THE IMPACT OF CO-BRANDING ON CUSTOMER EVALUATION OF BRAND EXTENSION

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ABSTRACT

The easiest and most fruitful way to think of a brand is as an image that the audience remembers. This means that successful branding of a service or product is a matter of creating an image that is Positive, Relevant, and Memorable. In today's market, consumers tend to view a brand's image as an integral part of the product or service they are purchasing. They are not only buying the actual product or service, but the status, prestige and perceived benefits associated with the organization that is doing the selling - intangible qualities that differentiate the item of choice from all other similar offerings in the marketplace. So, creating a brand image that sets an association apart from others offering similar services is a key factor in retaining and expanding one's share of the market. In order to create such associations' organizations co brand with other brand and some time they go for brand extensions as well. This paper is an effort to find out whether the image of parent brand has any impact on co brands and brand extensions and also whether co-brand has any impact on brand extension.

Key Words: **Brand Image, Co-Branding, Brand Extension, Smart PLS-Measurement Model**

INTRODUCTION

The act of associating a product or service with a brand has become part of pop culture. Most products have some kind of brand identity, from common table salt to designer clothes. In non-commercial contexts, the marketing of entities which supply ideas or promises rather than product and services (e.g. political parties or religious organizations) may also be known as "branding". Marketers engaged in branding, seek to develop or align the expectations behind the brand experience, creating the impression that a brand associated with a product or service has certain qualities or characteristics that make it special or unique. A brand image

may be developed by attributing a "personality" to or associating an "image" with a product or service, whereby the personality or image is "branded" into the consciousness of consumers. A brand is therefore one of the most valuable elements in an advertising theme. The art of creating and maintaining a brand is called brand management.

Brand Image

Sengupta defines 'brand image' as the totality of the impressions about the brand. This according to him includes its physical, functional and psychological aspects of the brand. Therefore it can be interpreted that the perceptions and beliefs about a brand held by consumers, as reflected in the association held in consumer memory is its brand image.

 The creation of a brand implies communicating a certain brand image in such a way that all the firm's target groups link such a brand (and thus the products sold using its name) with a set of associations. Brand image refers to attributes associated with a given product or service (Sirgy, 1983). Like people, brands are assumed to have a personality or image, determined not just by physical characteristics, but by other factors such as packaging, advertising, price and channels of distribution. Brand image can also be based on other associations, for example the stereotypical image of the consumer who would use a particular store or service (Grubb and Grathwohl, 1967; Sirgy, 1983). Brand image can also result from direct experience, word-of-mouth or commercial information including advertising and other means of marketing communication (Eriksen, 1996).

Since there is lack of agreement on how to measure brand image (Dobni and Zinkhan, 1990), one generally accepted view is that, consistent with an associative network memory model, brand image can be defined as perceptions about a brand as reflected by the cluster of associations that consumers connect to the brand name in memory. Thus, brand associations are the other informational nodes linked to the brand node in memory and contain the meaning of the brand for consumers.

Co-branding

Co-branding is the practice of using multiple brand names together on a single product or service. The term can also refer to the display of multiple brand names or corporate logos on a single Web site, so that people who visit the site see it as a joint enterprise. When effectively done, co-branding provides a way for companies to combine forces so that their marketing efforts work in synergy. On the Internet, co-branding can provide benefits to the involved businesses by enhancing product or service exposure to consumers, marketing new products and services, and making consumers or clients aware of the core competencies of each enterprise. Co-branding can also be used to target specific markets with advertising by means of banner ads, logos, or links in descriptive text, maximizing

the likelihood that potential buyers will learn of the existence of a particular company, brand, product, or service.

Co-branding as an alternative branding proposition is fast making grounds due to various factors. The opening of Indian economy with spate of entries by multinationals makes it evident that the Indian consumer is going to face lot of products with co branding options. To build a strong brand image marketers use co-branding as a strategic option. Co-branding, co-partnering or dual branding is the act of using two established brand names of different companies on the same product. It has made inroads into nearly every industry, from automotive and high-tech Internet companies to banking and fast food. The companies are very often following co-branding strategy only after realizing that the traditional marketing practices are exhausted and are no more capable of delivering a distinct brand benefit that they should have. The most important aim of co-branding is through combination of two brands in order to attract more customers and to maximize the power and prestige that each brand has to offer. The partnership helps in opening up new markets and marketing opportunities. Co-branding is a good way to influence customers in a psychological sense and give them the impression that their favorite brand has a lot more to offer. Co-branding provides two distinctive benefits. Both companies benefit from the partnership and so also the customers.

A company gets preliminary benefit of instant brand recognition in markets where there may not be any consumer awareness (at the launching stage) or a lesser degree of consumer awareness a company desires. Other benefit is the financial advantage provided by the alliance. It results from the sharing space, which lowers operating costs, maximizes marketing effect through joint promotions and increases marked exposure with one product carrying both brand names.

Though many firms try to co-brand in expectation of benefit, caution is recommended when using this strategies and common sense suggests that theoretical research on association formulation may help marketers gain the maximum amount of benefit from such arrangements. Co-branding should be beneficial to both parties and the products or services offered must provide a worthwhile benefit to both participants. The partner chosen for the co-branding strategy should be reliable and responsible. Both companies should represent the partnering company without any possible scandals and public relations problem. The acting of each single partner influences the customer bases very easily. Every business needs capital and also in creating partnership of two companies, the financial strength is very important. This is especially important for the future possibility of problems or slow sales periods. To be more precise, before choosing a branding partner, it is necessary to consider that the existing brand usually awoke some association in the past. In some cases a problem can occur, and hence that a prior brand association may limit co-branding possibilities.

Co-branding is a dynamic branding strategy and its significance is growing especially with the increasing importance of Internet as a medium. Although the benefits of co-branding are immense especially in a complex market like that of India but there are also some risks which are inherent in the concept.

Brand Extension

Brand extensions are a familiar phenomenon for most marketers. Organizations see them as the easiest way of entering new markets or segments. Establishing a new consumer brand internationally costs at least 100 million rupees. Thus brand extensions are seen as an easy and possibly inexpensive way of entering new business lines or strengthening old ones if done with caution. Broadly speaking, there are three types of brand extensions: Product related extensions, Image-related extensions and Unrelated Extensions

Type of Brand Extension

Brand extensions are of two types

1.   Extension into related categories

2.   Extension into unrelated categories

An example of first is Nirma washing powder becoming Nirma washing soap. An example of second category is the name Godrej being used for both the Soaps and Almirahs, although there is nothing common to soap and almirah. Yet Godrej as a brand name established itself successfully in both the categories and hence called an unrelated extension.

Related extension could further take two routes:

1. Extension into same category

2. Extension into a category that is different but similar in benefits, association and appeal to parent brand.

An Example of first is Fair & Lovely beauty cream launching Fair & Lovely Multivitamin Cream, another fairness cream but with some specialty. Here the product has not been changed but stretched to accommodate variety. Both Fair & Lovely (old) and Fair & Lovely multivitamin are fairness creams. This could be called category related extension. In second case, however, Sunsilk developed conditioner thus a shampoo brand extending into conditioner. Though products are different, they are linked by the appeal they hold for customers both are hair care products. This has been labeled as image related extension.

Product-related extension is more popularly called 'line extensions'. A line extension is typically a product or flavor or fragrance variant. Examples of this are

Nirma detergent powder extending into cake and fanta soft-drink extending into other variants besides the mango flavor.

Image-related extensions are those where the brand extension bears some logical or emotional relationship with the parent brand. Examples of this are Cinthol moving into talc's from toilet soaps and Zodiac moving into belts from shirts. In both, the same consumer is targeted demographically and psycho graphically.

Unrelated extensions are those where the parent and the brand extensions have little in common but for the brand name. A classic example of this type of extension is the brand name Tata appearing on cars, salt, steel, phones, etc.

Co-branding and brand extension

Co-Branding, extending your brand into new markets geographic, demographic or otherwise by complementing or supplementing another brand's strengths can also contribute to growth. Co-Branding, those teams a manufacturer with a retailer can be especially effective. In a recent survey, 98 percent of retailers predicted that co-marketing would be a standard practice within five years. But like other forms of brand extension, there has to be a "fit" between partners—a complementary or supplementary relationship that makes sense to the marketplace.

Consumer evaluation towards brand extension

Consumer perceptions of the quality of the original brand and the relationship or 'fit' between the original and extension product were found to have an effect on the attitude towards the extension. The perceptions of the overall quality of the extension and consumers 'willingness to try the extension were positively and significantly related to their perceptions of the original brand, the extension complementarily, substitutability and transfer of skills. Consistent with all replication studies, our results do not support a relationship between 'difficulty' and consumer attitudes towards the extension.

When a consumer considers an extension like Nirma detergent cake after the successful acceptance of the parent Nirma detergent powder, the product similarity dimension induces acceptance. On the other hand, when the same Nirma tried to become beauty soap, the market took several years to accept the offering because of the perceived mismatch in the concept consistency dimension. It is for this very reason Colgate tooth brush is acceptable as a brand extension of Colgate toothpaste. There is perceived concept consistency in the extension.

LITERATURE REVIEW

Brand Image

Marketers and advertisers recognize that products (and services) have symbolic images that are often more important to a product's success than are its actual physical attributes and characteristics (Aaker, 1991; Pettijohn et al., 1992; Triplett, 1994). Marketers try to create images for their brands so that they are positioned to fit a distinct market segment occupied by no other brand. They strive to create a brand image that is similar to (congruent with) the self-image of the target consumers (Aaker and Biehl, 1993; Kapferer, 1992). For example, Revlon, which had long targeted older women with advertising campaigns featuring such celebrities as the late Audrey Hepburn decided to reposition the image of their cosmetics to appeal to younger women. Choosing younger models to advertise their products was necessary because the image associated with Audrey Hepburn was not consistent with the self-image of younger women.

In today's highly competitive business environment, a well positioned brand image is very important (Arnold, 1992). This is evidenced by the recent $25 billion purchase price for RJR Nabisco which was based in large part on the value and equity in the images that had been established for RJR's brands. Furthermore, research has shown that the ability of consumers to recognize and identify consumption symbolism (brand images) is almost fully developed by the sixth grade (Belk *et al.*, 1982). As the marketplace becomes more crowded, consumers often make purchase decisions relying more on a brand's image than on its physical characteristics. This is particularly true of products that are in the "mature" stage of their life cycle. Murphy (1990) describes the life cycle of a brand in terms of three stages. First, a new brand may enjoy a "proprietary" period where it is seen as unique in the market. Second, the brand enters the "competitive" stage where competitors match the functional characteristics of the brand and new ways must be found to sustain a significant product advantage. Third, the "image stage" of the brand life cycle is one in which any unique product and functional advantages have been eroded and symbolic values (brand images) have much greater importance in differentiating the brand from its competition.

Consider the "cola wars." Coke and Pepsi are marketed based primarily on image. Coke is traditional, American values. It's "Always Coca-Cola." Pepsi is the "Choice of a New Generation." Although the two products are very similar in many ways, the images associated with the brands are very different. Cigarettes, alcohol, and colognes are also marketed primarily based on image.

One way to measure brand image is to have consumers rate a brand on a series of semantic differential scales anchored by such personality dimensions as masculine-feminine, introvert-extrovert, modern-old fashioned, etc. Ratings on these dimensions are combined to create an overall brand image (personality) profile. Another way to measure brand image is to have consumers draw pictures of the typical users of various brands. In one study, consumers drew Marlboro smokers as hard workers and ladies' men, Michelin tire users as sophisticated, Porsche drivers as men carrying brief-cases, and Pillsbury cake mix users as old-fashioned, fat and dowdy housewives dressed in frilly aprons with prim bows

(Kanner, 1989). Pillsbury addressed this unfavorable image by redesigning its logo and package to seem more up-to-date and consistent with the self-image of modern women they were targeting (Bird, 1991).

As marketers become increasingly aware of the strategic importance of brand image, there is a need for research into the effects of brand image on consumers' brand evaluations and ways in which marketers can manage these effects. In the past, marketing researchers have attempted to use personality theories to explain consumers' behaviors. Researchers have tried to identify meaningful relationships between a consumer's personality and their purchasing behaviors. One such personality theory often applied to marketing holds that individuals have an actual self-concept based on who they think they are, and an ideal self-concept based on who they think they would like to be. A consumer's self-concept can be used to influence attitudes and purchase decisions.

Boush and Loken (1991), Keller and Aaker (1992), Levin and Levin (2000), Levin, Davis, and Levin (1996), Prelec, Wernerfelt, and Zettelmeyer (1997), suggested that one brand's equity can be transferred to other products with which it is strategically linked. In other words, a brand's good reputation can enhance the image of an alliance that includes that brand. While the establishment of online/offline alliances has been slow to develop, several do exist: Amazon.com/Borders, Amazon.com/Circuit City and Drugstore.com/CVS Pharmacy, with a very popular, though never confirmed, rumor of an Amazon.com/Wal-Mart alliance in the works.

David A. Aaker, Kevin Lane Keller (1990) Two studies were conducted to obtain insights on how consumers form attitudes toward brand extensions, (i. e., use of an established brand name to enter a new product category). In one study, reactions to 20 brand extension concepts involving six well-known brand names were examined. Attitude toward the extension was higher when (1) there was both a perception of "fit" between the two product classes along one of three dimensions and a perception of high quality for the original brand or (2) the extension was not regarded as too easy to make. A second study examined the effectiveness of different positioning strategies for extensions. The experimental findings show that potentially negative associations can be neutralized more effectively by elaborating on the attributes of the brand extension than by reminding consumers of the positive associations with the original brand.

Piyush Kumar (2005) A brand that successfully extends from its parent category into a new extension category often faces a counter-extension by a brand from the extension category back into its own parent category. However, there is little guidance available on how brand extension strategies should be adjusted to mitigate the risk to the parent brand from counter extensions. This research examines the differential impact of co-branded versus solo-branded extensions on customer evaluations of brand counter extensions. It demonstrates that customers evaluate a counter extension less favorably if the preceding extension by the focal brand is co-branded than if it is solo branded. The findings suggest

that co-branding not only improves the attribute profile of a brand's own extension but also helps protect the brand against counter extensions.

A. M. Levin (2002) showed that dual brands (two restaurants in the same location) were rated higher when the two brands were seen as providing complementary services. These studies show that brand alliances are judged more favorably when the brands are seen as providing complementary features. Clearly online-offline brand alliances provide such complementarily.

Levin and Levin (2000) model of assimilation and contrast effects specifically developed a model of the role of brand alliances in the assimilation of product evaluations. They showed that when two brands are described by different attributes and qualities but are strategically linked, consumers are apt to think that the two brands share common levels of overall quality. The authors predicted that assimilation processes would predominate because of the non-overlapping of attributes used. This leads to a transfer of affect between brands based on perceptions of overall quality when the two brands in an alliance differ in attribute level favorability. Evaluations of the brand with the less favorable attributes in the pair were raised in comparison to evaluations of the same brand in the control (non-alliance) condition. Conversely, evaluations of the brand with the more favorable attributes were lowered. Thus, any brand, should be cautious in forming an alliance with a brand of lesser quality that could bring down its image

Park, Jun and Shocker (1996) showed that a combination of two existing brand names (which they called a "composite brand extension") received more favorable consumer reactions when it consisted of two complementary brands.

Park, Milberg and Lawson (1991) had found that the most favorable reactions occur when there is a high degree of perceived fit between the original brand and the new extension.

Rao, Qu, and Ruekert (1999) indicated that the quality of one product signals the quality of another when the two are allies because consumers are sensitive to the potential damage to a brands reputation by forming a poor alliance.

Samu, Krishnan and Smith (1999) found that advertising strategies that combined two brands led to stronger brand beliefs when the advertisement stressed brand attributes and the two brands were seen as complementary.

Meyers-Levy and Sternthal (1993) indicated that assimilation in the evaluation of two products is most likely to occur when consumers evaluate two instances of the same product class.

Simonin and Ruth (1998) report three separate demonstrations that consumer attitudes toward the brand alliance influence subsequent impressions of each partner's brand. They call these "spillover" effects. Such spillover effects

constitute the basis for our second hypothesis, those evaluations of product attributes pertaining to online or offline features will be higher when the attributes are seen as complementing each other within an online-offline brand alliance. This is because the perceived complementarily of functions provided by online and offline brands will create a positive "halo" or "spillover" effect when evaluating each brand of an online/offline alliance.

Hawkins, Best, and Coney (2004) "Co-branding has been shown to modify attitudes toward the participating brands. However, the effects can be positive or negative and can differ for the two brands involved. Thus, a firm considering co-branding should be sure that its target market views the potential partner positively and that the two brands fit together in a way that adds value." We extend the study of the transfer of affect across brands engaging in an alliance to the case of online-offline brand alliances.

Although the brand management literature correctly cautions against indiscriminate use of extension (Gibson 1990; Loken and Roedder-John 1993), there has been almost no research on whether a brand's extension strategy influences customer response toward counter extensions. Thus, there is little guidance available on how extension strategies should be adjusted to mitigate the risk to the parent brand from counter extensions. However, as brand extension activity across category boundaries continues to increase, the interplay between extension and counter extensions is likely to emerge as a key brand management issue. Therefore, marketers must begin to understand how to account for and manage the risk from counter extensions to ensure that the gains from the extension of their brand into a new product-market are not significantly offset by the losses suffered as a result of counter extensions that are launched into their product-market. They investigated that whether co-branding an extension with a partner brand instead of launching it solo branded has an effect on customers' responses toward a counter extension.

In the last twenty five years an increase is noticeable in the number of consumer products introduced by two brands through a brand alliance. Brand alliances can be defined as "a form of co-operation between two or more brands with significant customer recognition, in which all the participants' brand names are retained" (Blackett and Russell, 1999). The brand alliance strategy has been thoroughly discussed from the brand-owners point of view, related to the execution of the alliance, its advantages and disadvantages. In addition, several studies have examined the consumer's point of view with regard to some forms of brand alliance. Various forms of the brand alliance strategy exist; for example, joint sales promotions, bundling, dual branding, composite brand extensions, and co-branding (Simonin and Ruth, 1998; Park, Jun and Shocker, 1996; Levin, 2002; Rao, Qu and Ruekert, 1999; Leuthesser, Kohli and Suri, 2003). Little academic studies have been conducted to investigate how consumers react to a new co-branded product. Therefore, the main focus in this study is on how consumers evaluate co-branded products.

Co-branding is defined as the "combining and retaining of two or more brands to create a single, unique [new] product" (Leuthesser, Kohli and Suri, 2003). Examples of such products are the portable sports audio devices by Philips and Nike, the draught beer system for home use introduced by Heineken and Krups, the Tide Buzz Ultrasonic Stain Remover by Black & Decker and Tide and the electric toothbrush by Oral B and Braun. From literature related to brand alliances in general, co-branding in particular, and the related brand extension strategy, four major factors of influence on the evaluation of a new co-branded product were found: A) fit between the current products of both brands (Park, Jun and Shocker, 1996; Simonin and Ruth, 1998) B) fit between both brands (Simonin and Ruth, 1998), C) fit between the current products of the brand and the new product (Herr, Farquhar and Fazio, 1993; Aaker and Keller, 1990), and D) fit between the brand and the new product (Park, Milberg and Lawson, 1991; Broniarczyk and Alba, 1994). Of course, other variables such as familiarity with and prior affect towards the brands have to be taken into account as they may have an impact on the evaluation of the product.

Brand extension refers to the use of an existing brand name to introduce a new product (Keller, 2003). Please note that it is the use off the same name that identifies a form of brand extension. If a company introduced a new product and does not make use of any of its existing brand names then this is not a form of brand extension but the introduction of a new individual brand.

When a new brand is combined with an existing brand, the brand extension is often referred to as a sub-brand. An existing brand that gives birth to a brand extension is often referred to as the parent brand.

Co-branding is a form of co-operation between two or more brands with significant customer recognition, in which ALL the participants' brand names are retained. It is usually of medium to long term duration (Blackett and Boad, 1999). Co-branding often results in a venture into a new product category for the participant brands, e.g. the Sony-Ericsson mobile phone co-brand. Note that 'significant customer recognition' usually means the presentation of participant brand names together almost as one double barreled brand name. (Boush et al. 1987) In this respect, brand-extension research has shown that the positive affect of a brand may be transferred to the extension (Aaker 1990; Aaker and Keller 1990; Park, Milberg, and Lawson 1991). Moreover, affect transfer is most likely to occur when the brand's old and the new categories are perceived to be similar (Broniarczyk and Alba 1994). Finally, brand-specific associations are another important factor to consider; they may dominate the effects of brand affect and category similarity, especially when consumers are knowledgeable about the brand.

Simonin and Ruth (1998) consumer attitudes towards brand alliances are examined. The focus in this work is on spillover effects of brand alliance evaluations on the later evaluation of partners and on the role of brand familiarity in these relationships. The result of this study is that consumers´

attitudes toward a particular brand alliance influenced their subsequent attitudes toward the individual brands that comprise that alliance.

Park et al. (1996) deals with a Composite Brand Extension (CBE), combination of existing brand names, analogous to co-brand. It examines how consumers form the concept of the CBE based on their concept of their constituent brands, the roles of each constituent brand in forming this concept and the effective of the CBE strategy. According to the study a composite brand name can favorably influence subjects´ perception of the CBE and those complementarities between the primary and secondary constituent brands is a more important factor in the success of the CBE strategy than a positive evaluation of the secondary brand.

OBJECTIVES OF THE STUDY

- To design, develop and standardized a measure to evaluate brand image of parent brands, co-brands and brand extensions.

- To evaluate the cause and effect relationship between parent brands, co-brands and brand extensions and test the measurement and structural model simultaneously using Structural Equation Modeling technique; Smart PLS.

- To identify and suggest new vistas for further research.

RESEARCH METHODOLOGY

The study was causal in nature and was aimed at evaluating the impact of main brand image and co-brand image on brand extension Image. The study was conducted after identifying suitable corporate data using the concept of brand extension and co-branding. General customer residing at Gwalior constituted the population for the study. Purposive sampling technique was used to identify responses for the study and a sample size of 100 respondents was taken to conduct the study.

Self-designed questionnaire was used for evaluating brand image of parent brand, co-brand and brand extension. Data was collected on a Likert type scale, where 1 indicated minimum agreement and 7 indicated maximum agreement.

Cronbach's Alpha reliability was computed using PASW 18 software to evaluate the reliability of the questionnaire. Cronbach's Alpha was also calculated after deleting each statement from questionnaire. Factor analysis was used to identify underlying factors in the questionnaire. Smart PLS software was used to test the model shown below. Since the sample size used for the study was small the researchers were not sure whether the respondent data will be normally distributed. Since Smart PLS is suitable for non-normally distributed data the model testing method was adopted for this study. Both the measurement model and the structural models were evaluated simultaneously through Smart PLS.

Smart PLs was also used to verify the convergent and discriminant validity of the measure.

RESULTS AND DISCUSSIONS

Reliability Test: Cronbach's Alpha reliability method was applied to check the reliability of all items in the questionnaire. The reliability coefficient value was highly significant i.e. 0.899 and depict high reliability of the questionnaire. Reliability test was applied using PASW18 software and the reliability test measures are given below:

Table 1: Showing the Cronbach's Alpha Reliability of the Measure

Cronbach's Alpha	No. of Items
0.899	32

The results showing reliability when item dropped indicated that the reliability could improve if item numbers 11, 18 and 29 are dropped. However the improvement was less than .003 and therefore, ignored and all the 32 statements were retained in the final questionnaire.

Factor Analysis

Kaiser - Meyer - Olkin Measure of Sampling Adequacy and Bartlett's Test of Sphericity: The Kaiser - Meyer - Olkin Measure of Sampling Adequacy value was 0.875 indicating that the sample was adequate to consider the data as normally distributed. The Bartlett's Test of Sphericity tests the null hypothesis that the item-to-item correlation matrix was an identity matrix. The hypothesis was tested through Chi-Square test; the value of Chi-square was found to be 8137.061, which is significant at 0% level of significance. Therefore, null hypothesis is rejected; indicating that the item-to-item correlation matrix is not an identity matrix and is therefore suitable for factor analysis.

Table 2: Showing the KMO and Bartlett's Test Results

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.875
Bartlett's Test of Sphericity	Approx. Chi-Square	8137.061
	df	496
	Sig.	.000

Principle component factor analysis with Varimax rotation and Kaiser Normalization was applied. The factor analysis resulted in 7 factors. The details about factors, the factor name, Eigen value, Variables converged; Loadings, Variance% and cumulative% are shown follows:

Table 3: Showing Exploratory Factor Analysis Results

Factor Name	Eigan Value	Variance Explained	Items Converged	Factor Loads
Compassionate	4.925	15.389	4. Romantic	.808
			19. Familiar	.711
			1. Emotional	.706
			5 Unique	.702
			14 Friendly	.614
			6 Affectionate	.543
			22 Imaginative	.526
			20 Empathetic	.505
Intricate	3.437	10.740	28 Sensitive	.72
			9 Pleasant	.675
			27 Existing	.668
			10 Lively	.661
			8. Honest	.604
			24 Business Like	.407
Irreplaceable	2.605	8.141	17 Strong	.753
			15 Adventure	.583
			16 Carefree	.552
			23 Confident	.529
			2 Trustworthy	.453
Lively	2.394	7.482	11 Active	.716
			29 Gentle	.708
			13 Energetic	.637
			12 Creative	.621
Magnetic	2.228	6.962	7 Comforting	.682
			21 Well known	.619
			25 Formal	.585
			3 Attractive	.523
Upright	2.136	6.674	31 Fresh	.803
			30 Complicated	.679
			32 Economic	.669
Negative	1.463	4.571	26 Compromising	.677
			18 Ugly	.501

Since the same measure was used to evaluate the brand images of original brand, Co-brand and brand extension, the factors identified above on the basis of data collected on original brand, co-brand and brand extension were considered common to all the three types of brand. To evaluate the measurement model and the structural models (shown below as conceptual model) were tested using Smart PLS software. Since the two brand groups could have different relationships between different brand types; the model was tested separately for both the groups of brands i.e. Kinetic group and TVS group. The factors identified above through exploratory factor analysis were used as inputs for testing the measurement model.

Kinetic

Conceptual background and hypotheses

The three constructs of the study are conceptually related to each other by the structural model as sown in the Figure: 1

The relationships between the constructs were analyzed by using the Partial Least Squares (PLS) path-modeling algorithm. The PLS algorithm estimates path models using latent variables. Like covariance based structural Equation Modeling (CBSEM), PLS is a latent variable modeling technique that incorporates multiple dependent constructs and explicitly recognizes measurement error. However, unlike CBSEM, PLS is far less restrictive in its distributional assumptions and does not require normally distributed data (Fornell and Cha, 1994). Specifically, the smart PLS is employed as it allows for estimating both measurement model and structural model simultaneously (Ringle et al, 2005).

Figure: 1 Structural model
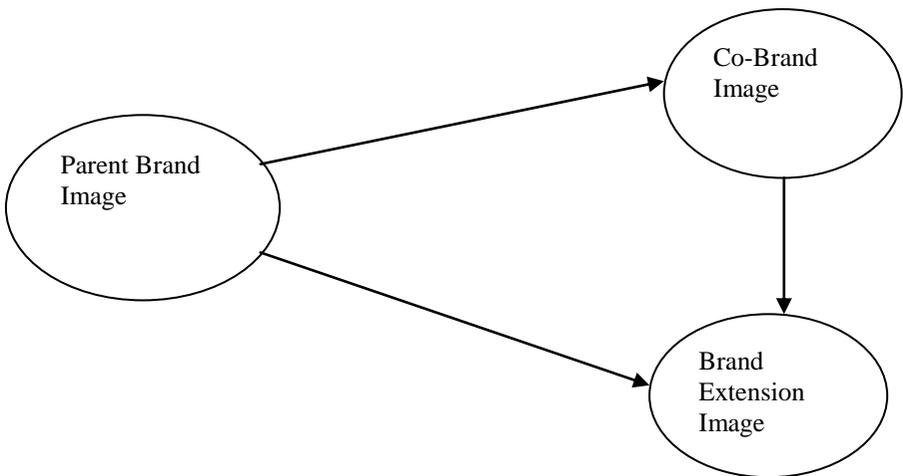
Partial Least Squares (PLS) model was analyzed and interpreted in two stages. In the first stage measurement model was evaluated and in the second stage structural model was evaluated. The measurement model evaluates the relations between manifest variables (observed items) and latent variables (factors). The measurement model was tested through assessment of validity and reliability of the construct measures in the model. This ensured that only reliable and valid constructs' measures were used for assessing the nature of relationships in the overall model (Hulland, 1999). Structural model specifies relations between latent constructs. Estimating and analyzing the path coefficients between the constructs test the structural model. Path coefficients are indicators of the model's predictive ability.

Measurement Model

Tenenhaus et al. (2005) introduce three criteria to determine the overall quality of the model. Specifically, a path model can be assessed at three levels:

(1)   The quality of the measurement model,
(2)   The quality of the structural model, and
(3)   Each structural regression equation used in the structural model.

The quality of the measurement model was tested by assessing the individual item and scale reliability followed by convergent and discriminant validity of constructs' measures. Initially the relationships were displayed between the constructs of Parent Brand Kinetic, Co Brand Kinetic and Brand Extension Kinetic. PLS algorithm was applied and the resultant relationships, coefficients and values of loadings are shown in Figure 2.

Fig 2: Initial Path Model
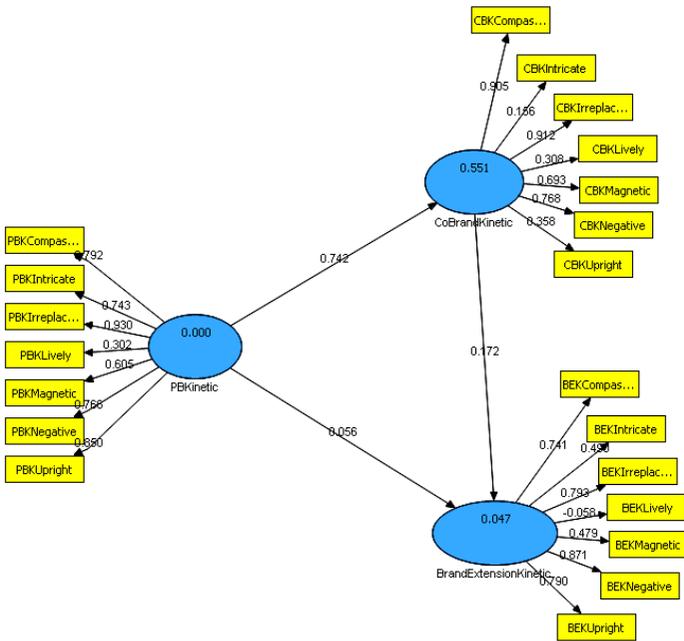
With these dropouts the resultant as well as final model for further investigations is presented in Fig: 3

In PLS, loadings of respective factors on their respective latent constructs are examined to assess the reliability of the factors (Hulland, 1999).

Since the final model was decided after dropping out insignificant factors having factor loadings of less than 0.5, the model was analyzed by using Smart Pls.2.0 M3 software.

Fig 3: Showing the final Path Model
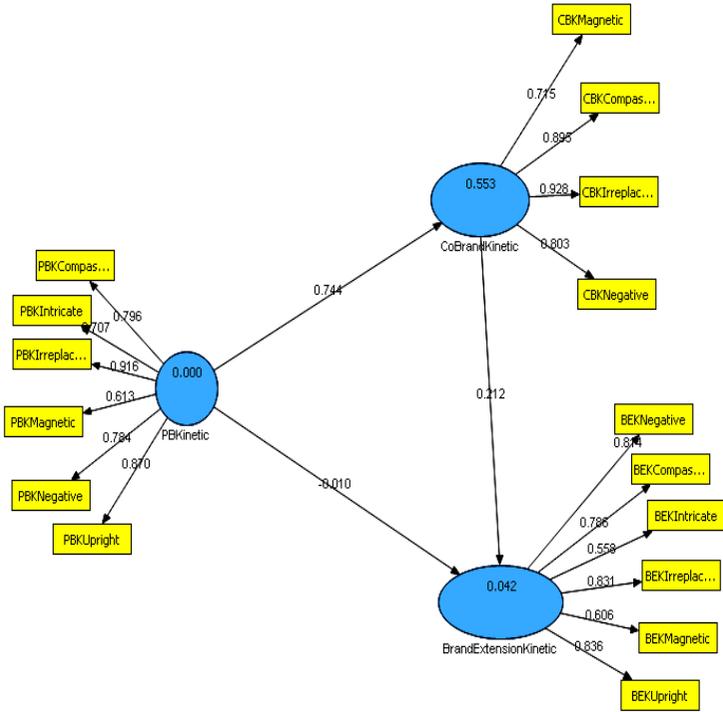
Reliability

In PLS, individual factor reliability was assessed by examining the loadings of respective factors on their respective latent constructs (Hulland, 1999). The higher loadings imply that there is more shared variance between the construct and its measures than error variance. In this study the criteria of 0.50 recommended by Hulland (1999) was adopted for the retention of factors. The factor loadings from the final PLS measurements are reported in Figure: 3

In addition to Cronbach's (1951) alpha, reliability of each variable was assessed through Fornell and Larcker's (1981) measure of composite reliability. This measure is preferred over Cronbach's alpha because it offers a better estimate of variance shared by the respective indicators and because it uses the item loadings obtained within the nomological network (Hair et al., 2006). In this study the composite factor reliability coefficients of the constructs ranged from 0.800 to 0.906 (see Table 4), which met the standard of 0.70 as suggested by Fornell

and Larcker (1981). The factor loadings, Cronbach's alpha, composite reliability and Average Variance Extracted (AVE) values calculated by PLS algorithms are tabulated in table 4.

Table 4: Factor loadings, Cronbach's alpha, composite reliability and AVE

Block	Factor loadings	Cronbach's alpha	Composite reliability	AVE
Brand Extension Kinetic		0.859082	0.880924	0.557856
BEKCompassionate	0.785625			
BEKIntricate	0.557733			
BEKIrreplaceable	0.831306			
BEKMagnetic	0.606052			
BEKNegative	0.813530			
BEKUpright	0.835863			
Co-Brand Kinetic		0.857505	0.904231	0.704493
CBKCompassionate	0.895437			
CBKIrreplaceable	0.927966			
CBKMagnetic	0.714505			
CBKNegative	0.802825			
Parent Brand Kinetic		0.872972	0.906026	0.620235
PBKCompassionate	0.796359			
PBKIntricate	0.706991			
PBKIrreplaceable	0.916027			
PBKMagnetic	0.613499			
PBKNegative	0.783816			
PBKUpright	0.870363			

Convergent Validity

Convergent validity refers to the degree of agreement in two or more measures of the same construct (Camines and Zeller, 1979). Evidence of convergent validity was assessed by inspection of variance extracted for each factor (Fornell and Larcker, 1981). According to Fornell and Larcker (1981), convergent validity is established, if the variance-extracted value exceeds 0.50. Results indicated that the variance extracted for four scales ranged from 0.557 to 0.927 (Table: 4). This shows that the scales used for Parent Brand Kinetic, Co-Brand Kinetic and Brand Extension Kinetic possessed convergent validity.

Discriminant Validity

Discriminate validity is the degree to which any single construct is different from the other constructs in the model (Carmines and Zeller, 1979). Discriminant validity was assessed by the test provided by Fornell and Larcker (1981) in which the pair-wise correlations between factors obtained were compared with the variance extracted estimates for the constructs making up each possible pair. The Discriminate validity is adequate when constructs have an AVE loading greater than 0.5 meaning that at least 50% of measurement variance was captured by the construct (Chin, 1998). In addition, discriminate validity is confirmed if the diagonal elements are significantly higher than the off-diagonal values in the corresponding rows and columns. The diagonal elements are the square root of the AVE score for each construct (i.e., Parent Brand Kinetic, Co-Brand Kinetic and

Brand Extension Kinetic). These values are shown in Table 5.   Result revealed
that all the constructs possess Discriminant validity.

Table 5: Showing the discriminant Validity Results

Block	Brand Extension Kinetic	Co-Brand Kinetic	PB Kinetic
Brand Extension Kinetic	1.000000		
Co-Brand Kinetic	0.205039	1.000000	
PB Kinetic	0.148188	0.743538	1.000000

Structural Model Analysis

There are two parts in a PLS path model: 1) a measurement model relating the
observable variables to their own latent variables and 2) a structural model
relating some endogenous latent variables to other latent variables. The
measurement model is also called the outer model and the structural model the
inner model (Tenenhaus et al.2005).

In Partial Least Squares (PLS) method, structural model and hypothesis were
tested by computing path coefficients (β). Because PLS does not require a
normally distributed data it is evaluated with R-squared calculation for
dependent latent variables (Cohen, 1988) and the average Variance extracted
(Fornell & Larchner, 1981). The first item that PLS provides to determine how well
the model fits the hypothesized relationship is the squared multiple correlations
(R^2) for each dependent construct in the model. The R^2 measures a construct's
percent variation that is explained by the model (Wixom & Watson, 2001).

The quality of the structural model for each endogenous block can be assessed by
the Redundancy index (Redundancy is the "capacity of the model to predict its
manifest variables from the indirectly connected latent variables" (Chantelin,
Vinzi and Tenenhaus, 2002). Since the objective of PLS is to maximize variance
explained rather than fit, therefore prediction-oriented measures such as R^2 are
used to evaluate PLS models (Chin, 1998). According to Chin's (1998)
recommendations, a bootstrapping procedure using 1000 sub samples was
performed to evaluate the statistical significance of each path coefficient. Table 6
shows hypothesized path coefficients along with their bootstrap values, 'T'
values.

**Table 6: Showing the path coefficients along with their bootstrap values, 'T'
values**

	Original Sample (O)	Sample Mean (M)	Standard Deviation	Standard Error	T Statistics (|O/STERR|)
Co-Brand Kinetic -> Brand Extension Kinetic	0.212134	0.236923	0.186037	0.186037	1.140279
PB Kinetic -> Brand Extension Kinetic	-0.009542	-0.003016	0.190218	0.190218	0.050162

PB Kinetic -> Co-Brand Kinetic	0.743538	0.748498	0.055660	0.055660	13.358559

The relationship between Co-Brand Kinetic and Brand Extension Kinetic was insignificant with β = 0.212134 and t = 1.140279 (table value is 1.96 at ∝ 0.05 degree of freedom > 120) indicating that the Co-Brand of Kinetic has direct positive insignificant influence on the Brand Extension of Kinetic. The Brand Extension Image of Kinetic changes in direct proportion to Co-Brand of Kinetic with a coefficient of 0.212134. This clearly indicates that a 100 points change in Co-Brand Image of Kinetic will bring 21.2 points change in the Brand Extension Image of Kinetic.

The relationship between Parent Brand Kinetic and Brand Extension Kinetic was insignificant with β = -0.009542and t = 0.050162 (table value is 1.96 at ∝ 0.05 degree of freedom > 120) indicating that the Parent Brand of Kinetic has direct negative insignificant influence on the Brand Extension of Kinetic. The Brand Extension Image of Kinetic changes in direct proportion to Parent Brand Image of Kinetic with a coefficient of -0.009542. This clearly indicates that a 100 points change in Parent Brand Image of Kinetic will bring 0 points change in the Brand Extension Image of Kinetic. It means that the Parent Brand Image of Kinetic doesn't have the strong impact on Brand Extension Image of Kinetic

The relationship between Parent Brand Kinetic and Co-Brand Kinetic was significant with β = 0.743538 and t = 13.358559 (table value is 1.96 at ∝ 0.05 degree of freedom > 120) indicating that the Parent Brand of Kinetic has direct positive influence on the Co-Brand Kinetic. The Co-Brand Image of Kinetic changes in direct proportion to the Parent Brand Image of Kinetic with a coefficient of 0.743538. This clearly indicates that a 100 points change in Parent Brand Image of Kinetic will bring 74.3 points change in the Co-Brand Image of Kinetic.

Summary: Out of the three paths used to connect the measures in the structural model, one path was supporting the hypothesis that Parent Brand has a direct positive influence on the Co-Brand of Kinetic. This clearly indicates that Parent Brand image of Kinetic had an influence on Co-Brand Image of Kinetic. However two path coefficients between Co-Brand of Kinetic and Brand Extension, Parent Brand Kinetic and Brand Extension of Kinetic don't support the hypothesis. So it clearly shows that the Co-Brand has a very little impact on Brand Extension of Kinetic and Parent Brand does not have an impact on Brand Extension of Kinetic.

Model evaluation

Contrary to CBSEM, PLS path modeling does not report any kind of fit indices like TFI (Tucker-Lewis Fit Indices), RMSEA (Root Mean Square Error Approximation) or CFI (Comparative Fit Indices), since PLS makes no distributional assumptions for parameter estimation. The evaluation of PLS model is therefore, based on prediction-oriented measures that are non-parametric (Chin, 1998). The PLS

structural model is mainly evaluated by Goodness-of-Fit (GoF) (Tenenhaus et al., 2005), and by using the Stone-Geiser Q-square test for predictive relevance (Stone, 1974; and Geiser, 1975).

Goodness-of-Fit (GoF) (Tenenhaus et al., 2005) was employed to judge the overall fit of the model, Gof, which is the geometric mean of the average communality and the average R^2, represents an index for validating the PLS model globally, as looking for a compromise between the performance of the measurement and the structural model, respectively. For this model the GoF index was 0.432051 (See table 7 below).

Table 7: Showing Model Evaluation Results

Block	R^2	Communality	H^2	Redundancy	F^2
Parent Brand Kinetic		**0.620235**			
Brand Extension Kinetic	0.042082	**0.704493**		**0.012548**	0.0000
Co-Brand Kinetic	0.552849	**0.557857**		**0.388584**	0.0000
Average	0.2974655	0.627525		0.205066	
GoF = √ average R^2 × average communality = √0.186668= 0.432051 (Tenenhaus et al., 2005)					
Note: H^2 = CV-Communality Index, F^2 = CV-Redundancy Index					

Further the quality of path model can also be evaluated by calculating the Q - square statistic. The Q square statistic measures the predictive relevance of the model by reproducing the observed values by the model itself. A Q square greater than 0 means the model has predictive relevance; whereas Q-square statistic less than zero mean that the modal lacks predictive relevance (Fornell and Cha, 1994). In PLS two kinds of Q- square statistics are estimated by using Blindfold method of calculations.

They are cross-validated communality (H^2) and cross-validated redundancy (F^2). Blindfolding procedure ignores a part of the data for a particular block during parameter estimation. The ignored data part is then estimated using the estimated parameters and the procedure is repeated until every data point has been ignored and estimated. Omission and estimation of data point depends on the chosen omission distance G (Chin, 1998).

The cross validated communality H^2 measures the capacity of the model to predict the Manifest Variables (MV's) directly from their latent Variables (LV's) by cross validation. It uses only the measurement model. The prediction of an MV of an endogenous block is carried out by using the MV's of the same block. The cross-validated redundancy F^2 measures the capacity of the path model to predict the endogenous MV's indirectly from a prediction of their own LV using the related structural relation, by cross-validation (Tenenhaus et al., 2005). For this data set blindfolding was carried out by using smart PLS with omission distance G = 25 and the results are shown in Figure 4.

Results reveal that for this model all the blocks had high values of H^2 ranging from 0.000 to 0.470687 and F^2 ranging from 0.143545 to 0.373359. All H^2 and F^2 values were positive (above thresh hold level), meaning that the model had acceptable predictive relevance.

Fig 4: Blind Folding Path Modeling
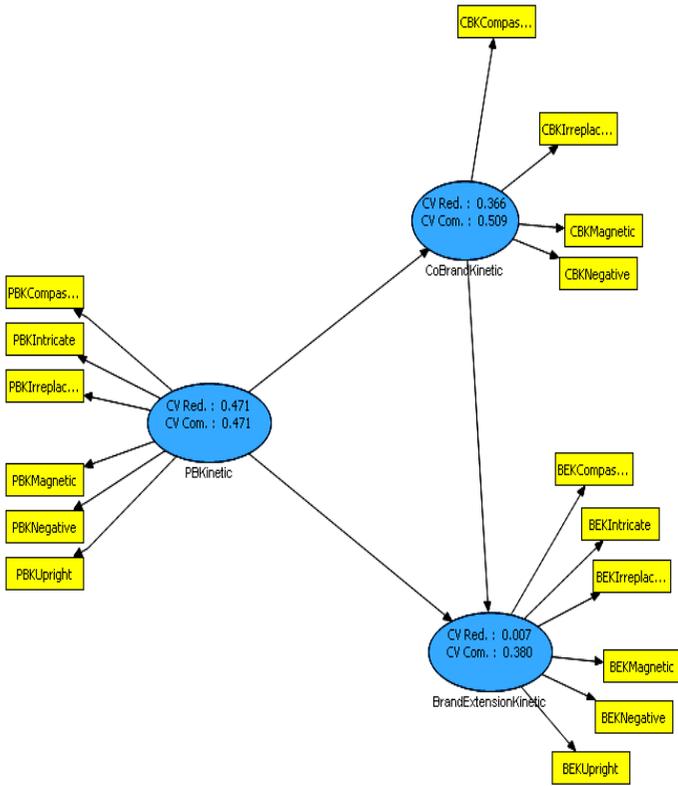
TVS

Conceptual background and hypotheses

The three constructs of the study are conceptually related to each other by the structural model as sown in the Figure: 4.1 The relationships between the constructs were analyzed by using the Partial Least Squares (PLS) path-modeling algorithm. The PLS algorithm estimates path models using latent variables. Like covariance based structural Equation Modeling (CBSEM), PLS is a latent variable modeling technique that incorporates multiple dependent constructs and explicitly recognizes measurement error. However, unlike CBSEM, PLS is far less restrictive in its distributional assumptions and does not require normally distributed data (Fornell and Cha, 1994). Specifically, the smart PLS is employed as it allows for estimating both measurement model and structural model simultaneously (Ringle et al, 2005).

Figure 5: Conceptual Structural Model

Partial Least Squares (PLS) model was analyzed and interpreted in two stages. In the first stage measurement model was evaluated and in the second stage structural model was evaluated. The measurement model evaluates the relations between manifest variables (observed items) and latent variables. The measurement model was tested through assessment of validity and reliability of the construct measures in the model. This ensured that only reliable and valid constructs' measures were used for assessing the nature of relationships in the overall model (Hulland, 1999). Structural model specifies relations between latent constructs. Estimating and analyzing the path coefficients between the constructs test the structural model. Path coefficients are indicators of the model's predictive ability.

Measurement Model

Tenenhaus et al. (2005) introduce three criteria to determine the overall quality of the model. Specifically, a path model can be assessed at three levels:

(1)   The quality of the measurement model,

(2)   The quality of the structural model, and

(3)   Each structural regression equation used in the structural model.

The quality of the measurement model was tested by assessing the individual item and scale reliability followed by convergent and discriminant validity of constructs' measures. Initially the relationships were displayed between the

constructs of Parent Brand TVS, Co Brand TVS and Brand Extension TVS. PLS algorithm was applied and the resultant relationships, coefficients and values of loadings are shown in Figure 6.

In PLS, loadings of respective factors on their respective latent constructs are examined to assess the reliability of the factors (Hulland, 1999). In this study the criteria of 0.50 recommended by Hulland (1999) was adopted for the retention of the factors. When the factor loadings are closely examined, three factors of Co-Brand TVS, CBTVS Intricate (0.134), CBTVS Lively (0.248), CBTVS Upright (0.303) and one factor of Brand Extension TVS, BETVS Lively (-0.041) were reported with sub standard factor loadings (< 0.5). All these four factors were dropped out from the further investigations. With these dropouts the resultant as well as final model for further investigations is presented in Fig: 7.
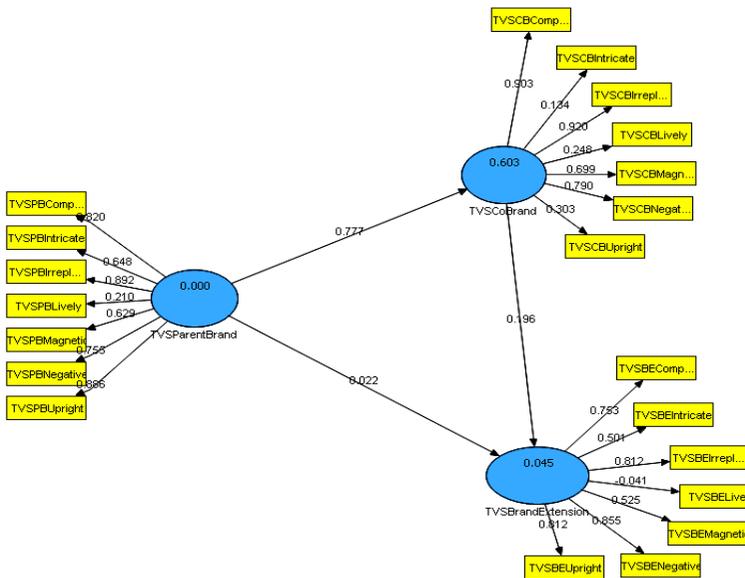
Fig 6: Initial Path Model

Figure 7: Final Path Model
Since the final model was decided after dropping out insignificant factors having factor loadings of less than 0.5, the model was analyzed by using Smart PLS 2.0 M3 software.

Reliability

In PLS, individual factor reliability was assessed by examining the loadings of respective factors on their respective latent constructs (Hulland, 1999). The higher loadings imply that there is more shared variance between the construct and its measures than error variance. In this study the criteria of 0.50 recommended by Hulland (1999) was adopted for the retention of factors. The

factor loadings from the final PLS measurements are reported in Figure: 7. In addition to Cronbach's (1951) alpha, reliability of each variable was assessed through Fornell and Larcker's (1981) measure of composite reliability. This measure is preferred over Cronbach's alpha because it offers a better estimate of variance shared by the respective indicators and because it uses the item loadings obtained within the nomological network (Hair et al., 2006).
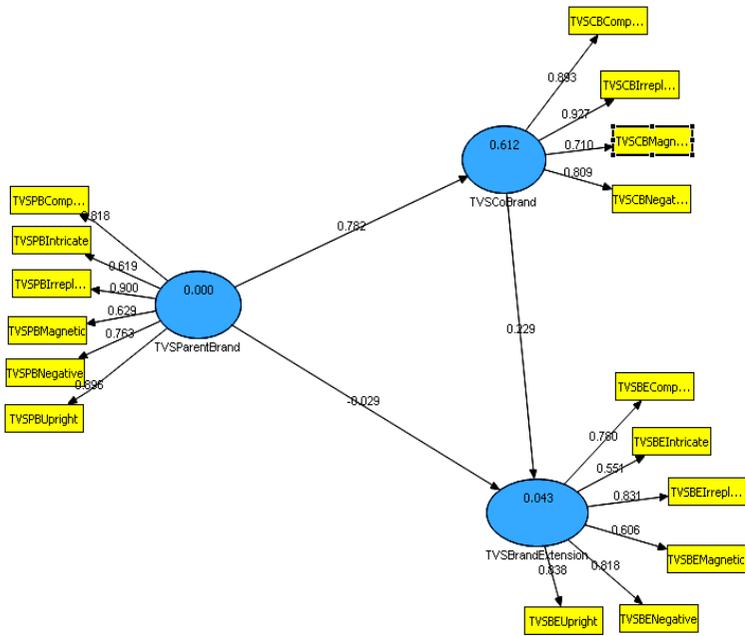
In this study the composite factor reliability coefficients of the constructs ranged from 0.880 to 0.904 (see Table 8), which met the standard of 0.70 as suggested by Fornell and Larcker (1981). The factor loadings, Cronbach's alpha, composite reliability and Average Variance Extracted (AVE) values calculated by PLS algorithms are tabulated in table 8.

Table 8: Factor loadings, Cronbach's alpha, composite reliability and AVE

Block	Factor loadings	Cronbach's alpha	Composite reliability	**AVE**
Brand Extension TVS		0.859082	0.880428	0.556946
TVSBECompassionate	0.780098			
TVSBEIntricate	0.550676			
TVSBEIrreplaceable	0.831363			
TVSBEMagnetic	0.606019			
TVSBENegative	0.817834			
TVSBEUpright	0.838215			
Co-Brand TVS		0.857505	0.904098	0.704197
TVSCBCompassionate	0.893152			
TVSCBIrreplaceable	0.927221			

TVSCBMagnetic	0.710047			
TVSCBNegative	0.809423			
Parent Brand TVS		0.864916	0.900830	0.607362
TVSPBCompassionate	0.818396			
TVSPBIntricate	0.619261			
TVSPBIrreplaceable	0.900132			
TVSPBMagnetic	0.629336			
TVSPBNegative	0.763321			
TVSPBUpright	0.895522			

Convergent validity

Convergent validity refers to the degree of agreement in two or more measures of the same construct (Camines and Zeller, 1979). Evidence of convergent validity was assessed by inspection of variance extracted for each factor (Fornell and Larcker, 1981). According to Fornell and Larcker (1981), convergent validity is established, if the variance-extracted value exceeds 0.50. Results indicated that the variance extracted for four scales ranged from 0.556 to 0.704 (Table: 8). This shows that the scales used for Parent Brand TVS, Co-Brand TVS and Brand Extension TVS possessed convergent validity.

Discriminant validity

Discriminate validity is the degree to which any single construct is different from the other constructs in the model (Carmines and Zeller, 1979). Discriminant validity was assessed by the test provided by Fornell and Larcker (1981) in which the pair-wise correlations between factors obtained were compared with the variance extracted estimates for the constructs making up each possible pair. The Discriminate validity is adequate when constructs have an AVE loading greater than 0.5 meaning that at least 50% of measurement variance was captured by the construct (Chin, 1998). In addition, discriminate validity is confirmed if the diagonal elements are significantly higher than the off-diagonal values in the corresponding rows and columns. The diagonal elements are the square root of the AVE score for each construct (i.e., Parent Brand TVS, Co-Brand TVS and Brand Extension TVS). These values are shown in Table 9   Result revealed that all the constructs possess Discriminant validity.

Table 9: Showing Discriminant Validity

Block	TVS Brand Extension	TVS Co-Brand	TVS Parent Brand
TVS Brand Extension	1.000000		
TVS Co-Brand	0.206437	1.000000	
TVS Parent Brand	0.150368	0.782449	1.000000

Structural model analysis

There are two parts in a PLS path model: 1) a measurement model relating the observable variables to their own latent variables and 2) a structural model

relating some endogenous latent variables to other latent variables. The measurement model is also called the outer model and the structural model the inner model (Tenenhaus et al.2005).

In Partial Least Squares (PLS) method, structural model and hypothesis were tested by computing path coefficients (β). Because PLS does not require a normally distributed data it is evaluated with R-squared calculation for dependent latent variables (Cohen, 1988) and the average Variance extracted (Fornell & Larchner, 1981). The first item that PLS provides to determine how well the model fits the hypothesized relationship is the squared multiple correlations (R^2) for each dependent construct in the model. The R^2 measures a construct's percent variation that is explained by the model (Wixom & Watson, 2001).

The quality of the structural model for each endogenous block can be assessed by the Redundancy index (Redundancy is the "capacity of the model to predict its manifest variables from the indirectly connected latent variables" (Chantelin, Vinzi and Tenenhaus, 2002). Since the objective of PLS is to maximize variance explained rather than fit, therefore prediction-oriented measures such as R^2 are used to evaluate PLS models (Chin, 1998). According to Chin's (1998) recommendations, a bootstrapping procedure using 1000 sub samples was performed to evaluate the statistical significance of each path coefficient. Table 10 shows hypothesized path coefficients along with their bootstrap values, 'T' values.

Table 10: path coefficients along with their bootstrap values, 'T' values

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	Standard Error (STERR)	T Statistics (|O/STERR|)
TVS Co-Brand -> TVS Brand Extension	0.228952	0.224059	0.254352	0.254352	0.900140
TVS Parent Brand -> TVS Brand Extension	-0.028775	-0.032384	0.217507	0.217507	0.132296
TVS Parent Brand -> TVS Co-Brand	0.782449	0.784635	0.050767	0.050767	15.412429

The relationship between Co-Brand TVS and Brand Extension TVS was insignificant with β = 0.228952 and t = 0.900140 (table value is 1.96 at $\propto$ 0.05 degree of freedom > 120) indicating that the Co-Brand of TVS has direct positive insignificant influence on the Brand Extension of TVS. The Brand Extension Image of TVS changes in direct proportion to Co-Brand of TVS with a coefficient of 0.228952. This clearly indicates that a 100 points change in Co-Brand Image of TVS will bring 22.8 points change in the Brand Extension Image of TVS.

The relationship between Parent Brand Kinetic and Brand Extension Kinetic was insignificant with β = -0.028775 and t = 0.132296 (table value is 1.96 at $\propto$ 0.05 degree of freedom > 120) indicating that the Parent Brand of TVS has direct

negative insignificant influence on the Brand Extension of TVS. The Brand Extension Image of TVS changes in direct proportion to Parent Brand Image of TVS with a coefficient of -0.028775. This clearly indicates that a 100 points change in Parent Brand Image of TVS will bring 0 points change in the Brand Extension Image of TVS. It means that the Parent Brand Image of TVS doesn't have the strong impact on Brand Extension Image of TVS

The relationship between Parent Brand TVS and Co-Brand TVS was significant with β = 0.782449 and t = 15.412429 (table value is 1.96 at $\propto$ 0.05 degree of freedom > 120) indicating that the Parent Brand of TVS has direct positive influence on the Co-Brand TVS. The Co-Brand Image of TVS changes in direct proportion to the Parent Brand Image of TVS with a coefficient of 0.782449. This clearly indicates that a 100 points change in Parent Brand Image of TVS will bring 78.2 points change in the Co-Brand Image of TVS.

Summary: Out of the three paths used to connect the measures in the structural model, one path was supporting the hypothesis that Parent Brand has a direct positive influence on the Co-Brand of TVS. This clearly indicates that Parent Brand image of TVS had an influence on Co-Brand of Image of TVS. However two path coefficients between Co-Brand of TVS and Brand Extension, Parent Brand TVS and Brand Extension of TVS don't support the hypothesis. So it clearly shows that the Co-Brand has a very little impact on Brand Extension of TVS and Parent Brand does not have an impact on Brand Extension of TVS. 4.8.3 Model evaluation

Contrary to CBSEM, PLS path modeling does not report any kind of fit indices like TFI (Tucker-Lewis Fit Indices), RMSEA (Root Mean Square Error Approximation) or CFI (Comparative Fit Indices) (Since PLS makes no distributional assumptions for parameter estimation). The evaluation of PLS model is therefore, based on prediction-oriented measures that are non-parametric (Chin, 1998). The PLS structural model is mainly evaluated by Goodness-of-Fit (GoF) (Tenenhaus et al., 2005), and by using the Stone-Geiser Q-square test for predictive relevance (Stone, 1974; and Geiser, 1975).

Table 11: Showing Model Evaluation

Block	R^2	Communality	H^2	Redundancy	F^2
Parent Brand TVS		0.607362	-0.148283		
Brand Extension TVS	0.042937	0.704197	-0.32147	0.011700	-0.004175
Co-Brand TVS	0.612226	0.556946	-0.048012	0.428732	-0.02117
Average	0.327582	0.622835			
GoF = $\sqrt{}$ average R^2 × average communality = $\sqrt{0.2040292}$= 0.4516959					
(Tenenhaus et al., 2005)					
Note: H^2 = cv-communality index, F^2 = cv-Redundancy index					

Goodness-of-Fit (GoF) (Tenenhaus et al., 2005) was employed to judge the overall fit of the model, Gof, which is the geometric mean of the average communality and the average R^2, represents an index for validating the PLS model globally, as

looking for a compromise between the performance of the measurement and the structural model, respectively. For this model the GoF index was 0.4516959 (See table 11 above).

Further the quality of path model can also be evaluated by calculating the Q - square statistic. The Q square statistic measures the predictive relevance of the model by reproducing the observed values by the model itself. A Q square greater than 0 means the model has predictive relevance; whereas Q-square statistic less than zero means that the modal lacks predictive relevance (Fornell and Cha, 1994). In PLS two kinds of Q- square statistics are estimated by using Blindfold method of calculations.

They are cross- validated communality (H^2) and cross- validated redundancy (F^2). Blindfolding procedure ignores a part of the data for a particular block during parameter estimation. The ignored data part is then estimated using the estimated parameters and the procedure is repeated until every data point has been ignored and estimated. Omission and estimation of data point depends on the chosen omission distance G=25 (Chin, 1998).

The cross validated communality H^2 measures the capacity of the model to predict the Manifest Variables (MV's) directly from their latent Variables (LV's) by cross validation. It uses only the measurement model. The prediction of an MV of an endogenous block is carried out by using the MV's of the same block. The cross-validated redundancy F^2 measures the capacity of the path model to predict the endogenous MV's indirectly from a prediction of their own LV using the related structural relation, by cross-validation (Tenenhaus et al., 2005). For this data set blindfolding was carried out by using smart PLS with omission distance G = 25 and the results are shown in Figure 8.

Results reveal that for this model all the blocks had high values of H^2, ranging from -0.32147 to -0.048012and F^2 ranging from -0.02117 to -0.004175. All H^2 and F^2 values were positive (above threshold level), meaning that the model had acceptable predictive relevance.

Blind folding – Path diagram

The study was carried out to find the effect of co-branding on brand extension. The study was carried out on two brands TVS and Kinetic. First of all item to total correlation and reliability tests were applied on the questionnaire to check the internal consistency and reliability of the questionnaire. These tests resulted in very high consistency and very high reliability showing that the questionnaire was perfect to carry out the study. Then factor analysis was applied. The factor analysis resulted in seven underlying factors. Then Z- test was applied on both the brands to find out whether there is a significant difference between the co-branding and brand extension of both the two brands and it was found that there is no significance difference between the co-branding and brand extension of both the brands. Then regression was applied on TVS and Kinetic. The test for TVS

resulted in the fact there is a close relationship between the co-brand of TVS i.e. TVS Suzuki and brand extension i.e. TVS Victor but there is no relation of the parent brand i.e. TVS with the co-brand i.e. TVS Suzuki and brand extension i.e. TVS Victor. On the other hand the regression tests for Kinetic resulted in the fact that there is no relation between the co-brand of Kinetic i.e. Kinetic Honda and Kinetic Zing and also there is no relation of the parent brand Kinetic with the co-brand of i.e. Kinetic Honda and brand extension i.e. Kinetic Zing .

Figure 8: Blind Folding Path Diagram
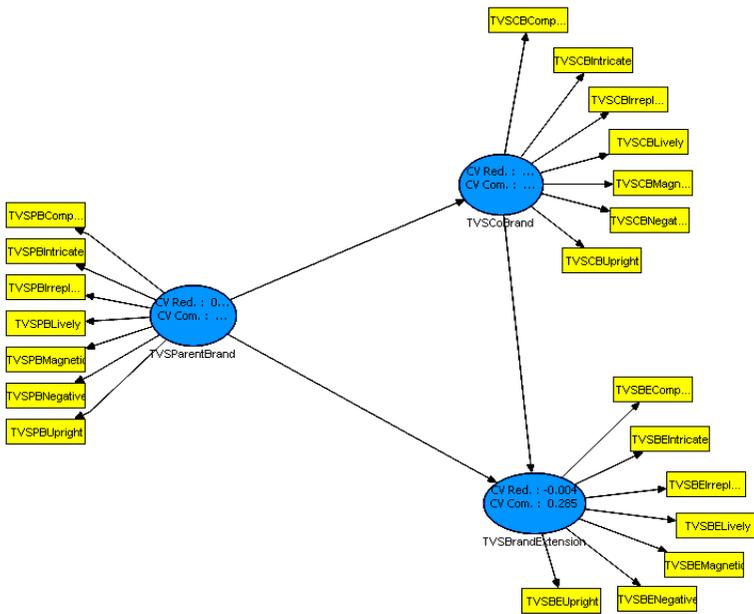
CONCLUSION

Multiple regression was also applied on both the brands which resulted in the fact that there is a close relationship between the co-brand of TVS i.e. TVS Suzuki and brand extension i.e. TVS Victor but there is no relation of the parent brand i.e. TVS with the co-brand i.e. TVS Suzuki and brand extension i.e. TVS Victor. On the other hand the multiple regression tests for Kinetic resulted in the fact that there is no relation between the co-brand of Kinetic i.e. Kinetic Honda and Kinetic Zing and also there is no relation of the parent brand Kinetic with the co-brand of i.e. Kinetic Honda and brand extension i.e. Kinetic Zing The result of regression shows that if the co-brand of a brand is popular then there is a significant effect of co-branding on brand extension and if the co-brand is not popular there is insignificant effect of co-branding on brand extension.

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