referring to a hospital, we mean:

- A premise which is housed with one or more doctors, nurses and other staffs, and is capable of providing a range of preventive and curative medical services to patients (particularly to those who are ill/or likely to get ill), in an inpatient and outpatient setting.

- In this research, our focus is on multi-specialty secondary and tertiary hospitals, which are capable of providing a range of services that includes: internal medicine, general surgery, obstetrics & gynaecology (OBG), paediatrics, ENT, orthopaedics, ophthalmology, and also treat other specialities like gastroenterology, cardiology, neurology, dermatology, urology, dentistry, oncology and many others.

2. Brand

By referring to a brand, we mean:

- Any product or service (e.g. retail brand, service brand, online brand, charities, consumer durables, financial services, FMCG, etc.).

- The focus is on brand name and not a product class. For example, by brand we mean Tata, Nokia, Nestle, etc. and not salt, mobile phone, or chocolates.

- You need to consider the focal brand and not the individual brands under that focal brand. For example, you need to think of Tata as a brand and not the individual brands like Tata Sumo, Tata salt, Tata tea, etc.

***A Multi-specialty Hospital is a premise housed with several doctors and associated staff, and which is capable of treating multiple diseases.**

3. Customer-based Brand Equity

Customer-based brand equity is the positive or negative feelings, perceptions, beliefs, attitudes and behavior of a customer manifested toward a specific brand, which may have resulted due to customer brand knowledge—brand awareness, familiarity, experiences, word-of-mouth, etc. It may have occurred as a result of single activity, a combination of activities representing a single issue, or even without any sort of transaction and can occur at a point of time or over a period of time. The following characteristics of CBBE are noteworthy:

- It refers to the cognitive, affective and conative manifestations of a customer toward a brand. For example, a purchase, choice intention, brand commitment, associations, likeness, and alike.
- Such activities may take place online or offline.
- Brand equity may or may not lead a transaction.
- It may occur due to a single activity or a series of activities, directly or via several mediums.
- Can occur at a point of time, or over a period of time.
- It is related to a single brand/multiple brand at the same time.

Shortly, you will be asked to describe your feelings, perception, attitudes and behavior toward your favourite multi-specialty hospital brand (which treats more than one type of illness). So please keep the following in mind.

When selecting a multi-specialty hospital brand, please remember:

- That any secondary or tertiary hospital treating more than one specialization will work.
- Focus on the actual brand and not the product class it is catering to
- Consider the brand as a whole, not its sub-brands.

When describing your feelings, perception, attitudes and behavior toward your favorite multi-specialty hospital brand, please remember that the brand equity may occur:

- Due to a single activity or a series of activities with the brand
- Can occur all at once or over a period of time.
- Includes both positive and negative feelings, perceptions and behavior tied to a single brand.

SECTION-II: YOUR PERSONAL BRAND EXAMPLE

Now, based on how we defined (1) multi-specialty hospital brand and (2) customer-based brand equity, we would like to know your perceptions, feelings, attitudes about a hospital brand example.

So, you will be expressing your manifestations toward only ONE hospital brand

***1. Please think of a multi-specialty hospital brand for which you want to express your positive or negative perceptions, feelings, attitudes and behavior. Remember, you can consider only one brand.**

What is that brand's name? _____

When you think about that brand:

	1	2	3	4	5
How easy it is for you to recognize and recall that brand					
How difficult it is for you to recognize and recall that brand					

1= Less easy/difficult 5= very easy/difficult

SECTION-III: BRAND KNOWEDGE

Please indicate your response to the following questions, keeping in mind the multi-specialty hospital brand you mentioned in the earlier section. Please put a (√) to whichever option you agree with. Please assume X as the brand you are responding for.

1. Brand Recognition

I believe ...	Completely disagree	Somewhat disagree	Slightly disagree	Neutral	Slightly agree	Somewhat agree	Completely agree
X is a popular brand in healthcare							
I have no difficulty in recognizing X							
I can recognize X among all other hospital brands							
I know how X looks like							
I am familiar with the services provided at X							
I can recognize the signs, symbols, colour of logo, etc related to X							

2. Brand Recall

I think...	Completely disagree	Somewhat disagree	Slightly disagree	Neutral	Slightly agree	Somewhat agree	Completely agree
Whenever I have health problems, some characteristics of X come to my mind quickly							
I can recall how hospital X looks like							
I have no difficulty in finding X							
I know many people who use X							
I can recall whenever I think of it							

3. Brand Associations (Attribute related)

	Completely disagree	Somewhat disagree	Slightly disagree	Neutral	Slightly agree	Somewhat agree	Completely agree
X delivers treatment with the help of latest technology							
X has tie-ups with many good foreign hospital/brands							
X has many good doctors and well-behaved nursing staff							
It is very convenient to reach X							
The Ambience at X is very attractive							
X is a leader in its category							

4. Brand Associations (Benefits related)

I think...	Completely disagree	Somewhat disagree	Slightly disagree	Neutral	Slightly agree	Somewhat agree	Completely agree
X provides quality treatment							
X goes with my social status							
Treatment provided by X is much useful than most other hospitals in town							
X offers services that are good value for money							
X is devoted to public service							
X uses latest treatment methods							
X has well renowned doctors							

5. Brand Associations (Attitude related)

I feel...	Completely disagree	Somewhat disagree	Slightly disagree	Neutral	Slightly agree	Somewhat agree	Completely agree
The services at X worth I spend							
I know many people who use X							
X is use by many people							
X has a team of good doctors							
X caters to all specializations							
I feel personalized in case of X							
X cares about patients' needs							
For X service comes first							
X cares about society							
For X money is secondary							
People know X for good treatment							

6. Relationship Variables

	Completely disagree	Somewhat disagree	Slightly disagree	Neutral	Slightly agree	Somewhat agree	Completely agree
X offers consistent and reliable service							
I would prefer X, even if other hospitals are seemingly similar							
In case of health problems, I will prefer to go to X							
I will go to hospital X in the future							
I am satisfied with the services provided by X							
I encourage/recommend others to try X							
I rate X higher than others hospital brands							
My likely to visit X in future is very high							

SECTION-V: BEHAVIORAL OUTCOMES

I think...	Completely disagree	Somewhat disagree	Slightly disagree	Neutral	Slightly agree	Somewhat agree	Completely agree
Brand Preference							
X offers consistent and reliable service							
X has well trained doctors and nursing staff							
X is a leader in this service category							
Intention to Purchase							
I will go to hospital X in the future							
X is my first choice							
I encourage/recommend others to try X							
Behavioural Loyalty							
Whenever I have health problems, I go to X							
I would prefer X, even if other hospitals are seemingly similar							
I would not prefer to go other hospitals when X is capable of providing me the medical care I need							

SECTION-VI: DEMOGRAPHIC DETAILS

1. Your age:

○ <21 ○21-30 ○1-40 ○-50 5○60 >6○

○ No response

2. Gender: ○ Male ○ Female ○ No response

3. How would you define your current educational status?

○ Below 10th Standard

○ 10th Standard

○ 12th Standard

○ Graduate

○ Postgraduate

○ Doctorate (PhD)

○ Diploma

○ No response

4. Approximate Annual Household Income before paying taxes

○ Less than 1, 00,000

○ Between 1, 00,001 to 2, 00,000

○ Between 2, 00,001 to 4, 00,000

○ Between 4, 00,001 to 6, 00,000

○ Between 6, 00,001 to 10, 00,000

○ Above 10, 00,000

○ No response

5. Type of service you are seeking (Type of Patient):

○ Inpatient ○ Outpatient ○ No response

6. Your perception about the severity of the disease:

○ Life threatening ○ Non-life threatening ○ No idea

○ No response

7. Who will bear the treatment cost?

○ Self/relatives/parents

○ Insurance company

○ Employer

○ Party self and partly others (employers/charity/insurer, etc)

APPENDIX-II

LITERATURE REVIEW SUMMARY TABLE

Table 2.7. Taxonomical Review of Brand Equity Literature

Author/ Year/ Journal/	Application Area/ Country	Instrument/ Statistical method/ Sample	Objective(s)	Findings		
				Dimensions	Factors	Consequences
Jara and Cliquet/ 2012/ JRCS	Retail/France	Questionnaire survey /PLS-SEM/504	Conceptualization and measurement of retail brand equity	Brand awareness and Brand image	Personality, image, service, perceived quality, physical appearance, store policy	Consumer's response
Golicic et al./ 2012/ JBL	Logistics/USA	Questionnaire survey /PLS-SEM/673	To examine market information and Brand equity through Resource-Advantage Theory: A carrier perspective	Brand awareness and Brand image		Brand equity
Eckert et al./2012/IJRM	Multiple/Australia, Canada	Discrete Choice Experiments /Econometrics	To examine brand effects on choice uncertanity	Consistency, credibility, investment, risk, quality, search/time cost		Consumer's choice
Kim et al./2012/JBR	Luxury Fashion brands/ Korea	Questionnaire survey /Descriptive statistics/114	To measure customer equity of luxury fashion brands	Attitude toward luxury brands	Materialism, experiential needs, fashion involvement	CLV, Brand equity, value equity, relationship equity
Moradi and Zarei/2012/APJ ML	Laptops and mobile phones/Iran	Questionnaire survey/SEM/700	To measure CBBE for young consumers	Brand loyalty, perceived quality, brand Awareness/associati ons		Overall brand equity
Johansson et al./2012/IJRM	Multiple brands/USA	Panel data/Econometrics/50	BE performance of global brands in the 2008 financial crisis	Share prices volatility		BE index
Menictas et al./2012/AMJ	Multiple service/Australia	Survey/SEM/257	Validity of BE constructs	Clarity, credibility, perceived quality, perceived risk, information cost saved	Consistency and brand investments	Expected utility

Dwivedi et al./2012/JRCS	Supermarket/Australia	Survey/SEM/20,000	Measurement of brand equity in Australian supermarket	Brand equity, value equity and relationship equity		Loyalty intention
Callarisa et al./2012/TMP	Hotel/Spain	Customer review data/SEM/11,917	Measuring customer-based hotel brand equity	Brand awareness, brand image, brand quality, brand value, brand loyalty		Customer-based hotel brand equity
Tan et al./2011/IBERJ	Fast food/Malaysia	Conceptual Framework	Understanding the hierarchical nature of CBBE dimensions	Awareness, familiarity, perceived quality, brand image, trust, loyalty		Brand loyalty
Ha/2011/SJB	Bank and Discount Mall/Korea	Survey/SEM/508	The use of marketing stimuli in the measurement of BE	Brand awareness/ associations, perceived quality, brand loyalty		Brand equity
Hu/2011/IJOI	Electronic goods/Taiwan	Survey/Descriptive statistics/190	Relationship between various BE constructs	Awareness, perceived quality, associations, loyalty	Customer involvement	Brand Acceptance and Brand value
Chen and Myagmarsuren/2011/TQM	Telecommunication services/Taiwan	Survey/SEM/236	Relationship between various BE constructs: Evidence from telecommunication services	Brand image, company image, relationship quality, relationship value		Customer loyalty
Roy and Chau/2011/APJML	Automobiles/Australia	Survey/SEM/200	Customer-based brand equity: Local versus Global brands	Brand awareness/ associations, perceived quality, brand loyalty		Moderating role of status consumption
He and Li/2011/JMM	Hi-tech service brand/UK	Survey/SEM/268	Determinants of BE in hi-tech services	Overall service quality, perceived value		Service brand equity
Evangelista and Dioko/2011/IJCTHR	Destination brands/Australia	Survey/SEM/979	Destination brand equity perceptions	Performance, image, value , trust, attachment		Destination brand equity
Mirzaei et al./2011/MR	Conceptual framework/Australia	Use of historical data	BE Model as a measure of marketing effectiveness	Various objective measures of brand performance		Marginal change in brand equity

Wang et al./2011/SIJ	Hospital/Taiwan	Survey/SEM/14 days	Development of an CBBE index in hospital sector	Brand awareness, brand associations, service quality, customer loyalty		Customer-based formative hospital brand equity Index
Tsai et al./2010/IJHM	Casino brands/Hong Kong/China, Taiwan	Survey data/descriptive statistics/204	Measuring customer-based brand equity of casino brands	Brand awareness, perceived quality, brand image, brand loyalty, overall BE		Overall Brand Equity
Martensen and Gronholdt/2010/ IJQSS	Branks/Denmark	Survey interview/SEM/351	Measuring brand equity in banking sector	Rational brand responses and emotional brand responses	Product quality, service quality, price, differentiation, fulfillment of promise, and trust	Customer-brand relationships
Lee et al./2010/JFMM	Apparel brands/USA and India	Questionnaire Survey/SEM/	Indian consumers' brand equity toward US and local apparel brands	Uniqueness, COO, brand awareness/associations/perceived quality, brand loyalty		Brand equity
Priluck and Till/2010/JBM	Camera film/USA	Implicit Association Tests/different sample for three experiments	Comparison of CBBE scale with IAT in examining consumer responses to BE	Brand attributes comparison		Attitudinal brand equity outcomes
Pappu and Quester/2010/IBR	Cars and Televisions/Australia	Questionnaire survey/SEM/714	Country equity: conceptualization and measurement	Country awareness, COO associations, perceived quality and country loyalty	macro country image, micro country image as factors of COO	Country equity
Gill and Dawra/2010/JTMAM	Toothpaste/India	Questionnaire survey/SEM/188	Evaluating Aaker's sources of BE and moderating role of brand image	Awareness, perceived quality, brand associations, personality, brand loyalty		Brand equity and moderating role of brand image
Garmendia/2010/JBR	Soft drinks/USA	Scanner data/Hedonic price modeling/2913 stores	Measurement of brand equity using price modeling	Price and volume		Hedonic price for high brand equity
Rios and Riquelme/2010/JRIM	Online store/Australia	Survey/SEM/795	Measuring online brand equity	Awareness/recognition, loyalty, trust associations, value association	Customer service, fulfillment, functionality	Online brand equity

Chen and Tseng/2010/TJ	Airline/Taiwan	Survey/SEM/249	Measurement of Airline brand equity	Awareness, perceived quality, brand image, brand loyalty		Brand equity
Broyles et al./2010/JPBM	Multiple brands/USA, China	Survey/SEM/578	Development of cross-national BE scale	Reliability, effectiveness, brand awareness, loyalty and brand attitude	Perceived quality, perceived performance, resonance and imagery	Future purchase intent
French and Smith/2010/EJM	Political Party/UK	Survey/BCM/132	Measurement of political party brand equity	Brand associations	Strength, favorability and uniqueness	Conceptual brand positioning
So and King/2010/IJCHM	Hotel/Australia	Survey/SEM/288	Measuring Hotel brand equity	Service experience, brand awareness, perceived value, brand personality, organizational associations, overall brand equity	Advertising, promotions, WOM, publicity, core service, servicescape, employee service	Hotel brand equity
Kimpakorn and Tocquer/2010/JSM	Hotel/Thailand	Survey/SEM/250	Measuring service brand equity	Brand awareness, perceived quality, brand differentiation, core service brand associations, supporting brand associations, brand trust, brand relationship		Service brand equity
Jhu and Kuo/2010/AIEEE Society	Online retail/Taiwan	Survey/SEM/154	Measurement of brand equity for online retailers	Brand awareness, perceived quality, trust associations, emotional connection, brand loyalty		Willingness to pay price premium
Broyles et al./2009/JMTP	Cola and restaurant brand/USA	Interview and survey data/SEM/450	Examining brand equity antecedent and consequence relationships	Reliability, effectiveness, brand awareness, loyalty and brand attitude	Perceived quality, perceived performance, resonance and imagery	Future purchase intent

Fetscherin and Toncar/2009/BM	Automobiles/USA, Japan, Germany	Secondary data/Econometric modeling/79	Measuring BE in automobile sector	Price and brand attributes		Influence of BE on price
Ranatunga and Ewing/2009/JBR	IT brand/USA	Secondary data/Case Study Approach	Measurement of brand capability strength	Leadership, stability, market, internationality, trend, support, protection		Brand Capability Strength
Chen/2009/JBE	Electronic brands/Taiwan	Questionnaire survey/SEM/254	Green brand equity	Green image, satisfaction, trust		Green brand equity
Burmann et al./2009/JBR		Conceptual framework	Identity based measure of brand equity	Behavioral and attitudinal measures of brand strength	Core offerings, brand commitment, brand citizenship behavior	Internal brand equity
Chang and Liu/2009/SIJ	Multiple brands/Taiwan	Questionnaire survey/SEM/456	Measurement of BE outcomes (preference and behavior)	Brand equity, brand attitude, brand image, brand preference/intent	Awareness, associations, perceived quality, loyalty, brand attitude, user image, corporate image, service image, preference, intention	Brand preference and purchase intention
Srivatava/2009/JSM	Multiple brands/India	Survey/descriptive statistics/150	Whether BE index and score can be used to assess the effectiveness of brand strategy	Customer ranking, expectation, desire, pricing, service expectation		BE index and Brand equity Score
Brodie et al./2009/JBR	Airline/New Zealand	Survey/SEM/1016	Measuring customer-based service brand equity	Brand image, company image, employee and company trust, service quality and cost, customer value, customer loyalty		Service brand equity
Das et al./2009/BM	Conceptual framework/UK		Measurement to an integrated system of brand management	Attitudinal equity and behavioral equity	Functional properties, brand image, emotional needs, personality, intrinsic brand worth, price	Brand value
Buil et al./2008/JPBM	Multiple brands/UK and Spain	Questionnaire Survey/SEM/1242	Development of a cross-national scale for brand equity	Brand awareness, perceived quality, brand loyalty, brand associations	perceived value, brand personality, organizational associations as determinants of brand associations	Brand equity

Sinha et al./2008/AMJ	Television/Australia	Conjoint Analysis/Econometric modeling/85	Measurement of CBBE using hierarchical Bayes Methodology	Brand awareness, brand attributes, brand loyalty, perceived quality, trust, pride	Price, size	Monetary equivalent value of each BE sub-components
Hofmeyr et al./2008/IJMR	Multiple brands/Multiple countries	Survey/Zipf distribution/9583	Measurement of brand equity using zipf distribution method	Brand awareness, consideration, performance, share of wallet		Increase in market share
Kim et al./2008/JBR	Hospital/South Korea	Questionnaire survey/SEM/532	Measuring brand equity of hospital brands	Trust, satisfaction, relationship commitment, awareness, loyalty		Brand image
Chadwick and Holt/2008/MR	Sports/UK	Conceptual model	Measurement of brand equity in sports sector	Presence, relevance, performance, advantage, bonding		Latent brand equity
Pappu and Quester/2008/JPBM	Retail brands/Australia	Survey/SEM/422	Comparison of BE for departmental store and clothing store	Awareness, associations, perceived quality, loyalty		Brand equity
Rajasekar and Nalina/2008/JMC	Durable goods/India	Survey/SEM/331	Measurement of brand equity for durable goods	Performance, social image, value, trustworthiness, attachment		Brand equity
Kayaman and Arasli/2007/MSQ	Hotel/Cyprus	Survey/Descriptive statistics and SEM/345	Measuring brand equity in hotel industry	Brand awareness, brand image, perceived quality, brand loyalty	Tangibility, responsiveness, reliability, assurance and empathy	Brand Image
Wang et al./2007/AMJ	Financial products/Australia	Survey data/SEM and DCE/1600	Comparison of SEM and DCE in predicting BE responses	Brand investment, consistency, credibility, clarity, perceived risk, perceived quality, information cost saved		Brand equity responses
Ross/2006/JSM	Sports brands/USA		Measuring spectator –based brand equity	Brand awareness and brand associations		Attitudinal and behavioral Brand equity outcomes

Morrison and Eastburn/2006/AMJ	Beef brands/Australia	Survey Interview /SEM/	Measuring brand equity in commodity market	Perceived quality, self image, category involvement		Brand choice
Fernandez-Barcala and Gonzalez-Diaz/2006/IJRM	Fruits and Vegetables/Spain	Secondary sources and interview/case study approach	Measuring brand equity in fruits and vegetables sector	Information asymmetry, search cost, external controls, co-branding		Brand name value
Pappu and Quester/2006/JRCS	Retail brands/Australia	Survey/SEM/601	Measurement of BE in retail sector	Awareness, associations, perceived quality, loyalty		Retail Brand equity
Baker et al./2005/IJMR	Pharmaceuticals and FMCG	Survey /Descriptive statistics	Mind versus market share as a measure of brand equity	Share of mind and market share		Brand equity
Kim and Kim/2005/TM	Hotels and Restaurants/USA	Survey Data/Step-wise regression analysis	Relationship between BE and Firm performance	Brand awareness, brand image, perceived quality and brand loyalty		Brand equity
Lebar et al./2005/JAR	Multiple brands/USA	Survey data/Descriptive Statistics	Implications of joint branding programs on BE	Differentiations, relevance, esteem, knowledge		Increase in brand attribute associations
Na and Marshall/2005/JPBM	Online search engine/South Korea and Singapore	Questionnaire survey/regression analysis	BE in cyber space	Brand power	Awareness, image	Satisfaction, purchase intent, loyalty
Pappu et al./2005/JPBM	Cars and Television/Australia	Questionnaire survey /SEM/539	Measurement of customer-based brand equity	Awareness, associations, perceived quality and brand loyalty		Customer-based brand equity
Reynolds and Phillips/2005/JAR	Cola brands/USA	Internet survey/descriptive statistics/342	Selection of appropriate brand equity metrics	Market share, loyalty contribution, leveragability, sales	Quality perception, price	Brand equity index and share of market
Rubinson and Pfeiffer/2005/JAR	Telecommunication brands/USA	Telephonic interview/descriptive statistics/8000	Identification of brand key performance indicators	Loyalty, favorability,	Retention, market share, acquisition, target sales	Brand loyalty
Srinivasan et al./2005/MS	Digital phone brands/Korea	Survey data/econometric modeling	Measurement of brand equity and its sources	Brand awareness, brand preference, availability	Multi-attribute preference and attribute perception biases	Brand choice probability

Wiedmann/2005/BM	Energy sector/Germany	Interview data/SEM/250	Measuring brand equity in energy sector	Localization, Customer orientation, reliability, competence, price and retention		Customer retention
Atilgan et al./2005/MIP	Beverage industry/Turkey	Survey/SEM/255	Measuring BE in beverage industry	Brand awareness, perceived quality, brand associations, brand loyalty		Brand equity
Heish/2004/JIM	Cars/Multiple countries	Cross National Survey Data/ Descriptive statistics	Measurement of Global brand equity	Brand recognition, Differential attachment, market size		Global brand equity (GBE)
Washburn et al./2004/P&M	Toilet Cleaner/USA	Questionnaire survey /SEM	Brand alliance effect on CBBE	Brand awareness, brand associations, perceived quality, brand loyalty, overall brand equity		Customer based brand equity
Netemeyer et al./2004/JBR	Multiple brands/USA	Questionnaire survey /SEM	Measurement of customer-based brand equity	Core CBBE facets and brand related associations	Uniqueness and price premium	Customer-based brand equity
Punj and Hillyer/2004/JCP	Soap and toothpaste/USA	Questionnaire survey /SEM/100	Measurement of customer-based brand equity	Brand knowledge and strength of brand preference	Belief, affect, intent, preference and brand heuristic	Global brand attitude
Ye and Raaij/2004/JMC	Hypothetical FMCG brand names/Netherland	Psychological experiments/20	Extending brand equity with signal detection theory	Brand awareness and brand liking	Brand recognition sensitivity and biasness and brand likeability sensitivity and biasness	Brand equity (awareness and liking)
deChernatony et al./2004/SIJ	Financial services/UK	Survey/SEM/600	Measurement of brand equity in financial services	Conative brand loyalty, affective brand loyalty, satisfaction, brand reputation	Consideration, recommendation, liking, overall satisfaction with the brand and satisfaction with staff and products	Brand equity
Ailawadi et al./2003/JM	Food items/USA	Econometric modeling	Revenue premium as an outcome measure of BE	Price and volume		Revenue premium

Mortanges and van Riel/2003/EMJ	Multiple brands/Norway	Survey data/descriptive statistics/1500	Brand equity and shareholder value	Brand stature and brand strength	Differentiations, relevance, esteem, knowledge	Brand value
Rajh et al./2003/BFJ	Multiple FMCG brands/Croatia	Telephonic survey/Descriptive statistics/1960	Measurement of brand equity	Market share	Preference and repeat buying intent	Market share
Wansink/2003/QMR	Multiple brands/USA	Laddering interview/Descriptive statistics/1200	Measurement of brand equity and leveraging potential	Brand value	Accomplishment, belonging, self-fulfillment, self-esteem, family, satisfaction, security	Hierarchical brand value map
Jourdan/2002/ACR	Ice-cream/USA	Panel data/Conjoint analysis	Monetary Value of brand equity	Attribute and non-attribute based component of BE		Monetary value of brand equity
Vazquez et al./2002/JMM	Sportswear brands/Spain	Survey interview/SEM/1054	Measurement of customer-based brand equity	Product utility and brand name utility	Functional and symbolic utility of product and brand	Attitudinal Brand equity Outcomes
Dillon et al./2001/JMR	FMCG brands/USA	Association Tests	Attribute rating as a measure of brand equity	Attribute rating		Brand equity
Faircloth et al./2001/JMTP	FMCG brands/USA	Questionnaire survey /SEM	Effect of brand image and brand attitude on brand equity	Brand image and brand attitude	Brand attribute associations	Brand equity
Mackay/2001/JSM	Multiple service brands/New Zealand	Various data sources/Descriptive statistics/383	Measurement of BE in services	Used Aggarawal and Rao's (1996) 10 measure categories		Brand equity
Yoo and Donthu/2001/JBR	Athletic shoes, cameras and television sets/Korea and USA	Questionnaire survey/SEM/1530	Measuring customer-based brand equity	Brand awareness/associations, perceived quality and brand loyalty		Overall brand equity
Krishnan and Hartline/2001/JSM	Multiple brands/USA	Survey/Descriptive Statistics/184	Measurement of service brand equity	Quality, value, patronage motivation, trustworthiness, familiarity, price premium		Service brand equity
Berry/2000/JAMS	Services/USA	Conceptual framework for service branding	Measurement of Brand equity in services	Brand awareness and Brand meaning	Company's presented brand, external brand communication, customer experience	Brand Equity
Prasad and Dev/2000/CHRAQ	Hotel/USA	Questionnaire survey and Panel data	Customer centric framework for assessing brand awareness and brand	Brand Awareness Index and Brand Performance index	Satisfaction, return intent, price value relationship, preference, top-of-mind brand recall	Brand Equity index

			performance			
Morgan/2000/IJMR	Multiple service brands/USA	Questionnaire survey	Customer oriented framework for brand equity and brand loyalty	Affinity and Functional performance	Affinity, identification and approval	Brand equity
Erdem and Swait/1998/JCP	Jeans and juice/USA	Econometric Modelling	BE as a signaling Phenomena	Credibility and Clarity	Perceived quality, perceived risk, information cost saved	Expected Utility
Aaker/1996/CMR	Multiple brands/USA	Questionnaire survey /Descriptive statistics	Measurement of BE across products and markets	Loyalty, Perceived quality, associations, awareness and behavior	Price premium, satisfaction/loyalty, perceived quality, leadership, perceived value, brand personality, organizational associations, awareness, market share, price and distribution indices.	Brand Equity Ten Index
Cobb-Walgren et al./1995/JA	Multiple categories/USA	Survey/Descriptive statistics/182	Measuring brand equity, brand preference and purchase intent	Brand awareness, brand associations and perceived quality		Brand equity
Francois and MacLachlan/1995/IJRM	Multiple categories/USA	Survey/Descriptive statistics/	Ecological validation of alternative measures of brand equity	Intrinsic and extrinsic measures of brand strength	Knowledge, attitude, preference and behavior	Brand equity

APPENDIX-III

RESULT TABLES

Table 7.2: Exploratory Factor Analysis Results (n=486)

(Cronbach α)		Components									
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Brand Recognition (α=0.88)	Item 1	**0.788**	0.084	0.175	0.016	0.118	0.067	0.135	0.100	0.101	0.072
	Item 2	**0.769**	0.111	0.110	0.188	0.070	0.065	0.122	0.092	0.080	0.113
	Item 3	**0.768**	0.132	-0.056	0.244	0.065	-0.045	0.012	0.025	0.071	-0.001
	Item 4	**0.758**	0.069	0.117	0.215	0.070	0.051	0.055	0.078	0.000	-0.016
	Item 5	**0.719**	0.088	0.088	0.094	0.013	0.084	0.096	0.153	0.160	0.118
Brand Recall (α=0.81)	Item 6	0.016	**0.791**	0.146	0.107	0.113	0.043	0.162	0.142	0.060	0.094
	Item 7	-0.027	**0.779**	0.039	0.098	0.200	0.083	0.085	-0.029	0.070	0.068
	Item 8	0.050	**0.649**	0.139	0.175	0.062	0.040	0.020	0.065	0.103	0.080
	Item 9	0.136	**0.567**	0.126	0.020	0.142	0.068	0.068	0.330	0.176	0.070
Attribute Associations (α=0.85)	Item 10	0.094	0.132	**0.774**	0.204	0.047	-0.052	0.112	0.078	0.159	0.114
	Item 11	0.080	0.171	**0.765**	0.099	0.049	0.048	-0.035	0.046	0.039	0.013
	Item 12	0.166	0.121	**0.638**	0.148	0.018	0.051	0.206	0.202	0.206	0.117
	Item 13	0.073	0.270	**0.623**	0.138	0.290	0.039	0.198	0.071	0.025	0.063
	Item 14	0.142	0.112	**0.592**	0.045	0.216	0.191	0.235	0.086	0.142	0.280
Benefits Associations (α=0.85)	Item 15	0.244	0.063	0.056	**0.820**	0.074	0.066	0.096	0.064	0.185	0.089
	Item 16	0.231	0.078	0.058	**0.784**	0.025	0.051	0.066	-0.034	0.205	0.093
	Item 17	0.097	0.177	0.187	**0.718**	0.123	0.058	-0.006	0.104	0.037	0.006
	Item 18	0.126	0.201	0.208	**0.638**	0.102	0.015	-0.045	0.158	-0.003	0.092
	Item 19	0.294	0.106	0.143	**0.724**	0.330	0.128	-0.007	0.155	0.104	-0.015
Attitude Association (α=0.77)	Item 20	0.232	0.201	0.027	0.061	**0.735**	0.081	0.006	0.018	0.128	0.021
	Item 21	-0.071	0.108	0.026	0.144	**0.714**	0.091	0.037	-0.039	0.084	-0.034
	Item 22	0.103	-0.082	0.197	0.051	**0.613**	0.032	-0.061	0.113	0.120	0.155
	Item 23	0.071	0.166	0.115	0.019	**0.578**	0.053	0.087	0.031	0.169	0.140
	Item 24	0.030	0.069	0.020	0.021	0.062	**0.822**	-0.069	-0.103	0.046	0.007

Attitudinal Loyalty (α=0.79)	Item 25	0.054	0.050	0.043	0.044	0.114	**0.808**	0.054	-0.117	0.064	-0.013
	Item 26	0.002	-0.006	-0.050	-0.019	0.079	**0.726**	0.099	0.234	-0.030	-0.035
	Item 27	0.081	0.071	0.118	0.065	-0.030	**0.719**	-0.034	0.015	0.013	-0.029
	Item 28	0.115	0.005	0.283	0.185	-0.014	**0.624**	-0.003	0.129	0.146	0.088
Satisfaction (α=0.82)	Item 29	0.206	0.135	0.117	0.053	0.016	0.060	**0.810**	0.102	0.081	-0.024
	Item 30	0.105	0.056	0.135	-0.020	0.125	-0.066	**0.787**	0.099	-0.030	-0.020
	Item 31	0.049	0.156	0.130	0.086	-0.051	0.047	**0.697**	0.172	0.222	-0.023
	Item 32	0.085	0.110	0.347	0.126	0.095	0.141	**0.684**	-0.018	0.189	0.129
	Item 33	0.108	0.093	-0.044	0.015	0.189	-0.010	**0.630**	0.003	-0.017	-0.188
Brand Perception (α=0.82)	Item 34	0.081	0.119	-0.031	0.178	0.045	-0.022	0.091	**0.789**	0.064	0.055
	Item 35	0.177	0.190	0.126	0.031	0.019	-0.009	0.128	**0.778**	0.092	0.047
	Item 36	0.126	0.096	0.233	0.014	0.077	0.007	0.130	**0.763**	0.062	-0.052
	Item 37	0.060	0.077	0.052	-0.044	0.087	-0.021	-0.007	**0.818**	0.014	-0.025
Intention to Purchase (α=0.76)	Item 38	0.104	0.148	0.158	0.189	0.183	0.044	0.119	0.057	**0.739**	-0.013
	Item 39	0.063	0.043	0.146	0.118	0.192	-0.021	0.103	0.056	**0.719**	0.113
	Item 40	0.150	0.096	0.173	-0.105	0.170	0.101	0.050	0.087	**0.596**	0.074
Behavioural Loyalty (α=0.83)	Item 41	0.044	0.098	0.069	0.137	0.026	-0.010	-0.052	0.055	0.001	**0.864**
	Item 42	0.116	0.084	0.200	0.130	0.039	-0.051	0.017	-0.023	0.171	**0.818**
	Item 43	0.060	0.077	0.052	-0.044	0.087	-0.021	-0.007	0.014	-0.025	**0.818**
Eigen Value		**13.393**	**3.090**	**2.635**	**2.582**	**2.338**	**2.017**	**1.960**	**1.786**	**1.538**	**1.495**
Variance %		**23.916**	**5.518**	**4.705**	**4.610**	**4.176**	**3.602**	**3.500**	**3.189**	**2.747**	**2.670**
Extraction Method: Principal Component Analysis Rotation Method: Varimax with Kaiser Normalization.											
Kaiser-Meyer-Olkin Measure of Sampling Adequacy=0.836, Approx. Chi-Square-6140.296, df= 1540, Sig.=0.000											

Measurement Model Fit Summary (First-Order Model, for n = 486)

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	174	1020.783	498	0.004	2.050
Saturated model	861	0.000	0		
Independence model	41	7840.581	820	0.000	9.562

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	0.035	0.902	0.878	0.720
Saturated model	0.000	1.000		
Independence model	0.396	0.205	0.165	0.195

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	0907	0.962	0.986	0.983	0.986
Saturated model	1.000		1.000		1.000
Independence model	0.000	0.000	0.000	0.000	0.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	0.838	0.754	0.826
Saturated model	0.000	0.000	0.000
Independence model	1.000	0.000	0.000

NCP

Model	NCP	LO 90	HI 90
Default model	522.783	35.912	74.695
Saturated model	0.000	0.000	0.000
Independence model	7020.581	6740.271	7307.402

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	2.278	0.292	0.104	0.505
Saturated model	0.000	0.000	0.000	0.000
Independence model	22.661	20.291	19.481	21.120

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	0.031	0.012	0.027	1.000
Independence model	0.157	0.154	0.160	0.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	1136.161	1184.240	1805.943	1979.943
Saturated model	1722.000	1959.908	5036.269	5897.269
Independence model	7922.581	7933.910	8080.403	8121.403

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	3.284	3.095	3.496	3.423
Saturated model	4.977	4.977	4.977	5.664
Independence model	22.898	22.087	23.727	22.930

HOELTER

Model	HOELTER 0.05	HOELTER 0.01
Default model	329	341
Independence model	40	41

Scalar Estimates: Measurement Model (First-Order Model, for n = 486)

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Recognition4	<---	Recognition	1.000				
Recognition2	<---	Recognition	1.275	.114	11.219	***	
Recognition1	<---	Recognition	1.019	.096	10.638	***	
Recall7	<---	Recall	1.000				
Recall6	<---	Recall	1.971	.357	5.521	***	
Recall3	<---	Recall	2.803	.471	5.955	***	
Attribute4	<---	Attribute	1.000				
Attribute2	<---	Attribute	1.656	.184	8.998	***	
Attribute1	<---	Attribute	2.154	.234	9.199	***	
Benefit7	<---	Benefits	1.000				
Benefit6	<---	Benefits	.931	.069	10.530	***	
Benefit5	<---	Benefits	1.304	.091	14.273	***	
Attitude5	<---	Attitude	1.000				
Attitude2	<---	Attitude	.763	.237	3.226	.001	
Attitude1	<---	Attitude	1.953	.505	3.868	***	
AL5	<---	Loyalty	1.000				
AL4	<---	Loyalty	1.803	.262	6.887	***	
AL1	<---	Loyalty	1.684	.262	6.428	***	
Satisfaction3	<---	Satisfaction	1.000				
Satisfaction2	<---	Satisfaction	1.080	.070	15.452	***	
Satisfaction1	<---	Satisfaction	.776	.066	4.149	***	

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
Recg4	<---	Recognition	.829
Recg2	<---	Recognition	.715
Recg1	<---	Recognition	.831
Recl7	<---	Recall	.837
Recl6	<---	Recall	.751
Recl3	<---	Recall	.834
Attribute4	<---	Attribute	.770
Attribute2	<---	Attribute	.832
Attribute1	<---	Attribute	.749
Benefit7	<---	Benefits	.692
Benefit6	<---	Benefits	.794
Benefit5	<---	Benefits	.829
Attitude5	<---	Attitude	.829
Attitude2	<---	Attitude	.701
Attitude1	<---	Attitude	.779
AL5	<---	Loyalty	.664
AL4	<---	Loyalty	.844
AL1	<---	Loyalty	.759
Satisfaction3	<---	Satisfaction	.839
Satisfaction2	<---	Satisfaction	.811
Satisfaction1	<---	Satisfaction	.729

Covariances: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Recognition	<-->	Recall	.077	.016	4.938	***	
Recognition	<-->	Attribute	.156	.023	6.664	***	
Recognition	<-->	Benefits	.240	.030	8.053	***	
Recognition	<-->	Attitude	.061	.018	3.426	***	
Recognition	<-->	Loyalty	.096	.017	5.747	***	
Recognition	<-->	Satisfaction	.253	.032	8.015	***	
Recall	<-->	Attribute	.066	.014	4.824	***	
Recall	<-->	Benefits	.096	.018	5.216	***	
Recall	<-->	Attitude	.038	.012	3.322	***	
Recall	<-->	Loyalty	.050	.011	4.605	***	
Recall	<-->	Satisfaction	.090	.018	5.070	***	
Attribute	<-->	Benefits	.180	.025	7.098	***	
Attribute	<-->	Attitude	.061	.017	3.620	***	
Attribute	<-->	Loyalty	.079	.014	5.526	***	
Attribute	<-->	Satisfaction	.207	.029	7.240	***	
Benefits	<-->	Attitude	.085	.023	3.703	***	
Benefits	<-->	Loyalty	.123	.020	6.261	***	
Benefits	<-->	Satisfaction	.304	.034	8.993	***	
Attitude	<-->	Loyalty	.037	.011	3.341	***	
Attitude	<-->	Satisfaction	.084	.023	3.648	***	
Loyalty	<-->	Satisfaction	.122	.020	6.126	***	
e23	<-->	e25	.180	.032	5.656	***	
e31	<-->	e33	.110	.025	4.397	***	
e32	<-->	e33	.083	.020	4.081	***	

Correlations: (Group number 1 - Default model)

			Estimate
Recognition	<-->	Recall	.418
Recognition	<-->	Attribute	.526
Recognition	<-->	Benefits	.310
Recognition	<-->	Attitude	.430
Recognition	<-->	Loyalty	.414
Recognition	<-->	Satisfaction	.596
Recall	<-->	Attribute	.353
Recall	<-->	Benefits	.390
Recall	<-->	Attitude	.460
Recall	<-->	Loyalty	.440
Recall	<-->	Satisfaction	.492
Attribute	<-->	Benefits	.344
Attribute	<-->	Attitude	.369
Attribute	<-->	Loyalty	.531
Attribute	<-->	Satisfaction	.502
Benefits	<-->	Attitude	.372
Benefits	<-->	Loyalty	.323
Benefits	<-->	Satisfaction	.448
Attitude	<-->	Loyalty	.536
Attitude	<-->	Satisfaction	.414
Loyalty	<-->	Satisfaction	.452
e23	<-->	e25	.313
e31	<-->	e33	.261
e32	<-->	e33	.285

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
Recognition	.262	.042	6.251	***	
Recall	.044	.015	3.048	.002	
Attribute	.137	.029	4.677	***	
Benefits	.334	.043	7.803	***	
Attitude	.036	.020	1.828	***	
Loyalty	.053	.015	3.627	***	
Satisfaction	.385	.048	7.942	***	
e2	.414	.034	6.084	***	
e3	.322	.033	9.831	***	
e4	.294	.026	7.158	***	
e5	.367	.027	9.629	***	
e6	.399	.032	6.638	***	
e8	.245	.031	7.994	***	
e11	.478	.035	4.469	***	
e13	.276	.025	6.242	***	
e14	.342	.034	9.964	***	
e15	.296	.026	6.221	***	
e16	.362	.028	5.830	***	
e17	.345	.035	9.730	***	
e23	.627	.047	11.464	***	
e25	.529	.039	6.674	***	
e26	.372	.052	7.153	***	
e27	.313	.023	7.570	***	
e28	.327	.029	11.472	***	
e30	.460	.036	9.791	***	
e31	.333	.029	8.477	***	
e32	.159	.022	7.109	***	
e33	.530	.039	7.758	***	

Squared Multiple Correlations: (Group number 1 - Default model

			Estimate
Recg4			0.574
Recg2			0.408
Recg1			0.322
Recl7			0.431
Recl6			0.568
Recl3			0.391
Attribute4			0.667
Attribute2			0.469
Attribute1			0.442
Benefit7			0.792
Benefit6			0.840
Benefit5			0.752
Attitude5			0.732
Attitude2			0.509
Attitude1			0.515
AL5			0.384
AL4			0.590
AL1			0.438
Satisfaction3			0.595
Satisfaction2			0.667
Satisfaction1			0.804

Measurement Model Fit Summary (Second-Order Model, for n = 486)

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	97	892.405	764	0.001	1.168
Saturated model	861	0.000	0		
Independence model	41	7840.581	820	0.000	9.562

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	2.579	0.371	0.168	0.598
Saturated model	0.000	0.000	0.000	0.000
Independence model	22.661	20.291	19.481	21.120

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	0.055	0.891	0.877	0.790
Saturated model	0.000	1.000		
Independence model	0.396	0.205	0.165	0.195

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	0.022	0.015	0.028	1.000
Independence model	0.157	0.154	0.160	0.000

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	0.886	0.878	0.982	0.980	0.982
Saturated model	1.000		1.000		1.000
Independence model	0.000	0.000	0.000	0.000	0.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	1086.405	1113.208	1459.789	1556.789
Saturated model	1722.000	1959.908	5036.269	5897.269
Independence model	7922.581	7933.910	8080.403	8121.403

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	0.952	0.826	0.915
Saturated model	0.000	0.000	0.000
Independence model	1.000	0.000	0.000

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	3.140	2.937	3.367	3.217
Saturated model	4.977	4.977	4.977	5.664
Independence model	22.898	22.087	23.727	22.930

NCP

Model	NCP	LO 90	HI 90
Default model	128.405	58.190	206.876
Saturated model	0.000	0.000	0.000
Independence model	7020.581	6740.271	7307.402

HOELTER

Model	HOELTER 0.05	HOELTER 0.01
Default model	322	333
Independence model	40	41

Scalar Estimates: Measurement Model (Second-Order Model, for n = 486)

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Recall	<---	KE	1.000				
Attribute	<---	AE	2.294	.670	3.425	***	
Benefits	<---	AE	3.411	.954	3.575	***	
Attitude	<---	AE	1.000				
Loyalty	<---	RE	.438	.061	7.234	***	
Satisfaction	<---	RE	1.000				
Recognition	<---	KE	2.323	.424	5.481	***	
Recg4	<---	Recognition	1.000				
Recg2	<---	Recognition	1.253	.111	11.249	***	
Recg1	<---	Recognition	1.009	.094	10.707	***	
Recl7	<---	Recall	1.000				
Recl6	<---	Recall	2.000	.360	5.555	***	
Recl3	<---	Recall	2.660	.451	5.899	***	
Attribute4	<---	Attribute	1.000				
Attribute2	<---	Attribute	1.657	.184	9.014	***	
Attribute1	<---	Attribute	2.130	.232	9.175	***	
Benefit7	<---	Benefits	1.000				
Benefit6	<---	Benefits	.729	.070	10.480	***	
Benefit5	<---	Benefits	1.307	.092	14.264	***	
Attitude5	<---	Attitude	1.000				
Attitude2	<---	Attitude	.708	.254	2.788	.005	
Attitude1	<---	Attitude	2.090	.602	3.469	***	
AL5	<---	Loyalty	1.000				
AL4	<---	Loyalty	1.724	.246	7.016	***	
AL1	<---	Loyalty	1.549	.242	6.392	***	
Satisfaction3	<---	Satisfaction	1.000				
Satisfaction2	<---	Satisfaction	1.097	.073	15.127	***	
Satisfaction1	<---	Satisfaction	.364	.069	5.251	***	

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
Recall	<---	KE	.872
Attribute	<---	AE	.948
Benefits	<---	AE	.905
Attitude	<---	AE	.827
Loyalty	<---	RE	.983
Satisfaction	<---	RE	.879
Recognition	<---	KE	.840
Recg4	<---	Recognition	.629
Recg2	<---	Recognition	.749
Recg1	<---	Recognition	.694
Recl7	<---	Recall	.334
Recl6	<---	Recall	.567
Recl3	<---	Recall	.740
Attribute4	<---	Attribute	.473
Attribute2	<---	Attribute	.763
Attribute1	<---	Attribute	.800
Benefit7	<---	Benefits	.728
Benefit6	<---	Benefits	.573
Benefit5	<---	Benefits	.791
Attitude5	<---	Attitude	.228
Attitude2	<---	Attitude	.177
Attitude1	<---	Attitude	.543
AL5	<---	Loyalty	.399
AL4	<---	Loyalty	.589
AL1	<---	Loyalty	.479
Satisfaction3	<---	Satisfaction	.727
Satisfaction2	<---	Satisfaction	.867
Satisfaction1	<---	Satisfaction	.300

Covariances: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
KE	<-->	AE	.014	.007	1.109	***	
KE	<-->	RE	.010	.005	1.052	***	
AE	<-->	RE	.025	.014	1.763	***	

Correlations: (Group number 1 - Default model)

			Estimate
KE	<-->	AE	1.046
KE	<-->	RE	1.041
AE	<-->	RE	1.044
e23	<-->	e25	.317
e32	<-->	e33	.165

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
KE	.035	.012	2.956	.003	
AE	.024	.013	1.814	.070	
RE	.293	.044	6.645	***	
e34	.079	.019	4.123	***	
e35	.011	.005	2.220	.026	
e36	.014	.006	2.175	.030	
e37	.060	.016	3.700	***	
e38	.011	.012	.917	.359	
e39	.002	.006	.339	.735	
e40	.086	.021	4.062	***	
e2	.408	.034	11.984	***	
e3	.328	.033	9.921	***	
e4	.294	.026	11.111	***	
e5	.365	.027	13.544	***	
e6	.387	.032	12.229	***	
e8	.268	.032	8.436	***	
e11	.477	.036	13.433	***	
e13	.272	.025	11.043	***	
e14	.351	.035	10.007	***	
e15	.296	.026	11.209	***	
e16	.363	.028	12.833	***	
e17	.342	.035	9.661	***	
e23	.628	.047	13.448	***	
e25	.533	.039	13.694	***	
e26	.360	.058	6.249	***	
e27	.308	.023	13.409	***	
e28	.327	.029	11.282	***	
e30	.471	.037	12.855	***	
e31	.339	.030	11.449	***	
e32	.151	.023	6.555	***	
e33	.509	.037	13.589	***	

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
KE	.002	.002	1.177	.239	
AE	.252	.039	6.529	***	
RE	.099	.022	4.563	***	
e21	.006	.002	2.412	.016	
e22	.088	.021	4.120	***	
e23	.167	.025	6.634	***	
e24	.121	.022	5.601	***	
e25	.007	.005	1.488	.137	
e1	.084	.009	9.877	***	
e2	-.170	.074	-2.294	.022	
e3	.218	.025	8.746	***	
e4	.229	.025	9.003	***	
e5	.025	.027	.939	.348	
e6	.289	.038	7.555	***	
e7	.090	.011	8.247	***	
e8	.054	.009	6.167	***	
e9	.102	.012	8.755	***	
e10	.094	.011	8.164	***	
e11	.066	.009	7.423	***	
e12	.068	.013	5.090	***	
e13	.041	.009	4.649	***	
e14	.091	.010	9.581	***	
e15	.211	.022	9.588	***	
e16	.082	.009	8.982	***	
e17	.160	.017	9.445	***	
e18	.051	.007	7.489	***	
e19	.070	.014	4.965	***	
e20	.132	.016	7.986	***	
e26	.230	.024	9.755	***	
e27	.165	.017	9.410	***	
e28	.196	.021	9.263	***	
e29	.102	.020	5.014	***	
e30	.130	.015	8.422	***	
e31	.207	.022	9.378	***	
e32	.146	.017	8.733	***	
e33	.164	.019	8.824	***	
e34	.163	.018	8.910	***	
e35	.049	.010	4.984	***	
e36	.198	.023	8.607	***	
e37	.063	.010	6.613	***	

Squared Multiple Correlations (Group number 1-Default model)

	Estimate
Satisfaction	.772
Loyalty	.965
Attitude	.684
Benefits	.820
Attribute	.899
Recall	.760
Recognition	.705
Satisfaction1	.090
Satisfaction2	.751
Satisfaction3	.528
AL1	.229
AL4	.347
AL5	.159
Attitude1	.295
Attitude2	.031
Attitude5	.052
Benefit5	.625
Benefit6	.328
Benefit7	.530
Attribute1	.640
Attribute2	.582
Attribute4	.224
Recl3	.548
Recl6	.322
Recl7	.112
Recg1	.481
Recg2	.561
Recg4	.396

Model Fit (Structural Model)

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	34	164.560	119	0.004	1.383
Saturated model	153	0.000	0		
Independence model	17	2087.836	136	0.000	15.352

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	0.476	0.132	0.046	0.241
Saturated model	0.000	0.000	0.000	0.000
Independence model	6.034	5.641	5.224	6.079

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	0.054	0.948	0.933	0.737
Saturated model	0.000	1.000		
Independence model	0.375	0.336	0.253	0.298

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	0.033	0.020	0.045	0.992
Independence model	0.204	0.196	0.211	0.000

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	0.921	0.960	0.977	0.973	0.977
Saturated model	1.000		1.000		1.000
Independence model	0.000	0.000	0.000	0.000	0.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	232.560	236.291	363.437	397.437
Saturated model	306.000	322.793	894.947	1047.947
Independence model	2121.836	2123.702	2187.274	2204.274

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	0.875	0.806	0.855
Saturated model	0.000	0.000	0.000
Independence model	1.000	0.000	0.000

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	0.672	0.586	0.781	0.683
Saturated model	0.884	0.884	0.884	0.933
Independence model	6.132	5.716	6.571	6.138

NCP

Model	NCP	LO 90	HI 90
Default model	45.560	15.810	83.357
Saturated model	0.000	0.000	0.000
Independence model	1951.836	1807.629	2103.422

HOELTER

Model	HOELTER 0.05	HOELTER 0.01
Default model	306	332
Independence model	28	30

Scalar Estimates (Structural Model): Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Recall	<---	KE	1.000				
Attribute	<---	AE	2.376	.724	3.283	.001	
Benefits	<---	AE	3.383	.989	3.423	***	
Attitude	<---	AE	1.000				
Loyalty	<---	RE	.429	.070	6.120	***	
Satisfaction	<---	RE	1.000				
Perception	<---	KE	-.916	.213	-1.950	***	
Intention	<---	KE	1.013	.282	3.597	***	
Behaviour	<---	KE	.583	.153	1.197		
Perception	<---	AE	2.423	.733	3.306	***	
Intention	<---	AE	1.302	.439	2.964	***	
Behaviour	<---	AE	2.142	.653	3.279	***	
Perception	<---	RE	.648	.088	7.349	***	
Intention	<---	RE	.364	.072	5.077	***	
Behaviour	<---	RE	.695	.050	1.875	***	
Recognition	<---	KE	2.112	.538	3.927	***	
Recg4	<---	Recognition	1.000				
Recg2	<---	Recognition	1.051	.103	10.219	***	
Recg1	<---	Recognition	.986	.093	10.580	***	
Recl7	<---	Recall	1.000				
Recl6	<---	Recall	2.004	.382	5.242	***	
Recl3	<---	Recall	2.551	.472	5.405	***	
Attribute4	<---	Attribute	1.000				
Attribute2	<---	Attribute	1.673	.189	8.853	***	
Attribute1	<---	Attribute	2.068	.233	8.879	***	
Benefit7	<---	Benefits	1.000				
Benefit6	<---	Benefits	.700	.069	10.201	***	
Benefit5	<---	Benefits	1.240	.092	13.486	***	
Attitude5	<---	Attitude	1.000				
Attitude2	<---	Attitude	.674	.257	2.620	***	
Attitude1	<---	Attitude	2.101	.631	3.332	***	
AL5	<---	Loyalty	1.000				
AL4	<---	Loyalty	1.678	.249	6.734	***	
AL1	<---	Loyalty	1.113	.215	5.183	***	
Satisfaction3	<---	Satisfaction	1.000				
Satisfaction2	<---	Satisfaction	.939	.075	12.511	***	
Satisfaction1	<---	Satisfaction	.219	.078	2.808	.005	
Perception1	<---	Perception	1.000				
Perception2	<---	Perception	.737	.073	10.107	***	
Perception3	<---	Perception	.476	.068	6.982	***	
Intention1	<---	Intention	1.000				
Intention2	<---	Intention	.565	.102	5.556	***	
Intention3	<---	Intention	.807	.117	6.872	***	
Loyalty1	<---	Behaviour	1.000				
Loyalty2	<---	Behaviour	.932	.137	6.803	***	
Loyalty3	<---	Behaviour	1.120	.154	7.261	***	

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
Recall	<---	KE	.949
Attribute	<---	AE	.980
Benefits	<---	AE	.875
Attitude	<---	AE	.829
Loyalty	<---	RE	.974
Satisfaction	<---	RE	.896
Perception	<---	KE	-.124
Intention	<---	KE	.430
Behaviour	<---	KE	.085
Perception	<---	AE	.537
Intention	<---	AE	.411
Behaviour	<---	AE	.742
Perception	<---	RE	.556
Intention	<---	RE	.445
Behaviour	<---	RE	.127
Recognition	<---	KE	.786
Recg4	<---	Recognition	.677
Recg2	<---	Recognition	.676
Recg1	<---	Recognition	.730
Recl7	<---	Recall	.341
Recl6	<---	Recall	.579
Recl3	<---	Recall	.723
Attribute4	<---	Attribute	.477
Attribute2	<---	Attribute	.776
Attribute1	<---	Attribute	.783
Benefit7	<---	Benefits	.751
Benefit6	<---	Benefits	.568
Benefit5	<---	Benefits	.774
Attitude5	<---	Attitude	.228
Attitude2	<---	Attitude	.169
Attitude1	<---	Attitude	.547
AL5	<---	Loyalty	.434
AL4	<---	Loyalty	.623
AL1	<---	Loyalty	.374
Satisfaction3	<---	Satisfaction	.785
Satisfaction2	<---	Satisfaction	.801
Satisfaction1	<---	Satisfaction	.195
Perception1	<---	Perception	.789
Perception2	<---	Perception	.638
Perception3	<---	Perception	.412
Intention1	<---	Intention	.546
Intention2	<---	Intention	.409
Intention3	<---	Intention	.616
Loyalty1	<---	Behaviour	.590
Loyalty2	<---	Behaviour	.498
Loyalty3	<---	Behaviour	.555

Covariances: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
e23	<-->	e25	.184	.032	5.773	***	
e31	<-->	e33	.119	.032	3.715	***	
e32	<-->	e33	.106	.029	3.618	***	

Correlations: (Group number 1 - Default model)

			Estimate
e23	<-->	e25	.318
e31	<-->	e33	.308
e32	<-->	e33	.310

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
e53	.043	.017	2.559	***	
e54	.024	.014	1.742	***	
e55	.356	.060	5.938	***	
e34	.119	.041	2.929	***	
e35	.005	.008	.571	***	
e36	.006	.008	.681	***	
e37	.083	.022	3.735	***	
e38	.011	.012	.896	***	
e39	.004	.009	.371	***	
e40	.087	.040	2.161	***	
e50	.188	.042	4.463	***	
e51	.107	.033	3.293	***	
e52	.085	.024	3.530	***	
e2	.366	.035	10.310	***	
e3	.406	.039	10.329	***	
e4	.265	.029	9.045	***	
e5	.363	.027	13.236	***	
e6	.380	.035	11.001	***	
e8	.283	.038	7.349	***	
e11	.475	.036	13.224	***	
e13	.259	.026	9.878	***	
e14	.378	.039	9.664	***	
e15	.275	.028	9.992	***	
e16	.366	.029	12.562	***	
e17	.367	.039	9.359	***	
e23	.628	.047	13.414	***	
e25	.534	.039	13.699	***	
e26	.358	.060	5.989	***	
e27	.298	.023	12.674	***	
e28	.306	.033	9.386	***	
e30	.526	.040	13.103	***	
e31	.275	.035	7.872	***	
e32	.218	.030	7.304	***	
e33	.538	.040	13.459	***	
e41	.294	.043	6.768	***	
e42	.383	.035	10.926	***	
e43	.534	.041	13.119	***	
e44	.563	.052	10.767	***	
e45	.380	.030	12.501	***	
e46	.254	.028	9.236	***	
e47	.371	.036	10.343	***	
e48	.523	.044	11.805	***	
e49	.559	.051	10.997	***	

Note: ***probability <.000

Squared Multiple Correlations (Group number 1-Default model)

	Estimate		Estimate
Perception	0.356	Loyalty	0.384
Perception1	0.600	Loyalty	0.590
Perception2	0.621	Loyalty	0.438
Perception3	0.535	Satisfaction	0.595
Intention	0.384	Satisfaction	0.667
Intention1	0.419	Satisfaction	0.804
Intention2	0.387		
Intention3	0.405		
Behaviour	0.409		
Behaviour1	0.392		
Behaviour2	0.306		
Behaviour3	0.433		
KE	0.387		
Recognition	0.253		
Recall	0.291		
AE	0.401		
Attribute	0.360		
Benefits	0.406		
Attitude	0.622		
RE	0.520		
Loyalty	0.672		
Satisfaction	0.649		
Recognition	0.574		
Recognition	0.408		
Recognition	0.322		
Recall	0.431		
Recall	0.568		
Recall	0.391		
Attribute	0.667		
Attribute	0.469		
Attribute	0.442		
Benefits	0.792		
Benefits	0.840		
Benefits	0.752		
Attitude	0.732		
Attitude	0.509		
Attitude	0.515		