

# The Gender Dissimilitude Influence on Customer Based Brand Equity (CBBE)

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## **Abstract**

### **Purpose of Research**

The role of gender has a challenging effect on consumer behavior which has an immense influence on the customer based brand equity (CBBE) of a brand. This study shows the difference in the behavior of female (XX) and male (XY) consumers in influencing CBBE to help the managers in better strategy formulation.

### **Methodology**

This study is exploratory and causal in nature with a primary survey of respondents belonging to two genders. It investigates the moderating effect of gender as a demographic factor on CBBE using structural equation modeling. Data has been collected both from primary as well as secondary sources. The sampling technique used is quota in nature with a sample size of 655.

### **Major Results**

The research results revealed that gender acts as a moderator in some cases. There is a difference in the causal effect of the antecedents on CBBE and CBBE on its consequences for genders.

### **Implications**

The brand managers can benefit immensely from the results. The mobile phones can be designed and positioned according to the results. In certain cases, both genders had an equal opinion about the importance of certain variables. These findings can be well implemented in formulating strategies for the brand.

### **Originality/value**

This paper studies the gap in the literature on gender as a moderator in influencing the effect of the antecedents and consequences of CBBE. A developed model of CBBE is tested with data collected from both the genders. The difference in the effect of the antecedents on CBBE and CBBE on its consequences is shown. Moreover the differences between the responses and choices of the genders if any have also been found out.

**Keywords:** CBBE, Brand Name, Brand Loyalty, Gender, SEM.

## **Introduction**

The most common demographic variable, used in almost each and every study, yet never fully used in researches apart from the general

mention in the respondent profile is gender. Gender refers to the differentiating physical attributes between men and women (Anonymous, 2006). Recent research suggests that gender identity is not only a psychological construct but also a social construct. Nevertheless, within social sciences, it is more of a social construction rather than a limited biological definition. This includes several social constructs entailing culture-bound roles, behaviors, and conventions, and relationships between the male and female sexes (Anonymous, 2006). Gender identity is conceptualized as a assorted construct of the biological, socio-psychological and cognitive dimensions of gender (Le, 2008). There has been a lot of discussion on the similarities and discrepancies between sex and gender. Basically, sex is biological and gender refers to the physiological features associated with sex. A man (male) or woman (female) is defined by sex (Deaux, 1985) but culture defines gender of an individual as masculine or feminine (Lerner, 1986; Palan, 2001). Generally, we treat masculinity as male and feminism as female.

For a brand, its equity matters a lot. Equity is the value of a brand which is the most important element of a brand. It has several antecedents as well as consequences. Brand equity has two perspectives- customer-based brand equity (CBBE) and financial based brand equity (FBBE). Customer-based brand equity is the equity obtained from the customers while financial based brand equity is from the financial shares (Mishra and Datta, 2011). Extant literature has several studies on brand equity but there is a dearth of research on customer-based brand equity along with its antecedents and consequences. Moreover, the constructed gender as a moderator in such kind of study is also lacking.

In this paper, the difference in the behavior of female (XX) and male (XY) consumers in influencing CBBE will be studied upon. Gender is taken as a moderator and its effect is studied upon. A self-developed model of the researcher which has already been tested in the previous study is chosen for the study. This will help the managerial community in better strategy formulation when it comes to gender and brand relationship.

### Review of Literature

Gender has strong implications on consumers' cognitive thinking, emotional feelings, and purchase behaviors (Ye, 2008). Previous studies indicate that females had different traits than men. The general feminine trait included caring for others, compromising, indulging in negotiations and conflict resolution as well as relationship building. Men were ascribed with traits, such as advancement, success, and leadership (Hofstede, 1980). Further they have a stronger tendency towards materialism, and are generally more enthralled in external validation, whereas women are not much inclined towards name and fame (O'Cass and McEwen, 2004). Masculinity, as denoted by the

psychological trait instrumentality, is presented by personality traits such as competitiveness, activeness, and independence, while femininity is described with other personality traits such as emotionality, sensitivity, and expressiveness (Le, 2008). The past notions of women are fast being replaced. Women are involved in management and business, to the point where it is fashionable to study them (Eagly and Johnson, 1990). There are six women at the helm of Fortune 500 corporations (Jones, 2003). They are also becoming a market force to reckon with. MYTHs or Mommy with Traveling Husband category is estimated to be over 3 million consumers in 2005 in the USA, creating demand for late night deliveries, Mommy entertainment, and drive through salads (Potvin, 2006). Their spending is also strong, and women have experienced a 14% increase in their real income levels as compared to 4% for men (Francese, 2006).

There are various studies that have looked at differences between men and women in areas such as coupon use (Harmon and Hill, 2003), web advertising (Wolin and Korgaonkar, 2003), and service quality (Snipes, 2006). Gender differences have been found in consumer behavior for interior design (Aiken, 1963), cigarette (Vitz and Johnston, 1965), leisure activities (Gentry and Doering, 1977), Christmas shopping (Fisher and Arnold, 1990), beer and jeans (Worth et al., 1992) and hair spray products (Morris and Cundiff, 1971). Other interesting findings include an opinion that women are far more influenced by experts and expert advertising than their male counterparts (Aronson, 1972) women to be more fashion conscious, as well as bigger spenders than men (Goldsmith et al., 1993), and women have been shown to score higher on opinion leadership and fashion innovativeness than men (Stith and Goldsmith, 1989).

Male are found to be more rational than female whose effect is also found in their buying behavior (Mishra, 2014). This research studies the difference in buying behavior of male and female consumers. Gender has been chosen as a non-metric moderating construct whose effect on the endogenous constructs have been studied. Moderator is a third construct which changes the relationship between two related constructs (Hair et al, 2009). A neutral product has been chosen for the study to find out if there exists a difference in the behavior of male and female. To prove the differences a conceptual model has been chosen by the researcher which shows the causal effect of the antecedents of customer-based brand equity and the consequences of the same. This model has been adopted from a previous study of the researcher (Mishra, 2012).

### Customer-based brand equity (CBBE) and its antecedents

Customer-based brand equity (CBBE) is defined as "the differential effect that brand knowledge has on consumer

response to marketing activity with respect to that brand” (Keller 1993, p. 15, 2004). Customer-based is the cognitive and behavioral brand equity as opined and perceived by the individual consumer obtained through a consumer survey (Jung and Sung, 2008). CBBE is built by brand name (BN), brand awareness (BA), brand communication (BC), brand association (BAS), brand personality (BP), brand image (BI), perceived brand quality (PBQ) and brand loyalty (BL) which have been confirmed as the antecedents of CBBE by Mishra and Datta, 2011. The brand name provides recognition and the essence of the product to its customers and marketers. Choosing a proper brand name is the centerpiece of marketing programs and strategy formulations. A good brand name can do wonders for the company by enhancing the value of the brand, whereas, a poor brand name can demolish the brand and its company (Mishra and Datta, 2011a). CBBE has been defined as the incremental value of a product due to the brand name. (Chen and Tseng, 2010) The brand name has a positive effect on CBBE though not very significant (Mishra and Datta, 2011a).

Studies have said that brand communication plays a major role in building customer-based brand equity (Walgren et al., 1995) while others have found that it negatively influences the CBBE of a brand (Mishra and Datta, 2011a). Brand communication has a direct proportion to customer based brand equity (Ghose, 2009). Better brand communication enhances customer based brand equity of a brand. “Brand awareness is the ability of the potential buyer to recognize or recall that a brand is a part of a certain product category” (Aaker, 1991, 1996). Brand awareness is appraised by the techniques of brand recall and brand recognition (Keller, 1993, 2004). It relates to creating awareness about a brand in the minds of the customers (Davis, 1995). Research has confirmed a positive effect of brand awareness on CBBE (Aaker, 1991, 1996; Keller, 1993, 2004; Srinivasan et al., 2005; Ullah et al., 2011, Mishra and Datta, 2011).

The first thought that comes to the customer’s mind about a brand is called brand association (Mishra and Datta, 2011a). Brand association contributes to brand equity by creating an attribute based component of brand equity and a non-attribute based component of brand equity, and provide evidence supporting their conceptualization (Srinivasan et al., 2005). Customer-based brand equity is the result of favorable, strong, and unique brand associations in memory of consumers (Wang et al., 2008). CBBE can be defined in terms of the differential response to marketing actions that upshot from the strong, favorable and unique brand associations (Hoeffler and Keller, 2003). It has been investigated that brand association has a positive and significant effect on CBBE (Heidarzadeh and Shavandi, 2011; Mishra and Datta, 2011a). Brand personality is a traditional measure of CBBE. Brand personality was built

by the manipulation of brand name, signs, symbols, logos, imagery, music, type of endorsers, layout or use of humor and provocation. Brand personality has been found to have a positive and significant effect on customer-based brand equity as well as on brand image (Mishra and Datta, 2012). Brand image (BI) can be defined as the perception about a brand as reflected by the cluster of associations that consumers connect to the brand name in memory (Rio et al., 2001). Enhancing brand image enhances the customer based equity of a brand (Mishra and Datta, 2011a). Perceived brand quality (PBQ) is defined as the consumer’s judgment about a brand’s overall excellence or superiority with respect to its intended purpose, relative to alternatives (Zeithaml, 1988; Aaker and Jacobson, 1994). It is the brand which is perceived by the customer and not the product on a psychological basis. It has been found that perceived brand quality is a significant antecedent of customer based brand equity (Mishra and Datta, 2012). Brand loyalty is appraised with the customer’s willingness to repeatedly purchase the brand irrespective of the changes in the price. The customer is further ready to pay a price premium for the brand of his/her choice and refers the brand to others if satisfied (Motameni and Shahrokhi, 1998). It is an established antecedent of CBBE and has a positive effect on it (Mishra and Datta, 2012).

Brand equity has been proved to have a huge contribution to brand preference. Brand preference (BPR) is the recognition and choice of a brand over others resulting sometimes in willingness to pay a price premium (Tong and Hawley, 2009). Customer-based brand equity has been thought of as a prerequisite for brand preference, which in turn affects consumers’ intention to purchase (Tolba and Hassan, 2009). Customer-based Brand equity enhances the brand preference of the brand (Mishra and Datta, 2011a). some studies have shown that preference of a brand leads to the intention of purchasing the brand over others (Wang et al., 2008) whereas others have proved that brand preference does not have a positive effect on intention to purchase (Mishra and Datta, 2011a). CBBE involves consumers’ perception and attitude towards a brand which has an effect on the purchase intention (PI) of the consumer (Keller, 2003). Customer-based Brand equity has an increasing effect on the purchase intentions of the customers (Mishra and Datta, 2011a).

### **XX and XY effect on CBBE**

Males and females are different in processing brand information (Kempf et al. 1997), forming brand attitudes (Kasper 1988), and building brand relationships (Putrevu 2004). Though females may have stronger responses toward brands, variations among male and females are likely. This study analyses the differential effect of both genders on the antecedents and consequences of customer-based brand equity and customer based brand equity itself. It has been found from literature that gender is associated with brand

name response. Males respond more favorably to brand names with back vowels than females whereas females respond more favorably to brand names with front vowels (Klink, 2008). Brand communication has two main challenges- to draw attention towards the brand and to build the brand profile. It can influence people to switch their attitude regarding things, even things that they feel strongly about. (Cohan, 2003) Consumers need to be reminded constantly and it is important that the brand is consistent in its communication (Berntson, 2006). Women respond differently to advertisements than men. Catterall et al (2000) and Myers-Levy and Sternthal (1991) claim that women are more likely to elaborate on a message and make greater use of the cues in an advertisement. They also found that women's processing often involved greater sensitivity to details in the message. Women dig deeper into the message and use an effortful strategy to search for inconsistency and to examine all the relevant information. They are therefore more likely to have increased compassion and sensitivity to the details of the message. (Meyers-Levy and Maheswaran, 1991) Women were also found to be more focused on the body language in printed ads (Catterall et al, 2000). Extant literature has found an effect of gender on brand awareness. Significant differences have been found between males and females regarding awareness of food related private label brands. Females have a higher level of brand awareness than males (Kalogiani, 2002). Brand loyalty differentiates between the buying behavior of males and females (Kasper, 1998). Women were more loyal if the service performance was acceptable whereas men were more loyal based on product performance (Moutinho and Goode, 1995). Research has proved that males tend to be more brand loyal than female in case of the automobile (Moutinho and Goode, 1995). Males are more fluctuating in their purchase intentions than females (Coughlin & O'Connor 1985).

Based on the above literature and the gaps found the following hypotheses have been proposed which are to be tested in the next sections.

H1: A difference in the effect of Brand Name on CBBE is found in the case of male and female.

H2: A difference in the effect of Brand Communication on CBBE is found in the case of male and female.

H3: A difference in the effect of Brand Communication on Brand Awareness is found in the case of male and female.

H4: A difference in the effect of Brand Communication on Brand Association is found in the case of male and female.

H5: A difference in the effect of Brand Communication on Brand Personality is found in the case of male and female.

H6: A difference in the effect of Brand Communication on Brand Image is found in the case of male and female.

H7: A difference in the effect of Brand Communication on Perceived Brand Quality is found in the case of male and female.

H8: A difference in the effect of Brand Communication on Brand Loyalty is found in the case of male and female.

H9: A difference in the effect of Brand Awareness on CBBE is found in the case of male and female.

H10: A difference in the effect of Brand Association on CBBE is found in the case of male and female.

H11: A difference in the effect of Brand Association on Brand Image is found in the case of male and female.

H12: A difference in the effect of Brand Image on CBBE is found in the case of male and female.

H13: A difference in the effect of Brand Personality on CBBE is found in the case of male and female.

H14: A difference in the effect of Brand Personality on Brand Image is found in the case of male and female.

H15: A difference in the effect of Perceived Brand Quality on CBBE is found in the case of male and female.

H16: A difference in the effect of Brand Loyalty on CBBE is found in the case of male and female.

H17: A difference in the effect of CBBE on Brand Preference is found in the case of male and female.

H18: A difference in the effect of CBBE on Purchase Intention is found in the case of male and female.

H19: A difference in the effect of Brand Preference on Purchase Intention is found in the case of male and female.

## Methodology

The research design used in this research is exploratory followed by causal. Exploratory research includes the survey of secondary data which is the literature review and expert surveys. Causal research is used to obtain cause and effect relationships (Malhotra, 2005). The independent variables are the cause and the dependent variables are the effects. Independent variables are variables or alternatives whose effects are measured and compared. Dependent variables are the variables that measure the effect of the independent variable on the test units or the respondents. This leads to the adoption of the conceptual model which is to be tested. In this research, the constructs brand name and brand communication are independent variables whereas purchase intention is the only dependent variable. The other variables i.e., brand association, brand awareness, brand personality, brand image, perceived brand quality, brand loyalty, customer-based brand equity, brand preference and purchase intention were all treated as both independent and dependent variables. This was because these variables or



constructs have a causal effect on other constructs e.g., brand image was an independent variable as it has a causal effect on customer-based brand equity but also a dependent variable as brand name, brand communication, brand association and brand personality has a causal effect on brand image. The sampling unit chosen for the research were respondents above the age of 18 who possessed or/and have bought Samsung smartphones belonging to all kinds of profession and income. Samsung as a brand was chosen for the research as it had the highest recall in case of smartphones when queried to 200 students of a university. Respondents possessing Samsung smartphones within the range of Rs.5000 to Rs.25000 were chosen for the survey. This range was considered by surveying 10 major mobile stores of Cuttack which was the area chosen for the survey. The sample size taken for the research was 655 consisting of 325 females and 330 males. Factors more than six require a sample size of more than 500 (Hair et al., 2009). Since there were eleven factors in the study which was more than six, more than 500 samples were taken. Quota sampling technique, a non-probability sampling technique was chosen for the research. Quota sampling was chosen over other non-probability sampling techniques as the sample had to be controlled for certain characteristics like smart mobile phone users and the lower age limit as 18 years. Anybody possessing a Samsung smartphone within the

mentioned range was taken as respondent. The control factor of quota selection was individuals of both genders above the age of 18 those who possessed or have bought Samsung smartphones. The lower age limit was 18 as adults are mature and could give a proper reply to the questions. The majority of the sample units were students pursuing undergraduate and post graduate in Engineering and Management along with others. This was because these students make optimum use of a mobile phone handset and have good knowledge about mobile phones. A structured questionnaire of 47 questions was designed for the survey. The scale used for the questionnaire design was 5-point Likert scale. Structural equation modeling using AMOS was used for the analysis of the data collected.

### Findings and Discussion

The data collected was checked for missing values and rectified. Further, the modified data was put to reliability and validity tests.

#### Reliability analysis

Reliability of the questionnaire was checked by Cronbach's alpha. As per thumb rule, the alpha value should be more than 0.700 ( $\alpha > 0.7$  is good) for all factors (George and Mallery, 2007) but may decrease to 0.60 in exploratory research (Robinson et al., 1991).

Table 1: Cronbach's Alpha in Reliability Test

Constructs	Alpha value female (0.732)	Alpha value male (0.854)
BN	0.597	0.807
BC	0.581	0.667
BAS	0.781	0.789
BA	0.577	0.730
BP	0.870	0.841
BI	0.786	0.921
PBQ	0.320	0.413
BL	0.815	0.844
CBBE	0.888	0.876
BPR	0.635	0.709
PI	0.633	0.653

The alpha value was 0.732 for females and 0.854 for the male which indicated that the means and variances in the original scales do not differ much and thus standardization does not make a great difference in the alpha values (George and Mallery, 2007). The highest alpha value for the female was 0.888 for CBBE and 0.921 for BI in the case of males.

#### Validity Analysis

Validity is the extent to which a scale or set of measures accurately represents the concept of interest (Hair et al., 2009). Validity analysis was performed as convergent,

discriminant (Chen and Tseng, 2010) and nomological validity.

#### Convergent Validity

Convergent validity was measured by item-to-item correlation and item-to-total correlation (Hair et al., 2009). Cohen (1988), Sivakumar (2008) and Mishra and Datta (2011) described correlation (r) value of 0.10 to 0.29 as small correlation, values between 0.30 and 0.49 are medium and values from 0.50 to 1.00 indicate large correlation among variables.

**Table 2: Convergent validity**

Construct	No. of items	Item-to-item correlation range		Item-to-total correlation range	
		Female	Male	Female	Male
BN	3	0.24-0.48	0.47-0.67	0.32-0.52	0.58-0.75
BC	3	0.32-0.41	0.36-0.50	0.41-0.48	0.46-0.53
BAS	9	0.29-0.66	0.20-0.72	0.37-0.56	0.39-0.58
BA	5	0.21-0.28	0.23-0.45	0.31-0.37	0.42-0.60
BP	4	0.58-0.71	0.52-0.68	0.71-0.77	0.66-0.70
BI	4	0.31-0.78	0.38-0.76	0.44-0.76	0.32-0.74
PBQ	6	0.18-0.43	0.18-0.42	0.28-0.48	0.17-0.33
BL	5	0.36-0.66	0.39-0.63	0.56-0.72	0.54-0.72
CBBE	8	0.23-0.54	0.19-0.52	0.28-0.58	0.20-0.59
BPR	4	0.32-0.52	0.19-0.75	0.38-0.56	0.16-0.72
PI	3	0.28-0.43	0.31-0.54	0.39-0.51	0.43-0.59

The correlation values of all the constructs ranged between the above acceptable values (0.16-0.78) for both genders. The results displayed in Table 1 reveals that the lower limit of item-to-item correlation of many scale items comes under small correlation with upper limits indicating medium to large correlations in cases, female (0.21-0.78) and male (0.19-0.75). In the case of item-to-total correlations, the lower limit values fall under low-level correlations whereas upper limit values exceed thresholds for large correlation. Female values ranged between 0.28-0.77 and the range for the male was 0.17-0.75. Based on these results, it can be concluded that the scales exhibited moderate to high level of convergent validity.

### Discriminant Validity

Discriminant validity was tested by comparing the shared variance among indicators of a construct (i.e. AVE) with the variance shared between constructs. The test for discriminant validity is met when average variance extracted, AVE for the construct is greater than its squared correlations with other constructs (Davis et al., 2009). VE estimates for two factors should be greater than the square of the correlation between two factors to provide the evidence of discriminant validity (Hair et al., 2009).

**Table 3: Discriminant Validity**

Female Male	AVE	BN	BC	BAS	BP	BA	BI	PBQ	BL	BPR	PI	CBBE
BN	0.682	1.000										
BC	0.632	0.013	1.000									
BAS	0.597	0.009	0.378	1.000								
BP	0.683	0.005	0.201	0.368	1.000							
BA	0.571	0.225	0.296	0.245	0.197	1.000						
BI	0.786	0.159	0.097	0.312	0.268	.014	1.000					
PBQ	0.564	0.088	0.066	0.276	.001	0.298	0.181	1.000				
BL	0.641	0.137	0.006	0.154	0.109	0.188	0.003	0.173	1.000			
BPR	0.682	0.581	0.001	0.063	0.033	0.119	0.044	0.090	0.177	1.000		
PI	0.602	0.202	0.149	0.257	0.061	0.006	0.057	0.334	0.053	0.001	1.000	
CBBE	0.736	.005	0.435	0.578	0.235	0.461	0.332	0.001	0.354	0.443	0.398	1.000

The constructs are discriminant as the average variance extracted (AVE) > Squared correlations between constructs (Hair et al, 2009, Mishra and Datta, 2011). If inter-construct correlations are not high ( $r < 0.85$ ), it demonstrates discriminant validity of constructs (Baagozzi & Yi, 1988;

Kline, 1998). The highest value of correlation was  $r = 0.58$  between BAS and CBBE. Since none of the correlations between the constructs were more than 0.85 they were all discriminant from each other.

### Nomological Validity

Nomological validity refers to the degree that the summated scale makes accurate predictions of other concepts in a theoretically based model. Nomological validity is tested by

examining whether the correlations among the constructs in a measurement theory make sense (Hair et al., 2009). The results support the prediction that these constructs are positively related to one another.

**Table 4: Nomological Validity**

	BN	BC	BAS	BP	BA	BI	PBQ	BL	BPR	PI	CBBE
BN	1.000										
BC	0.114	1.000									
BAS	0.094	0.614	1.000								
BP	0.070	0.448	0.606	1.000							
BA	0.474	0.544	0.494	0.443	1.000						
BI	0.398	0.311	0.558	0.517	.118	1.000					
PBQ	0.296	0.256	0.525	0.031	0.545	0.425	1.000				
BL	0.370	0.077	0.392	0.330	0.433	0.054	0.415	1.000			
BPR	0.762	0.031	0.250	0.181	0.344	0.209	0.300	0.420	1.000		
PI	0.449	0.386	0.506	0.246	0.077	0.238	0.577	0.230	0.031	1.000	
CBBE	.070	0.659	0.760	0.484	0.678	0.576	0.031	0.594	0.665	0.630	1.000

Table 4 shows a positive correlation between all the constructs with the least correlation between BP and PBQ, PI and BPR, PBQ and CBBE ( $r = 0.03$ ) and the maximum correlation between BPR and BN ( $r = 0.76$ ). The correlation between constructs is positive which proves the nomological validity (Hair et al, 2009, Mishra and Datta, 2011).

### Outliers

Outliers have been detected using Boxplot in SPSS and mahalanobis D 2 method in AMOS which has been suppressed further from the analysis.

### Collinearity Statistics

Collinearity is the expression of the relationship between two independent variables. The variables are said to exhibit collinearity if the correlation coefficient between them is 1 and lack collinearity if their correlation coefficient is 0 (Hair et al., 2009). Multicollinearity is the extent to which a variable can be explained by other variables in the analysis. It occurs when a single independent variable is highly correlated with a set of other independent variables. Since this research involved more than two variables multicollinearity has to be measured. In this research tolerance and variation inflation factor (VIF) have been used for testing multicollinearity among variables. Collinearity was measured by Tolerance and Variance Inflation Factor (VIF).

**Table 5: Tolerance and VIF values**

Tolerance VIF	BN	BC	BAS	BP	BA	BI	PBQ	BL	BPR	PI
BC	0.987 1.013									
BAS	0.991 1.009	0.622 1.607								
BP	0.995 1.005	0.799 1.251	0.632 1.582							
BA	0.775 1.290	0.704 1.420	0.755 1.324	0.803 1.245						
BI	0.841 1.189	0.903 1.107	0.688 1.453	0.732 1.366	.959 1.042					
PBQ	0.912 1.096	0.934 1.070	0.724 1.381	.999 1.001	0.702 1.424	0.819 1.221				
BL	0.863 1.158	0.994 1.006	0.846 1.182	0.891 1.122	0.812 1.231	0.997 1.003	0.827 1.209			
BPR	0.419 2.386	0.999 1.001	0.937 1.067	0.967 1.034	0.881 1.135	0.956 1.046	0.910 1.098	0.823 1.215		
PI	0.798 1.253	0.851 1.175	0.743 1.345	0.939 1.064	0.994 1.006	0.943 1.060	0.666 1.501	0.947 1.055	0.999 1.001	
CBBE	.995 1.005	0.565 1.769	0.422 2.369	0.765 1.307	0.539 1.855	0.668 1.497	0.999 1.001	0.646 1.547	0.557 1.795	0.602 1.661

The tolerance showed a high value near 1 indicating all variables independent of each other (George and Mallery, 2007; Mishra, 2012). The VIF values were less than 4 showing less collinearity (Schumaker, 2008; Mishra, 2012).

### Validity of the Measurement Model

With the measurement model specified, sufficient data collected and the key decisions such as the estimation techniques made, the model is tested for its validity by SEM. The validity of the model depends on the goodness-of-fit for

the measurement model. Goodness-of-fit (GOF) indicates how well the specified model reproduces the covariance matrix among the indicator items i.e the similarity of the observed and estimated covariance matrices (Hair et al., 2009). The GOF measures of the model and the values extracted by confirmatory factor analysis using SEM are shown in Table 6. The optimal fit measures have also been shown to compare the difference (Hair et al., 2009; Gil et al., 2007).

**Table 6: Fit Measures**

	Optimal	Female	Male
<b>Global fit indexes</b>			
Chi-square $\chi^2$ (degrees of freedom)		1387.870 (511)	1917.581 (612)
p-value	<0.05	.000	.000
GFI	>0.8	0.812	0.815
RMSEA	0.05-0.08	0.071	0.067
ECVI	Minimum	4.536	4.439
NCP	Minimum	876.870	1305.581
<b>Incremental fit indexes</b>			
NFI	>0.9	0.702	0.775
CFI	>0.9	0.786	0.834
IFI	>0.9	0.788	0.835
AGFI	>0.8	0.781	0.787
<b>Parsimonious fit indexes</b>			
PNFI	Maximum	0.639	0.712
AIC	Minimum	1555.870	2089.991

Table 6 shows the fit indices of the final modified model of both the genders. The GFI of the final modified measurement model is 0.81 for both female and male which is >.8 and the RMSEA within the limits of 0.05-0.08. All other indexes are significant which shows a good fit of the model (Hair et al., 2009). The chi-square ( $\chi^2$ ) was 1387.8 for female and 1917.6 for the male. This large value was due to the large sample size and increasing number of variables in the model (Hair et al., 2009). The degrees of freedom (df) estimated the model parameters with a value of 511 and 612 respectively for females and males. The goodness-of-fit index (GFI) indicated a good fit of the data in the model as

GFI ranges from 0 to 1 with higher values being better (Hair et al., 2009). The adjusted GFI was 0.82 for the modified model in comparison to the proposed measurement model (0.76). The other fit measures like Normed fit index (NFI), Relative fit index (RFI), Incremental fit index (IFI) and Comparative fit index (CFI) were more than 0.7 which showed a good fit of the model with the collected data. The higher value of Parsimony adjusted NFI and Parsimony adjusted CFI indicates a better fit of the model. Root mean square error of approximation (RMSEA) was 0.071 for female and 0.067 for the male which shows a good fit of the model.

**Table 7: Differential Causal Relationship in Female and Male**

Causal Relationship	Path coefficient ( $\beta$ )		t value		P value		Hypothesis supported
	Female	Male	Female	Male	Female	Male	
BN→CBBE	0.454	0.007	***	***	***	***	Yes
BC→CBBE	0.530	0.735	0.730	9.233	0.465	0.000	Yes
BC→BA	0.623	0.774	-0.657	10.09	0.511	0.000	Yes
BC→BAS	-0.161	0.774	-0.723	0.550	0.469	0.583	Yes
BC→BP	-0.321	0.757	0.317	0.888	0.750	0.375	Yes
BC→BI	0.080	0.115	***	***	***	***	Yes
BC→PBQ	0.001	0.164	-1.535	11.524	0.125	0.000	Yes
BC→BL	-0.620	0.900	5.765	8.325	0.000	0.000	Yes



BA→CBBE	0.284	0.641	***	***	***	***	Yes
BAS→CBBE	0.545	0.206	***	***	***	***	Yes
BAS→BI	0.179	0.133	1.875	1.394	0.061	0.163	No
BI→CBBE	0.650	0.199	-2.462	2.069	0.014	0.039	Yes
BP→CBBE	0.165	0.075	***	***	***	***	Yes
BP→BI	0.012	0.128	0.133	0.534	0.894	0.593	Yes
PBQ→CBBE	0.084	-0.030	0.003	-7.493	0.998	0.000	Yes
BL→CBBE	0.754	0.525	2.441	7.126	0.015	0.000	Yes
CBBE→BPR	0.816	0.425	***	***	***	***	Yes
CBBE→PI	0.740	0.142	1.113	2.685	0.266	0.007	Yes
BPR→PI	0.987	-0.177	0.660	-1.407	0.509	0.159	Yes

The path coefficients between the constructs in table 7 and their t and p values show their significance. The path coefficient between BN -- CBBE is more significant in the case of females ( $\beta = 0.454$ ) in comparison to males ( $\beta = 0.007$ ). This indicates that the brand name 'Samsung' has high significance for females and matters a lot in their buying decisions. Similarly in case of BC -- CBBE the higher path coefficient in case of males ( $\beta = 0.735$ ),  $p < 0.05$  indicates that the communication of brand Samsung has a greater significant effect in building brand equity than in the case of females ( $\beta = 0.530$ ),  $p < 0.05$ . The effect of BC--BA is more or less similar in both the cases with females having ( $\beta = 0.623$ ) and males ( $\beta = 0.774$ ). This shows that communication of a brand is important for creating brand awareness. For BC--BAS relationship difference between females ( $\beta = -0.161$ ) and males ( $\beta = 0.774$ ) is highly significant which reveals that communication has a negative causal effect on the brand association of Samsung but for males, it has a highly positive effect. For the causal effect of BC--BP females ( $\beta = -0.321$ ) have a very insignificant effect while males highly significant effect ( $\beta = 0.757$ ). This denotes a strong effect of communication in different forms showing the personality of a brand. The effects of BC--PBQ in the case of both females ( $\beta = 0.001$ ) and males ( $\beta = 0.164$ ) were not very significant which was similar to the case of BC--BI for both genders. In the case of the causal effect of BC--BL the contribution of communication in building brand loyalty was quite insignificant in case of females ( $\beta = -0.620$ ) whereas highly significant in case of males ( $\beta = 0.900$ ). BA--CBBE was more for males ( $\beta = 0.641$ ) than females ( $\beta = 0.284$ ) which proved that men were more interested in mobile technology and innovations than women. The causal effect of BAS--CBBE was more significant in the case of females ( $\beta = 0.545$ ) than males ( $\beta = 0.206$ ) showing that women associated themselves well with the brand. The hypothesis H11 on the relationship of BAS--BI was not supported as the difference between the coefficients and t value was very less showing insignificant difference between male and female responses. The effect of BI--CBBE was highly significant in the case of females ( $\beta = 0.650$ ) over their counterparts ( $\beta = 0.199$ ) showing a positive and prominent image of the brand Samsung in the minds of female customers. BP--CBBE and

BP--BI effect was not very significant for both the genders but had a significant difference between them supporting H13 and H14. The effect of PBQ--CBBE was positive for female and negative for male showing a great difference between the values. BL--CBBE was more for females ( $\beta = 0.754$ ) than males ( $\beta = 0.525$ ) showing a significant difference. Females would recommend and buy the brand more than males. Finally the effect of CBBE--BPR, CBBE--PI and BPR--PI was more in females ( $\beta = 0.816$ ,  $\beta = 0.740$ ,  $\beta = 0.987$ ) than males ( $\beta = 0.425$ ,  $\beta = 0.142$ ,  $\beta = -0.177$ ) showing that in case of females the brand equity played a major role in their brand preference and purchase intention than males.

### Managerial Implications

A significant difference was found between the genders in almost all relationships. For brand name female had more liking towards the name and remembered it well. But in the case of brand communication and brand awareness males had an edge over their counterparts. This is because males are more tech savvy than females and the phone was smartphone. The functional appeal of the advertisements worked well for them. Females took over males in the case of brand association and brand image. These are more of psychological and emotional aspects and women being more emotional had a better score. In the case of brand personality, it was a mixed affair showing confusion in the minds of the respondents. The managers should clearly mention the personality of the brand. The brand equity of Samsung greatly influenced the preference of the brand and the intention to buy in case of females showing that the brand value matters more for women than men. Managers can keep all these in their minds while formulating branding strategies for gender specific products. In this case of mobile phone which is neutral or unisex in nature, managers can differentiate between genders based on colour, designs and other features and accessories associated with the phone like the case or the cover and stickers.

### Concluding remarks

Customer-based brand equity is greatly important for a company as it gives the direct feedback of the customers regarding the brand. The antecedents and consequences discussed above provide the causal effect on CBBE. The

moderating effect of gender has been proved by the hypotheses proposed and tested. This study further concludes that in the case of a neutral product like mobile phone gender plays a differentiating role. Gender identity should be manifested in brand relationship management, and brand perception issues, including brand attitude, brand association, and brand relationship, should all be understood to provide diagnostics of brand potentials to brand managers.

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