

Influence of Physical Evidence on Service Brand Image Dimensions and Brand Equity

* *Somnath Mukherjee*

** *Shradha Shivani*

Abstract

Branding and brand equity benefits have long been established for goods. Services which are said to be unique and different from goods in view of its unique characteristics need a different approach. The marketers have been trying to influence the consumers through the various marketing mix elements. In services, apart from the traditional mix elements, there are additional elements that hold relevance, collectively referred to as extended marketing mix elements. Among the elements, physical evidence has a definitive influence on brand image and subsequent brand equity. Services are high in experience quality, are personal in nature, and the consumers' experience with the service firm is a key determinant to image perception and brand equity. Physical evidence encompasses the overall experience for the consumer and even the people element, another mix element, which includes the employees and the customers, who interact within the physical environment. A positive experience significantly affects the firm's brand equity. There is a dearth of research in the area of marketing mix influence on brand equity in the area of services. The present paper tries to empirically investigate the influence of physical evidence on brand image dimensions like user image, corporate image, and service image and consequently, brand equity in services through a study carried out in the retail banking sector. The findings hold significant value for marketers by aiding them in identifying the influence pattern.

Keywords: brand equity, physical evidence, brand image, retail banking, services

The role of brand equity in influencing consumers has long been established (Aaker, 1991; Keller, 1993; Swait et al., 1993; Yoo et al., 2000 etc). Brand equity benefits by positively influencing the consumers' perceptions, confidence, and increases the credibility for the firms, and also lowers the risk perception among consumers (Erdem, 1998; Keller, 2003). While there are many brand equity studies for goods, there is a dearth of research in the area of service branding (Krishnan & Hartline, 2001). Brand equity is a composite of a number of factors and has been presented by a number of authors (primarily Aaker, 1991; Keller, 1993; Yoo et al., 2000), who proposed that brand equity can be strengthened if the dimensions are strengthened, which in turn can be strengthened through strengthening the marketing mix elements. The opportunity and challenge for marketers is to effectively influence the equity dimensions to be able to derive benefits. While the marketers have been striving to find ways and means by which they can influence the dimensions of brand equity, all of the elements are not under the control of the marketer. One of the biggest opportunities for the service marketer is to influence physical evidence. Physical evidence unlike price and product is less dependent on other market and competitive forces and, therefore, offers an immense opportunity to be influenced and controlled in an objective manner. Hence, the present study had been carried out to investigate the influence of physical evidence on brand image dimensions like user image, corporate image, and service image and consequently, on brand equity in the retail banking sector.

Objectives of the Study

Primary Objective

❖ To empirically determine the effect of physical evidence on brand image dimensions and thereby, on brand equity.

Secondary Objectives

❖ To empirically determine the effect of physical evidence on the brand image dimensions (viz. user brand image, corporate brand image, and service brand image).

* *Assistant Professor*, Department of Management, Birla Institute of Technology, Ranchi Campus, Circular Road, Lalpur, Ranchi-1. E-mail : smukherjeebit@gmail.com

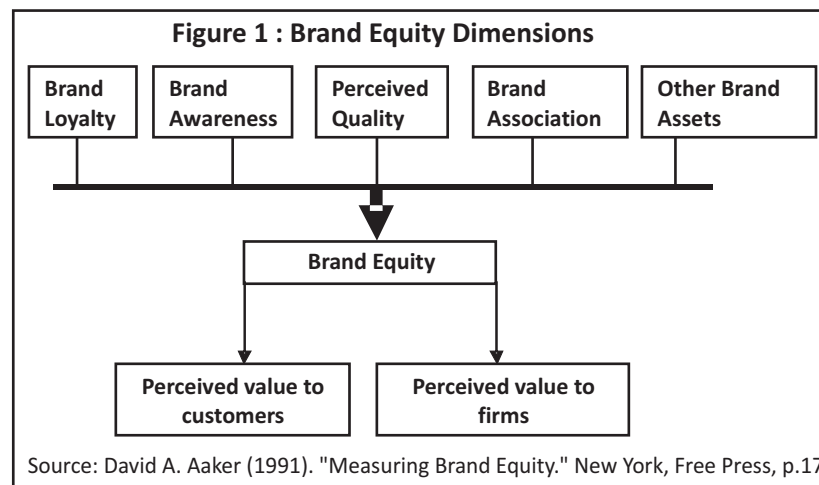
** *Professor*, Department of Management, Birla Institute of Technology, Mesra, Ranchi. E-mail shraddhashivani@bitmesra.ac.in

❖ To empirically determine the effect of brand image dimensions on brand equity.

Research Concepts

❖ **Brand Equity** : Brand equity is the set of assets and liabilities linked to a brand that add to or subtract from its value to the consumers and business (Aaker, 1991). Farquhar, Han, and Ijiri (1991) defined brand equity as the monetary value added by the brand to the product. Swait, Erdem, Louviere, and Dubelaar (1993) defined brand equity as the consumer's implicit valuation of the brand in a market with differentiated brands relative to a market with no brand differentiation. From the aforementioned definitions, there are two major motivations that are primarily highlighted within the context of brand equity. One is a financially based motivation to estimate the value of a brand more precisely for accounting purposes, and the second is the strategy-based motivation to improve marketing productivity, i.e. to increase the efficiency of marketing expense or the consumer based brand equity approach (Keller, 1991).

Brand equity is a multidimensional concept and has a number of dimensions, and this has been the focus of most brand equity studies. Aaker (1991) said that brand equity comprises of brand loyalty, brand awareness, perceived quality, and brand associations along with other proprietary brand assets. On the same lines, Keller (1991) proposed brand equity to be composed of brand knowledge, which in turn consists of brand image and brand awareness. Aaker's proposed model (Aaker, 1991) of brand equity dimensions has been the basis of many subsequent studies on brand equity and provides a framework for marketers as to how the marketing mix elements can be controlled to their benefit.



The reported findings of the applicability of Aaker's brand equity model in the Indian context have been chequered. In a recent study by Shashikala and Suresh (2013), the dimensions - brand loyalty and brand awareness were reported to be important determinants, but perceived quality and brand association were considered insignificant. The present study focuses on brand image or association, and the sub-dimensions of brand image has been tried to be tested empirically for its influence on brand equity.

❖ **Service Brand Equity** : Services are different in view of their unique characteristics, and these characteristics have been highlighted by a number of authors primarily (Berry, 2000; Lovelock, 1983) among others who have said that the service characteristics of intangibility, heterogeneity, perishability, and inseparability are the biggest challenges and are the ones that make service marketing and brand equity building efforts in services different from goods marketing. Referring to a major service characteristic of intangibility, Onkvisit and Shaw (1989) highlighted the importance of a corporate service brand over a product brand in services stating that intangibility and the consequent abstractness has a direct relationship with perceived quality. Branding principles are the same at the conceptual level, where a brand conveys a set of emotional and functional values created by the company as perceived by the consumer. However, at the operational level, the things undergo specific changes and are influenced by the specific service brand elements (De Chernatony & Riley, 1999).

❖ **Brand Equity and Marketing Mix :** The marketing efforts positively influence brand equity because it is a cumulative investment in a brand (Yoo, Donthy, & Sungho, 2000). There are many studies that have been carried out to find how the marketing efforts influence brand equity, notable amongst them being the study carried out by (Simon & Sullivan, 1993), where they identified certain marketing factors like advertising, maturity of the brand, sales force's efforts as important dimensions that influence brand equity. Boulding and Kirmani (1993) identified micro factors like jingles, slogans, symbols as things that create brand equity. More recently, (Yoo et al., 2000) studied the influence of marketing mix elements on brand equity with a focus upon the fact that the dimensions of brand equity should be strengthened to achieve the desired marketing impact. The authors studied the impact of marketing mix elements like price, store image, distribution intensity, advertising spending, price deals and its impact on brand loyalty, perceived quality, and brand awareness or association, but restricted it to goods.

❖ **The Service Marketing Spectrum:** Services are different from goods, and are high in experience quality, and marketing of services has to be looked at differently from goods. Kim and Hyun (2011) carried out a study in the context of the Korean IT software sector to find out the influence of channel performance, value-oriented price, promotion, and after-sales service corporate image on three dimensions of brand equity namely - brand awareness/associations, perceived quality, and brand loyalty and concluded that the mix elements affect the overall brand value in a positive way.

The inadequacy of the conventional marketing mix in services has led to the relevance of the service marketing mix concept which has been referred to as extended, marketing mix elements and included the three elements of process, people, and physical evidence (Zeithaml & Bitner, 2000). What emerges is the fact that services are high in experience quality, are personal in nature, and the consumers' experience with the service firm is a key determinant of image perception and brand equity. The marketer can thus play a definitive role in trying to influence the experience of the consumers by influencing the brand image dimension of the brand to create equity.

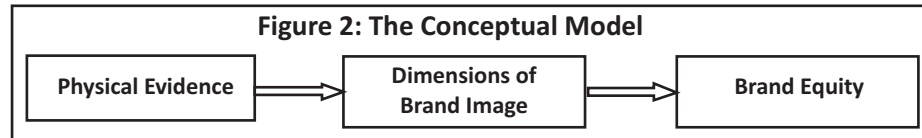
❖ **Retail Banking :** Retail banking is explained as the bank's direct dealing with the consumers. The banks deal in both deposits and advances. The deposits may be in the form of fixed deposits, term deposits, current/ savings accounts. The advances include housing loans, consumer loans, personal loans, mortgage loans, educational loans, etc. In addition to the above, there are certain ancillary services in the form of credit cards, insurance, depository services, etc. (Sudhir, 2005). The author added that retail banking in the country is poised for a big success story as the rural and semi-urban places are still to be explored, and opportunities exploited.

Gopinath (2010) described retail banking as a spectacular innovation in the commercial banking sector in the recent years, where he ascribed the growth in retail banking in emerging economies to rapid advances in information technology, the evolving macroeconomic environment, financial market reforms, and several micro level demand and supply side factors. He said that retail banking is set to be the growth engine for commercial banks in the years ahead in both areas of lending and deposits. The retail banking market is getting transformed from the buyers' market to the sellers' market. It is in view of this that marketing would gain in importance, and the branding act would become almost indispensable. In the context of the Indian retail banking sector, the most common kinds of products that are offered are the loans which include housing loans, consumption loans for purchase of durables, auto loans, credit cards and educational loans.

Ernst and Young (2011) pointed out that there has been a severe loss in trust in retail banking in view of the financial crisis that gripped the world and the banks across the world need to respond to the structural pressures across markets due to the financial crisis effectively and immediately and strive to obtain a competitive advantage. Hence, the challenge remains to keep the customer experience and wider brand perceptions central to all strategic thinking. The study has been claimed by the group as the largest study of its kind in the Asia Pacific region to assess the consumer behavior of the people. More than twenty thousand people were reached by the group including respondents from India with the objective of highlighting the risks and opportunities facing the retail banking sector and what actions the banks can take to retain and expand the customer base. The report presents that despite some differences between developed and developing countries in terms of the impact of consumer trust, what is important for the consumer is the bank's reputation and image. Brand image is an important antecedent of brand equity and is one of the major brand equity constructs we have considered in our study. A strong brand equity has been suggested as more important for emerging markets like India, where foreign bank brands are starting to establish themselves.

The Conceptual Model

The present study is part of a larger study to assess the influence of various marketing mix elements - both traditional and extended - that have been used in the retail banking sector in the state of Jharkhand during the last quarter of 2012. The physical evidence, brand image, brand equity hierarchical model proposed that has been empirically validated is as follows (Figure 2) :



The Model Constructs

❖ **Brand Image :** Brand image has been defined as perceptions about a brand as reflected by the brand's associations held in the consumer memory. It is thus the meaning of the brand for the consumer. The brand associations help the consumer in organizing and retrieving the information which influences the purchase decision (Keller, 2003). The brand association dimension proposed by Kotler (1973) (refer to Figure 1) is similar to the imagery association of Keller (2003). Keller (ibid) has forwarded brand image as an important component of brand knowledge. On similar lines, (Biel, 1992) defined brand image as the cluster of attributes and associations that consumers connect to the brand. Even the financial premium that a brand might command is essentially a function of the consumer's behavioural dynamics. Biel (1992) said that brand image comprises of three contributing sub-images namely user image, corporate image, and product or service image. Different associations have been suggested that influences each of these separate image dimensions. Sierra, Heiser, Jerome, and Taute (2010) also vindicated the sub-dimensions as forwarded by Biel (1992). Chang, Che, and Chung (2008) empirically validated the impact of brand image on brand equity with these three sub dimensions of user, corporate, and service brand image in the service sector. However, these dimensions have not been considered as independent latent constructs.

The role of corporate brand image had been highlighted by Kim and Hyun (2011), where in a study of the Korean IT Software sector, corporate image was established to play a mediating role between the marketing elements and the dimensions of brand equity. The dimensions involve brand awareness with associations, perceived quality, and brand loyalty. Corporate brand image studies specific to the banking sector were carried out by Bravoa, Teresa, and Jose (2010), who expressed corporate brand image as something that relates to the image associated with an organization's name. They said that corporate image contributes to brand equity, loyalty, and perceptions of consumers, and plays a significant role in the financial sector. The authors included physical evidence as an influencing dimension on corporate brand image in their literature. User imagery is those set of characteristics that are typically associated with the user of a brand. Hayes, Alford, and Capella (2008) in their study on sunglasses as a product category evaluated the influence of user image on brand personality. While Biel's proposition (Biel, 1992) was conceptual in nature, Hayes et al. (2008) empirically validated this, at least user imagery, and suggested that user imagery is the strongest of the dimensions of brand image.

However, there is a significant gap regarding the specific influence of physical evidence on brand image dimensions in the banking sector that could be addressed with real positive implications for the marketer. In this study, we have considered each of these three sub-dimensions and tried to empirically evaluate their individual impact on brand equity as also to find out how physical evidence interacts with these dimensions of brand image.

❖ **Physical Evidence :** Physical environment is the environment in which the service is delivered and where the firm and the customer interact, and also involves any tangible components that facilitate performance or communication of the service (Zeithaml & Bitner, 2000). More recently (Hightower and Mohammad, 2009) defined physical evidence as everything that is physically available to the consumer during the service encounter. The existing literature on physical evidence does not explicitly present the influence of physical evidence on brand equity and the consequent consumer choice decision. However, there have been references made to atmospherics /physical environment in a number of studies. Studies relating to the influence that physical evidence can exercise over consumers in terms of shaping their perceptions and experience had been carried out as early as 1973 by Kotler when he carried out his study on

atmospherics and inferred that atmospherics is a relevant marketing tool mainly in situations where the product is produced and consumed simultaneously (inseparability) and here, he argued, the role of atmospherics increases in applicability. He also forwarded that it is an important factor contributing to the consumers' image perception of an organization.

The basic rationale of physical evidence lies in the fact that services are intangible and customers mostly rely on tangible cues or physical evidence to evaluate the service before its purchase and to assess their satisfaction with the service during and after consumption (Zeithaml & Bitner, 2000 b). The authors put forward that the physical facility helps in image differentiation for the service firms and given its power as a differentiator, changes in the physical environment can be used to reposition a firm and attract new market segments. Previously, Zeithaml, Parasuraman, and Berry (1985) also said that physical environment has a distinct impact on the behavioural outcome of consumers and the image that it creates for the service organization. They also said that physical evidence has a distinct influence on service, particularly in respect of perceived quality. The role of physical evidence in image creation and perception has also been supported by Levitt (1981).

Lin (2004) argued in favor of physical evidence and talked about the importance of it by saying that it helps in communicating and formation of a complete image amongst the consumers. The different kinds of stimuli that are received are cognitively grouped to form meaningful images that are formed when an individual perceives specific cues through the sensory system; the person essentially creates a cognitive schema, thus forming distinct mental images. A consumer is more in interaction with the physical surroundings than anything else in seeking a service and thus, this is what the service organizations must focus on (Wall & Berry, 2007). In their empirical study on restaurant atmospherics, the authors tried to find out the effect of physical evidence and employees on perception that consumers have of service quality. More the time people spend in a service premise, more is the likelihood of the influence (Parish, Berry & Lam, 2008; Wall & Berry, 2007). Zeithaml (1988) also explicitly cited the influence of physical evidence in shaping consumer expectations and perceived performance.

In an empirical study, Paninchukkannath (2009) validated the influence of physical evidence, particularly the interior service settings in interpersonal service organizations, and inferred that the physical evidence provides an opportunity for the service organization to send the message to the consumers regarding the organization's purposes. Eze and Harris (2007) said that the approach and avoidance towards the service is influenced by the physical evidence and that in services which are high in credence quality, the dissonance is substantially reduced if there is a promising physical evidence. This would be highly relevant in case of it positively influencing word of mouth communication.

Research Hypotheses

On the basis of the review of the available literature, an exploratory study was carried out, and the following hypotheses were proposed and empirically examined:

- ❖ **H1 : User brand image is positively related and significantly contributes to brand equity.**
- ❖ **H2:Corporate brand image is positively related and significantly contributes to brand equity.**
- ❖ **H3 : Service brand image is positively related and significantly contributes to brand equity.**
- ❖ **H4 : Physical evidence significantly and positively influences user brand image.**
- ❖ **H5 : Physical evidence significantly and positively influences corporate brand image.**
- ❖ **H6 : Physical evidence significantly and positively influences service brand image.**

Research Design

The study was carried out in the state of Jharkhand in the last quarter of 2012, and it intended to find out the impact of different identified elements on brand image and brand equity in the retail banking sector. In this paper, we have considered dimensions of brand image and selected extended marketing mix elements as the antecedents of brand equity. The study considered State Bank of India, which has the largest network of branches and has the largest spread /presence across the country, and also, SBI has the highest credit exposure in the market. Our study focused on the state of Jharkhand. The bank has branches categorized as urban, semi urban, and rural. We considered only the urban and semi urban branches of SBI in Jharkhand because during the pilot study and pretesting of the questionnaire that was carried out, the rural branch customers were not very appreciative and could not understand the theme of the research,

resulting in a large number of erroneous responses. To have a representative sample, we adopted the method of proportional allocation. The allocation has been twenty percent of the number of branches in each district under the respective categories of urban and semi urban areas, and were picked up randomly from the district wise list of bank branches. The percentage fixation is based on suggestions by different bank managers of the branches in districts from amongst the semi urban and urban branches, decimals rounded off to nearest integers. However, to ensure that some districts do not get unrepresented, a minimum of one branch from each district had been taken, whether urban or semi urban.

❖ **The Sample :** In our study, the sample population were all adult male and female retail loan seekers from State Bank of India in Jharkhand. The study had been carried out with a sample size of 348 respondents, which is satisfactory sample size (Hair, Black, Babbib, Anderson, & Tatham, 2006). Loan as a category had been picked up because the literature review revealed that the intangibility characteristic of services makes it very subjective in its evaluation and increases risk perception associated with its consumption. Brand equity matters the most in those cases where there is a high degree of risk perception (Gray, 2006). It has also been established that retail lending will be the driver of growth for banks and thus, this as a category needs to be focused upon the most (Business Monitor International, 2011).

❖ **The Scale :** The study used a five point Likert scale derived from other similar studies that have been used elsewhere in the service sector to measure the endogenous and exogenous variables. The following are the variables and their measurement source.

❖ **Brand Equity :** The measurement instrument for this is adopted from the study by Chin & Tseng (2010).

❖ **Brand Image :** Biel (1992) described brand image as consisting of three contributing sub- images namely that of the product, of the company (company), and that of the user. We have used these three dimensions and the scale developed and partially modified by Chang et al., (2008) in their study.

❖ **Physical Evidence :** In carrying out the study to find out the influence of physical evidence on consumers, we have referred to Hightower Jr. (2010), who has, in extension of his previous work along with Mohammad (2010) depicted that consumers think of physical evidence at three different levels - viz. the overall level, the dimension level, and the sub -dimension level and broke down the ambient, social, and design factors as per these dimensions.

❖ **Refinement of Scale Items through Pretesting :** The questionnaire pre-testing was carried out amongst sixty respondents in eight urban and semi-urban branches spread across three districts Ranchi, Ramgarh, and Hazaribagh in Jharkhand. The scale was tested for internal consistency reliability and for this test, coefficient alpha or Cronbach's alpha value had been used. The benchmark coefficient value that had been used for accepting or rejecting the scale items was fixed as 0.60, as this value has been suggested to be an appropriate measure by Malhotra and Dash (2010), and they said that any value less than 0.6 is indicative of unsatisfactory internal consistency. Some items from the scale were dropped and the final scale was given shape. The original scale consists of a number of sub-dimensions and reliability for each of these sub-dimensions was generated separately. Scale items were accordingly retained or removed. For carrying out statistical tests in course of our research work, including reliability tests, we used SPSS version 20 and LISREL 8.8 (Jöreskog & Sorböm, 2006) for the measurement model and for validating the structural model.

❖ **The Survey Technique :** The questionnaire was administered to loan seekers and the mall intercept survey technique was adopted. Mall intercept survey technique has been said to be an efficient technique of data collection. It has been argued that this method or technique consumes less resources, has lower refusal rates, and that the response quality is better than any other method, particularly telephonic interviewing (Bush & Hair, 1985). We have used the five point Likert scale, against which responses were sought from the respondents with response values ranging from 1 to 5, with 1= *strongly disagree*, 5= *strongly agree*.

Analysis And Discussion

❖ **Data Character :** According to Bagozzi (1981), one of the first things that should be done in the evaluation of the structural model is the assessment of the adequacy of input data. A common rule-of-thumb test used to check the normality of data is to run descriptive statistics to get skewness and kurtosis. Skewness should be within the +2 to -2

20 Indian Journal of Marketing • June 2013

Table 1: Scale Reliability			
Construct	Items	Cronbach's Alpha	Item to Total
Brand Equity	Item 1		.767
	Item 2		.788
	Item 3	.878	.843
	Item 4		.687
	Item 5		.745
Brand Image			
User Brand Image	Item 1		.614
	Item 2	.720	.470
	Item 3		.552
Corporate Brand Image	Item 1	.737	.584
	Item 2		.584
Service Brand Image	Item 1	.744	.611
	Item 2		.615
Physical evidence		.681	
Physical Evidence : Ambience	Item 1		.486
	Item 2		.551
	Item 3		.471
Physical Evidence : Social	Item 1		.626
	Item 2	.809	.713
	Item 3		.608
	Item 4		.645
Physical Evidence : Design	Item 1	.758	.612
	Item 2		.614
Source: Output value from statistical analysis of reliability using SPSS 20			

range for the data to be normally distributed. Kurtosis also should be within the +2 to -2 range when the data is normally distributed (a few authors also use +3 to -3). Normality analyses for the variables were conducted with SPSS 20 using the maximum likelihood method. All variables reported a skewness and kurtosis within a range of +2 and -2 (refer to Table 2). This means that the data was normally distributed.

Confirmatory Factor Analysis

❖ **Competing Models of Brand Image (CFA)** : Brand image consists of three sub-dimensions and has been subjected to different confirmatory analysis tests to verify the theory. Three CFA models were tested as required with the most common test statistics (Bagozzi & Yi, 1988). The first model with one first order factor and seven items revealed a

Table 2: Test for Normality		
Constructs	Skewness	Kurtosis
Brand Equity	-.372	-.493
User Brand Image	-.037	-.535
Corporate Brand Image	-.433	.109
Service Brand Image	-.283	-.608
Physical Evidence	-.452	-.247
Source: Output value from descriptive analysis of data using SPSS 20		

misfit on all the test statistics: Chi Square, Chi square/df, GFI, AGFI, RMSEA. The third model with the three first order factor and one second order factor also misfits on the different test statistics. The second model with three first order factors fits to the required statistic values (refer to Table 3). We considered all the three sub-dimensions of user brand image, corporate brand image, and service brand image as separate latent constructs based on the available literature duly supported by CFA results.

Table 3: Competing CFA Models for Brand Image					
Model	Chi Square(df)	Chi square/df	GFI	AGFI	RMSEA
One first order factor	152.40(14)	10.885	0.89	0.78	0.169
Three first order factors	40.07(11)	3.64	0.97	0.92	0.087
Three first order factors and one second order factor	264.26(7)	37.75	0.81	0.44	0.24
Source: Output value from CFA calculated using LISREL 8.8					

❖ **Competing Models of Physical Evidence (CFA)** : Hightower and Mohammad (2009) proposed three basic dimensions of physical evidence - namely ambience, social, and design. On refinement of the original scale items based on Cronbach's alpha, our construct measurement scale consisting of nine items was subjected to test using three CFA models. Item parceling had been adopted in view of the difference in sub-dimensions and in cases of such divergent and large number of items, this is a suitable approach (Cattell, 1956).

Table 4: Competing CFA Models for Physical Evidence					
Model	Chi Square(df)	Chi square/df	GFI	AGFI	RMSEA
One first order factor	352.56(27)	13.05	0.82	0.69	0.186
Three first order factors	43.38(24)	1.80	0.97	0.95	0.048
Three first order factors and one second order factor	43.38(24)	1.80	0.97	0.95	0.048
Source: Output value from CFA calculated using LISREL 8.8					

We adopted the second order CFA results (refer to Table 4) and considered physical evidence as a latent construct with three items which have been parceled.

Structural Equation Analysis

Researchers have used structural equation modeling (SEM), which is a very powerful analysis tool (Cheung & Rensvold, 1999) to guide research design and the systematic analysis procedures. SEM can simultaneously estimate all path coefficients and test the significance of each causal path, permitting the evaluation of the model performance as a whole (Bagozzi, 1981). The analysis is in two parts- the measurement model and the structural model.

❖ **The Measurement Model** : Hair et al. (1996) suggested that standard loading and the squared multiple correlations between items and constructs should be used for measurement model testing. The analysis results for this study indicate that all items were loaded highly on their corresponding construct, and the t-values of those items were greater than 2.0, which is an acceptable statistic (Segars & Grover, 1993). The analysis of the squared multiple correlations (refer to Table 5) demonstrate that except for a few items, most of the items met the recommended criteria of 0.40. This means that overall, the items shared substantial variance with their hypothesized constructs.

The measurement model is supported based on the statistics except the chi-square value (refer to Table 6). However, the higher chi square value criteria is not accepted as a suitable criterion, particularly in research studies and data analysis, where the sample size is large (Browne & Cudeck, 1993). Our sample size is reasonably large. It has also been said that the chi-square value becomes more sensitive as the data points increase (Hair et al., 1996). The present study has a sample size of 348 valid respondents, so the chi-square value is not an appropriate testing criterion for model fit for this study. NFI was also above the recommended value of 0.90 (0.95). Therefore, it could be articulated that the measurement model of this study had an acceptable level of fitness. Other fitness indices met the recommended

Table 5: Parameter Estimates for the Measurement Model				
Constructs	Items	Standardised Loadings	T values	Squared multiple correlations
Brand Equity	Brand Equity 1	0.85	19.17	0.72
	Brand Equity 2	0.81	17.85	0.66
	Brand Equity 3	0.79	17.30	0.63
	Brand Equity 4	0.80	17.43	0.64
	Brand Equity 5	0.80	17.60	0.64
User Brand Image	User image 1	.69	13.17	0.47
	User Image 2	.70	13.42	0.48
	User Image 3	.71	13.72	0.50
Corporate Brand Image	Corporate Image 1	.82	12.82	0.67
	Corporate Image 2	.66	10.95	0.44
Service Brand Image	Service Image 1	.80	15.77	0.64
	Service Image 2	.76	15.05	0.58
Physical Evidence		Items Parceled		
(Ambience)	Ambience 1	0.56	10.28	0.32
	Ambience 2			
	Ambience 3			
(Social)	Social 1	0.38	6.72	0.15
	Social 2			
	Social 3			
	Social 4			
(Design)	Design 1	0.83	15.51	0.69
	Design 2			
Source: Output value using LISREL 8.8				
*All values significant at level 1				

Table 6: Fit Statistics for the Measurement Model			
Fit Statistic	Recommended value	Value calculated	Conclusion
Chi Square	P>=0.05	190.15(p=0.00)	Not Fit
Chi Square/df	<=3	190.15/80=2.37	Fit
GFI	>=0.9	0.93	Fit
AGFI	>=0.8	0.90	Fit
NFI	>=0.9	0.97	Fit
CFI	>=0.9	0.98	Fit
RMR	<=0.9	0.019	Fit
RMSEA	<=0.1	0.063	Fit
Source: Output value using LISREL 8.8			
*All values significant at level 1			

minimum values as well: Chi-square (X²)/df of 2.37, GFI of 0.93, AGFI of 0.90, CFI of 0.98, RMR of 0.019, and RMSEA of 0.063 (refer to Table 6).

❖ **The Structural Model** : As with the measurement model, the fit indices suggest a fit for the structural model with all fit statistics complying with the recommended criterion, except the chi square value, which is explained on the basis of

Table 7: Fit Statistics for the Structural Model			
Fit Statistic	Recommended value	Value calculated	Conclusion
Chi Square	P>=0.05	216.78/p=0.00	Not Fit
Chi Square/df	<=3	216.78/86=	Fit
GFI	>=0.9	0.92	Fit
AGFI	>=0.8	0.89	Fit
NFI	>=0.9	0.96	Fit
CFI	>=0.9	0.97	Fit
RMR	<=0.9	0.020	Fit
RMSEA	<=0.1	0.066	Fit
Source: Output value using LISREL 8.8			
All values significant at level 1			

Table 8: Results of Hypotheses Testing					
Hypothesis	From	To	Standardized Coefficient	T value	Result
H1	User Brand Image	Brand Equity	0.50	4.53	Supported
H2	Corporate Brand Image	Brand Equity	0.01	0.16	Not Supported
H3	Service Brand Image	Brand Equity	0.28	2.76	Supported
H4	Physical Evidence	User Brand Image	0.88	10.84	Supported
H5	Physical Evidence	Corporate Brand Image	0.61	8.86	Supported
H6	Physical Evidence	Service Brand Image	0.84	12.09	Supported
Source: Output value using LISREL 8.8					
All values significant at level 1					

the large sample size (refer to Table 7).

Results of Hypotheses Testing

❖ **Brand Image Dimensions to Brand Equity (Hypothesis 1, 2, and 3)** : The results from structural model testing as reported in the Table 8 proves the hypotheses H1 and H3, but does not prove the hypothesis H2. Biel (1992) suggested that user brand image has a significant role to play in influencing brand equity. Keller (2003) also referred to this dimension and its utility when he forwarded the concept of user imagery or image, citing it as playing a major role in brand equity creation. The study empirically vindicates the previous propositions .User brand image has the largest influence on brand equity with a calculated standardized coefficient of 0.50 and t- value of 4.53 (refer to Table 8).

The role of corporate brand image has been highlighted by Kim and Hyun (2011) in the services through a study carried out in the software sector. Specific to the banking sector, the study carried out by Bravoa et al. (2010) showed that corporate brand image is the image associated with an organization's name. Similar strong arguments have been forwarded by Onkvsit and Shaw (1989) regarding the role of corporate brand image as an influence on brand equity. However, the findings of the present study are in contrast to all these propositions, and the corporate brand image to brand equity causal relationship is not established. The calculated coefficient value is 0.01 with a t-value of 0.16 (refer to Table 8). Hence, our second hypothesis is rejected. Keller (2003) forwarded the concept of product brand image or service brand image as a significant dimension of brand equity. The results from the present study vindicate this proposition. The coefficient value 0.28 and t value of 2.76 (refer to Table 8) between service brand image and brand equity presents this as a dimension only next in importance to user brand image and highlights the importance of delivering proper service in retail banking.

❖ **Physical Evidence to Brand Image Dimensions (Hypotheses 4, 5, and 6)** : Zeithaml et al. (1985) related physical environment to brand image citing its distinct impact on the behavioural outcome of consumers, and the image that it

creates for the service organizations. On similar lines, Levitt (1981) discussed the role of physical evidence in image creation and perception. Lin (2004) argued in favour of physical evidence, and talked about the importance of physical evidence by saying that it helps in communicating and formation of a complete image amongst consumers. Results from the structural model analysis suggest that physical evidence has a positive and significant relationship with all the brand image dimensions (refer to Table 8), with physical evidence having the strongest relationship with user brand image with a coefficient value of 0.88 and a t-value of 10.84. The fact that user brand image and service brand image have been reported to have a very strong relationship with brand equity and physical evidence having similar strong relationship with user and service brand image largely validates our conceptual model (refer to Figure 2), and suggests a huge scope for the marketer to influence brand equity.

Conclusion

The standard coefficient values and the corresponding t-values suggest a vindication of the conceptual model that we have proposed. The dimensions of brand image - namely user brand image, corporate brand image, and service brand image has been suggested to be validated in future research by a number of researchers, notably Chang et al., (2008) and Biel (1992) etc., but existing literature does not reveal any such validation in the retail banking sector. The present study has attempted to address this gap. The measurement instrument used for the study adopted scales for different constructs from studies in other countries. The scale items were subjected to reliability tests, and the results (refer to Table 1) reveal an appropriateness of the items and the scale with slight modifications in the Indian context. Our conceptual model (refer to Figure 2), which is a part combination of the model by Aaker (1991) (refer to Figure 1) and the brand knowledge - brand image concept by Keller (2003) validates the brand equity concept of the authors in the Indian context. Our inclusion of the dimensions of brand image as independent constructs makes our approach innovative and could have significant managerial implications.

Managerial Implications

Marketing mix elements have traditionally been the tool available with a marketer which has been used to achieve marketing objectives. Efforts have been made to find means through which these tools can be made more effective. Unlike goods, services are characterized by their distinctive uniqueness and are high in experience and credence quality, thus necessitating a different approach. The conventional marketing mix elements are also inadequate in addressing the requirements of service marketing. Though the extended mix elements are available, the specific way in which these should be used is an area where if inputs are provided, can lead to its more effective use by the marketer. The mix elements that are available are not under the complete control of the marketer.

The ability of the marketer to be able to control the physical evidence suggests a huge opportunity that marketers have at their disposal that they could use effectively. The high direct and positive relationship of physical evidence, which includes the presence of other customers during consumption with service brand image and user brand image suggests an innovative manner in which the marker can control and shape the physical evidence to control service/user brand image and brand equity. Thus, it is concluded that physical evidence is a tool in the hands of the marketers that they can control and ,therefore, this has a huge significance for marketers as it opens up a huge opportunity for the service marketers. Churchill (1943) made a famous quote “We shape our buildings, and afterwards our buildings shape us”. This very appropriately summarizes the influence that physical environment can have on us.

Limitations of the Study and Scope for Future Research

The study had been carried out to ascertain how physical evidence influences brand image dimensions and subsequently, brand equity. The dimensions of brand image namely user, corporate, and service image have been tested for their specific contribution to brand equity. The physical evidence influence on the dimensions of brand equity was also tested in a cumulative hierarchical causal relationship in the retail banking sector for the service product category of loans. However, though the relationships have been tested and proved correct except for corporate image to brand equity, the study could be carried forward by testing its applicability in other service sectors and other category of service products.

We have considered the country's largest public sector bank, the State Bank of India, which may be extended to include other public sector, private, and foreign banks in the country. The sample population was restricted to the state

of Jharkhand, which may be extended to a sample drawn from across the country. Regarding the marketing mix elements that act as key influence on dimensions of brand equity, only physical evidence has been used. Future studies can focus on other mix elements and try and establish their causal relationships with the dimensions as well as their interrelationships.

References

- Aaker, D. A. (1991). *"Managing Brand Equity."* New York, N.Y. Free Press, p. 17.
- Bagozzi, R. P., & Yi, Y. (1988). "The Evaluation of Structural Equation Models." *Journal of the Academy of Marketing Science*, 16 (1), pp. 74-94.
- Bagozzi, R.P. (1981). "Evaluating Structural Equation Models with Unobservable Variables and Measurement Error: A Comment." *Journal of Marketing Research*, 18 (3), pp. 375-381. Retrieved from the EBSCO database.
- Berry, L. L. (2000). "Cultivating Service Brand Equity." *Journal of the Academy of Marketing Science*, 28 (1), pp. 128-138.
- Biel, A. L. (1992). "How Brand Image Drives Brand Equity." *Journal of Advertising Research*, 32(6), pp. 6-12.
- Bitner, M. J. (1990). "Evaluating Service Encounters: The Effect of Physical Surroundings and Employee Responses." *Journal of Marketing*, 54 (2), pp. 69-82.
- Bitner, M. J. (1992). "Physical Evidence: The Impact of Physical Surroundings on Customers and Employees." *Journal of Marketing*, 56 (2), pp. 57-71.
- Bollen, K., & Lennox, R. (1991). "Conventional Wisdom on Measurement: A Structural Equation Perspective." *Psychological Bulletin*, 110 (2), pp. 305-314.
- Boulding, W., & Kirmani, A. (1993). "A Consumer Side Experimental Examination of Signalling Theory: Do Consumers Perceive Warranties as Signals of Quality." *Journal of Consumer Research*, 20(1), pp. 111-123. Retrieved from the EBSCO database.
- Bravo, R., Teresa, M., & Jose, M. P. (2010). "Corporate Brand Image in Retail Banking: Development and Validation of a Scale." *The Service Industries Journal*, 30 (8), pp. 1199-1218.
- Browne, M. W., & Cudeck, R. (1993). *"Testing Structural Equation Models."* Retrieved from www.googlebooks.com
- Bush, A. J., & Hair, J. F. (1985). "An Assessment of the Mall Intercept as a Data Collection Method." *Journal of Marketing Research*, 22 (2), p. 158, Retrieved from the EBSCO database.
- Business Monitor International (2011). *"India Commercial Banking Report Q2 Including Industry Forecasts for 2015."* Retrieved from www.businessmonitor.com
- Cattell, R. B. (1956). "Validation and Intensification of the Sixteen Personality Factor Questionnaire." *Journal of Clinical Psychology*, 12 (3), pp. 205-14.
- Chang, H. H., Che-H. H. and Chung, S. H. (2008). "The Antecedents and Consequences of Brand Equity in Service Markets." *Asia Pacific Management Review*, 13 (3), pp. 601-624.
- Cheung, G. W., & Rensvold, V. R. (1999). "Testing Factorial Invariance across Groups: A Reconceptualization and Proposed New Method." *Journal of Management*, 25 (1), pp. 1-27.
- Ching, F. C., & Tseng, W. S. (2010). "Exploring Customer Based Airline Brand Equity: Evidence from Taiwan." *Transportation Journal*, 49 (1), pp. 24-34.
- Constantinides, E. (2006). "The Marketing Mix Revisited: Towards the 21st century Marketing." *Journal of Marketing Management*, 22 (3), pp. 407-438.
- De Chernatony, L. & Riley, F. D. (1999). "Expert's Views about Defining Services Brands and Principles of Services Branding." *Journal of Business Research*, 46 (2), pp. 181-192. Retrieved from the EBSCO database.
- De Chernatony, L., Drury, S., & Horn, S. S. (2003). "Building a Service Brand: Stages, People and Orientations." *The Service Industries Journal*, 23 (3), pp. 1-21.
- Erdem, T., & Swait, J. (1998). "Brand Equity as a Signalling Phenomenon." *Journal of Consumer Psychology*, 7 (2), pp. 131-158.
- Ernst and Young (2011). "Global Consumer Banking Survey Report." Retrieved from www.ey.com

- Ezeh, C., & Harris, L. (2007). "Physical Evidence Research: Review of a Research Agenda." *The Marketing Review*, 7 (1), pp. 59-78.
- Farquhar, P.H., Han, J.Y. and Ijiri, Y. (1991). "Recognizing and Measuring Brand Assets." Marketing Science Institute, Report No. 91-119, Cambridge, MA.
- Gopinath, S. (2010). "Reserve Bank of India Bulletin-1995." Retrieved from www.rbi.org
- Gray, B. J. (2006). "Benchmarking Services Branding Practices." *Journal of Marketing Management*, 22 (7), pp. 717-758.
- Gronroos, C. (1982). "Strategic Management and Marketing in the Service Sector." Helsingfors: Swedish School of Economics and Business Administration.
- Hair, J. F. Jr., Black, W. C., Babbib, B. J., Anderson, R. E., & Tatham, R. L. (2006). "Multivariate Data Analysis." 6th Edition, Pearson Prentice Hall, p. 764.
- Hayes, B. J., Alford, B. L. & Capella, L. M. (2008). "When the Goal is creating a Brand Personality, Focus on User Imagery." *Journal of Academy of Marketing Studies*, 12 (1), pp. 95-116.
- Hightower, R. Jr. (2010). "Commentary on Conceptualising the Physical Evidence Construct in a Study of the Service Encounter in Eight Countries." *The Marketing Management Journal*, 20 (1), pp. 76-86.
- Hightower, R. Jr. and Mohammad, S. (2009). "Physical Evidence's Hierarchical Factor Structure Model." *Global Review of Business and Economic Research*, 5 (2), pp. 375-398.
- Ingrid, Y. L. (2004). "Evaluating a Physical Evidence: The Effect of Cognition and Emotion." *International Journal of Hospitality Management*, 23 (2), pp. 163-178.
- Jöreskog, K. G., & Sörbom, D. (2006). "Users Manual." LISREL 8.52. Scientific Software, Chicago, IL.
- Keller, K. L. (1991). "Memory and Evaluations in Competitive Advertising Environments." *Journal of Consumer Research*, 17 (4), pp. 463-476.
- Keller, K. L. (1993). "Conceptualising, Measuring and Managing Customer Based Brand Equity." *Journal of Marketing*, 57 (1), pp. 1-22.
- Keller, K. L. (2003). "Brand Synthesis: The Multi-Dimensionality of brand Knowledge." *Journal of Consumer Research*, 29 (4), pp. 595-600.
- Kempf, D. S., & Smith, R. E. (1998). "Consumer Processing of Product Trial and the Influence of Prior Trial-A Structural Modelling Approach." *Journal of Marketing Research*, 35 (3), pp. 325-338.
- Kim, J-H. J., & Hyun, Y. J. Y. (2011). "Model to Investigate the Influence of Marketing-Mix Efforts and Corporate Image on Brand Equity in the IT Software Sector." *Journal of Industrial Marketing Management*, 40 (3), pp. 424-438.
- Kotler, P. (1973). "Atmospherics as a Marketing Tool." *Journal of Retailing*, 49 (4), pp. 48-64.
- Krishnan, B.C., & Hartline, M.D. (2001). "Brand Equity: Is it more important in Services." *Journal of Services Marketing*, 15 (5), pp. 328-342.
- Levitt, T. (1981). "Marketing Intangible Products and Product Intangibles." *Harvard Business Review*, 59 (3), pp. 94-102.
- Lovelock, C. (1983). "Classifying Services to Gain Strategic Marketing Insights." *Journal of Marketing*, 47 (3), pp. 9-20.
- Malhotra, N. K., & Dash, S. (2010). "Marketing Research-An Applied Orientation." Pearson Publication, 6th edition, p.279.
- O' Cass, A., & Grace, D. (2004). "Service Brands and Communication Effects." *Journal of Marketing Communication*, 10 (4), pp. 241-254.
- Onkvisit, S., & Shaw, J.J. (1989). "Service Marketing: Image, Branding, and Competition." *Business Horizons*, 32(1), pp. 13-18.
- Paninchukannath, A. (2009). "Elaborate Physical Evidence: Spatial Dimensions." *SCMS Journal of Indian Management*, 6 (2), pp. 90-99.
- Parashuraman, A., Ziethaml, A., & Berry, L. (1985). "A Conceptual Model of Service Quality and Its Implications for Future Research." *Journal of Marketing*, 49 (4), pp. 41-50.
- Parish, J. T., Berry, L. L., & Lam, S. Y. (2008). "The Effect of Physical Evidence on Service Workers." *Journal of Service Research*, 10 (3), pp. 220-238.
- Segars, A. H., & Grover, V. (1993). Reexamining Perceived Ease of Use and Usefulness." *Journal MIS Quarterly*, 17 (4), pp. 517-525.

- Shashikala, R., & Suresh, A. M. (2013). "Measuring Customer Based Brand Equity Using Aaker's Model." *Indian Journal of Marketing*, 43 (3), pp. 5-13.
- Sierra, J. J., Heiser, R. S., Jerome, D. W., & Taute, H. A. (2010). "Consumer Racial Profiling in Retail Environments: A Longitudinal Analysis of the Impact on Brand Image." *Journal of Brand Management*, 18 (1), pp. 79 - 96.
- Simon, C. J., & Sullivan, M. W. (1993). "The Measurement and Determinants of Brand Equity: A Financial Approach." *Marketing Science*, 12 (1), pp. 28-52.
- Sudhir, M. (2005, December). "Retail Banking in India: The Paradigm Shift." *The Analyst Magazine*, Retrieved from http://www.iupindia.in/1205/AN_Retail_Banking_India_63.html
- Swait J., Erdem, T., Louviere, J., & Dubelaar, C. (1993). "The Equalisation Price: A Measure of Consumer Perceived Brand Equity." *International Journal of Research in Marketing*, 10 (1), pp. 23-45.
- Walgren, C. J. C., Cynthia, R. A., & Donthu, N. (1995). "Brand Equity, Brand Preference, and Purchase Intent." *Journal of Advertising*, 24 (3), pp. 25-40.
- Wall, E. A. & Berry, L. L. (2007). "The Combined Effects of the Physical Environment and Employee Behaviour on Customer Perception of Restaurant Service Quality." *Cornell Hotel and Administration Quarterly*, 48 (1), pp. 59-69.
- Yoo, B., Donthu, N., & Sungho, L. (2000). "An Examination of Selected Marketing Mix Elements and Brand Equity." *Journal of Academy of Marketing Science*, 28 (2), pp. 195-211.
- Zeithaml, A., Parasuraman, A., & Berry, L. L. (1985). "Problems and Strategies in Service Marketing." *Journal of Marketing*, 49, pp. 33-46, Retrieved from EBSCO database.
- Zeithaml, V. A. (1988). "Consumer Perceptions of Price, Quality and Value: A Means End Model and Synthesis of Evidence", *Journal of Marketing*, 52 (2), pp. 2-22. Retrieved from EBSCO database.
- Zeithaml, V. A., & Bitner, M. J. (2000). "*Services Marketing-Integrating Customer Focus across the Firm.*" Tata Mc Graw Hill Publication, 2nd edition, pp. 19-21.
- Zeithaml, V. A., & Bitner, M. J. (2000b). "*Services Marketing-Integrating Customer Focus across the Firm.*" Tata Mc Graw Hill Publication, 2nd Edition, p. 253.