# Dimensions of Customer-Based Brand Equity in Gold Industry

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## Abstract

***Purpose -*** *Explore dimensions of customer-based brand equity in gold industry and its relationships.*

***Design/methodology/approach –*** *The techniques of focus-group and direct-interview are employed to explore, adjust scales and collect data. A sample of 200 customers of SJC gold is selected for the research. The scales are evaluated by the analyses of Cronbach's alpha, EFA and CFA. The hypotheses are verified by SEM, checked by the competitive model and Bootstrap method.*

***Findings -*** *Brand equity is measured by brand awareness, perceived quality, brand trust and brand loyalty; There are positive relationships between brand awareness and other dimensions; perceived quality has positively effect on brand loyalty and trust while brand trust affects brand loyalty.*

***Research limitations –*** *Data is only collected in the southern region of Vietnam among customers of SJC gold. Hence, the authors recommend further tests in associated with other gold brands or regions to increase the theoretical model's generalizability proposed.*

***Practical implications –*** *Managers should recognize the differences between model of brand equity in gold industry and other industries to design reasonable strategies of communication for enhancing effectiveness of building gold brands. Some solutions are also suggested for government officials in order to develop gold market, such as building detail gold standards and management policies; encouraging and supporting companies in building gold brands; reducing barriers of gold market, especially for retailers.*

***Originality/value -*** *A major contribution is to explore dimensions of customer-based brand equity in gold industry and its relationships. Some scales, which are reliable, unidimensional and obtain convergent, discriminable and theoretical validity, are supplied.*

**Keyword:** Brand equity; Gold; Measurement model; Relationships of Dimensions; Vietnam.

**Article Classification:** Research paper

*Introduction*

Brand equity has recently been considered as a crucial issue, which has been researched by academicians. Yet none of the research has proposed a standardized definition of brand equity; for example, brand equity is defined "a set of brand assets and liabilities linked to a brand, its name and symbol, that adds to or subtract from the value provided by a product or service to a firm and/ or to the firm's customers" (Aaker, 1991, p. 15), or "the differential effect of brand knowledge on consumer response to the marketing of the brand" (Keller, 1993, p. 2), or "consumers' different response between a focal branded and an unbranded product when both have the same level of marketing stimuli and product attributes" (Yoo and Donthu, 2001, p. 1). Based on the fact presented, the concepts of brand equity comprise of many components or dimensions. In which, for instance, brand equity is measured by brand loyalty and brand associations (Shocker and Weitz, 1988); Brand loyalty, brand awareness, perceived quality, brand associations (Aaker, 1991); Brand strength (Srivastava and Shocker, 1991); Favorable impression, attitudinal disposition, behavioral predilection (Ranggaswamy *et al.,* 1993); Brand awareness and brand image (Keller, 1993); Performance, perceived value, social image, trustworthiness, commitment (Lassar *et al.,* 1995); Perceived quality, brand awareness, brand associations (Cobb-Walgren *et al.,* 1995); Brand performance and brand awareness (Prasad and Dev, 2000); Brand awareness and associations, perceived quality, brand loyalty (Yoo and Donthu, 2001); Perceived quality, brand awareness, brand associations, brand loyalty (Atilgan *et al.,* 2005); Perceived quality, brand awareness, brand image, brand loyalty (Kim and Kim, 2005; Villarejo-Ramos and Sanchez-Franco, 2005); Perceived quality, brand associations, brand loyalty, brand trust (Atilgan *et al.,* 2009);…

Two concepts are used to comprehend brand equity: Finance or investment concept and customer concept (Lassar *et al.,* 1995) in which customer concept (Cobb-Walgren *et al*., 1995; Yoo and Donthu, 2001) includes customer perception (i.e. brand awareness, brand associations, perceived quality) and customer behavior (i.e. brand loyalty, willingness to pay a high price). For example, brand equity positively affects future profit and long-term cash flow to business (Srivastara and Shocker, 1991), the willingness to pay for a high price by customers (Keller, 1993) or decision making of merge and acquisition (Mahajan *et al.,* 1994). It also impacts on stock price (Simon and Sullivan, 1993), competitive advantages (Bharadwaj *et al.,* 1993) and the success of marketing activities (Ambler, 1997). Besides, brand equity creates value for the company as well as for the customer (Aaker, 1991). Increasing brand equity makes higher profit from customer, improves the effectiveness of marketing communication and enhances opportunities for licensing (Keller, 1993). Thus, there are some other methods, besides the measurement method of customer-based brand equity. For example, there are some financial measures of brand equity based on stock prices (Simon and Sullivan, 1993) or potential value (Mahajan *et al.,* 1994), and customer behavior-based measures, such as purchase (Kamakura and Russell, 1993). However, the measure of customer-based brand equity can be better than the stock-based measure (Madhavaram *et al*., 2005). Which can be explained that when company has many brands, the measure of brand equity based on stocks prices becomes problematic (by many different prices); and customers' perception is also a signal that gives prior notice for behavioral activities to brand (Cobb-Walgren *et al*., 1995). Furthermore, stock price is also influenced by many factors in which there are the macro environtment's elements.

In short, although brand equity is researched by many academics, it is important to note that, firstly, brand equity comes with several definitions; secondly, scale of brand equity has not yet standardized; thirdly, brand equity can be measured by finance-based or customer-based concepts. Besides, many previous studies just focused on investigating dimensions of brand equity, there has not been many researches focusing on exploring dimensions' relationships yet. Furthermore, gold is a special goods traded to make profit and/or to keep as a high-valued property.

It is likely one of the most valued and interested properties for almost people in developing nations in general and in Vietnam in particular. Therefore, how the model of customer-based brand equity in gold industry is measured and its dimensions' relationships are issues which are interested by many academics and leaders. For these reasons, a research of customer-based brand equity in gold industry will contribute a more concise and holistic understanding of brand equity model and develop gold industry by increasing effectiveness of building brands of gold.

### Literature Review and Hypotheses

Although some scholars in Vietnam have studied brand equity, a handful of papers were published by academic journals, specifically, the study of brand equity in consumer goods industry done by Nguyen and Nguyen (2002). The result shows that the measurement model of customer-based brand equity in consumer goods industry consists of three components: brand awareness, perceived quality, brand passion. However, the finding is only verified in shampoo product industry and plus, data collected is limited in Northern Vietnam, thus its generalibility needs to be considered more. In the study of brand loyalty in emerging markets, despite Nguyen *et al.* (2011) found brand awareness and perceived quality as key antecedents of brand loyalty, a model of brand equity has not yet suggested. Another study of the impact of advertising and sales promotion on brand equity in beverage, Le (2013) indicates that the model of brand equity is measured by four components: brand awareness, brand associations, perceived quality, brand loyalty; in which the author points out that brand awareness positively influences brand associations while perceived quality positively affects brand loyalty. Le's findings further explain and support for previous findings researched by Aaker (1991), Yoo *et al.* (2000, 2001) or Villarejo-Ramos and Sanchez-Franco (2005). These findings have noticeably contributed to marketing theories. Nevertheless, this study that is done in Southern Vietnam can not be applied to other fields and places.

From these typical studies, the results indicate that the measurement model of brand equity in fast moving consumer goods (FMCG) is not unified although both beverage and shampoo belong to FMCG industry (Deliya, 2012). This result is also suitable for the real condition because there has not yet come up with a more standardized definition of model of brand equity. Therefore, this research uses the model of brand equity of Aaker (1991), which is measured by four components: brand awareness, brand associations, perceived quality, brand loyalty. This famous and popular model is commonly applied by many academics. Moreover, this model's brand association dimension also describes the brand image component, which is one of two components of brand equity that Keller (1993) proposes. This is supported by Aaker's (1991, p. 109) definitions of brand association as "*anything linked in memory to a brand*" and brand image as "*a set of brand associations, usually in some meaningful ways*"; besides, Keller (1993, p. 3) proposes brand image as "*perceptions about a brand as reflected by the brand associations held in consumer memory*", and the brand association is one of the brand image scale's components.

Moreover, Aaker's (1991, 1996) scales of dimensions of brand equity are built by other researchers in markets which are different from gold; for instance, they are built by Yoo *et al.* (2000, 2001) in athletic shoes, color televisions, and film industries; or built by Villarejo-Ramos and Sanchez-Franco (2005) in washing machine market. It is important to note that gold is a special goods, which is not only bought for trading but also kept as property. Besides, customers need to have a proper understanding of gold, then they can associate, perceive and evaluate it in order to increase their trust upon purchasing. Even after purchasing gold, the possibility of customers to continue to invest and/or buy gold depends on their needs, impulse, demand and satisfactory. Therefore, brand trust may also be a component of the measurement model of brand equity in gold industry. This component is also one  dimension of the model of brand equity that Atilgan *et al.* (2009) proposes.

Therefore, the model of brand equity in gold industry also consists of brand awareness, brand associations, perceived quality, brand trust, brand loyalty.

Although brand awareness and brand associations are separated in theory, they are measured by one scale in real (Yoo *et al*., 2000, 2001). Hence, in this research, they are grouped as one component named "brand awareness and associations". From that, dimensions of brand equity and some hypotheses are described as below:

## Brand Awareness and Associations

Brand awareness is defined as "the ability for a buyer to recognize or recall that a brand is a member of a certain product category" (Aaker, 1991, p. 61) or "the strength of the brand node or trace in memory, as reflected by consumers' ability to identify the brand under different conditions" (Rossiter and Percy, 1987; Keller, 1993). Thus, brand awareness consists of both brand recognition and recall. This is an important component of brand equity because it can be an antecedent of other components. Moreover, according to Aaker (1991, p. 109), brand association is defined as "anything linked in memory to a brand". When customers know or recall a brand, then they have associations of that brand. Plus, they will have attitude and behavioral actions to that brand.

## Perceived Quality

This construct is defined as "the consumer's judgment about a product's overall excellence or superiority" (Zeithaml, 1988, p. 3). Therefore, perceived quality refers to customers' subjective evaluations of product quality. This component plays an important role in measuring brand equity. It is created when customers know and have associations with the brand. Thus, brand awareness and associations may have positive effects on perceived quality (Nguyen and Nguyen, 2002, Nguyen *et al.,* 2011)). From that, $H_1$ hypothesis is developed as below:

> $H_1$:*Brand awareness and associations have positive effect on perceived quality of brand*

## Brand Trust

It is defined as "the willingness of the average consumer to reply on the ability of the brand to perform its stated function" (Chaudhuri and Holbrook, 2001, p. 82). Brand trust influences on relationship commitment (Morgan and Hunt, 1994), product consideration and purchase (Erdem *et al.,* 2006) as well as satisfaction and loyalty (Lau and Lee, 1999). "Brand trust may also be evaluated as a consistency and credibility clue by customers" (Atilgan *et al.,* 2009, p. 121). Brand trust may be created by brand awareness and positive associations or perceived quality of customers. Thus, brand trust can be one of important elements that create customers' interests, needs, demand, consideration and product purchase, so it is likely a component of brand equity. From that, $H_2$ and $H_3$ hypotheses are developed as below:

> $H_2$: *Brand awareness and associations have positive effect on trust of brand*
> $H_3$: *Perceived quality of brand has positive effect on trust of brand*

## Brand Loyalty

It is defined as "the attachment that a customer has to a brand" (Aaker, 1991, p. 39) or "a deeply held commitment to rebuy or repatronize a preferred product or service consistently in future, despite situation influences and marketing efforts having the potential to cause switching behavior" (Oliver, 1997, p. 392). Brand loyalty determines customer to buy focal brand regularly and prevent them from switching to other brands. Therefore, brand loyalty is a component of brand equity (Aaker, 1991). Moreover, development, maintenance and increasing of brand loyalty of product are often considered as central of marketing activities (Dick and Basu, 1994). In other hand, by being committed to a brand, customer may need to know and has positive associations with the brand, or perception of brand quality is reliability (Nguyen and Nguyen, 2002; Nguyen *et al.,* 2011; Le, 2013). From that, $H_4$, $H_5$ and $H_6$ hypotheses are developed as below:

*H4: Perceived quality of brand has positive effect on loyalty of brand*
*H5: Brand trust has positive effect on loyalty of brand*
*H6: Brand awareness and associations have positive effect on loyalty of brand*

In summary, brand equity in gold industry is hypothesized to be measured by four components: brand awareness and associations, perceived quality, brand trust, and brand loyalty. These hypotheses and components are presented in conceptual model as below:
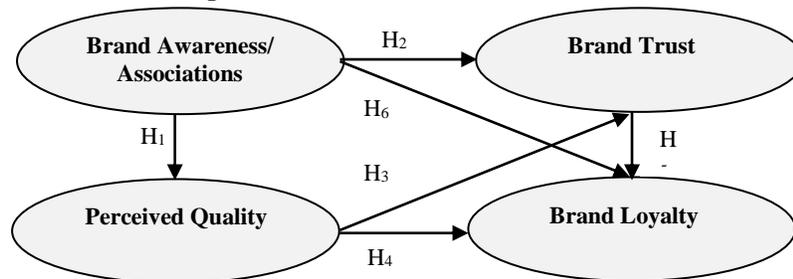


**Figure 1: Conceptual model**

Besides, the competitive model plays an important role in research of building scientific theory. (Zaltman *et al.,* 1982; Bollen and Long, 1993). In this study, therefore, the competitive model is developed to check the research model (conceptual model). According to the previous studies (Yoo *et al.,* 2000, 2001; Villarejo-Ramos and Sanchez-Franco, 2005; Le, 2013), the relation between the construct of brand awareness/ associations and brand loyalty has not yet been significantly highlighted and focused, thus, $H_c$ hypothesis is developed for the competitive model as below:

*Hc: Brand awareness and associations does not have positive effect on loyalty of brand*

***Methodology***

**Measurement**

The conceptual model of brand equity in gold industry proposed consists of four components: brand awareness and associations (BA), perceived quality (PQ), brand trust (BT), brand loyalty (BL). These components' scale as a set of items (or statements) is derived from the previous studies. For instance, the scale of brand awareness and associations and the scale of perceived quality are the unidimensional scales, consisting of six items for each type, from BA1 to BA6 and from PQ1 to PQ6, derived from the study of Yoo and Donthu (2001). The scales of brand loyalty and brand trust are also the unidimensional scales, comprising of six items for brand loyalty, from BL1 to BL6, and four items for brand trust, from BT1 to BT4, derived from the study of Atilgan *et al.* (2009). Then, the focus-group technique is applied to explore and adapt items of scales of dimensions. As the result, there is one item supplied for the scale of brand awareness and associations, two items for perceived quality and two items for brand loyalty. The items are applied to design a questionnaire for the quantitative research.

**Sample**

The questionnaire is made of statements which are items of scales to be evaluated with the five-point Likert scale graded from 1 to 5, of which 5 = "strongly agree" and 1 = "strongly disagree". Data is collected by the direct-interview technique. The research object is SJC brand. This is a gold brand, has become well-known since the Government of Vietnam chose SJC as the national gold brand. Samples that have purchased SJC during the last six months are chosen conveniently. Data is collected from May to June in 2013 in Vietnam. There are 200 completed questionnaire collected in which females count for 83% and 17% for males.

**Analysis Technique**

Data is processed by SPSS/Amos 20 software. The scales are evaluated by the analyses of Cronbach's alpha, Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA). The competitive model is built to test the theoretical model. Its sustainable characterization is evaluated by the Bootstrap method. The research hypotheses are then verified by Structural Equation Modeling (SEM).

*Data Analysis and Results*

**Measurement Refinement**

The dimensions' scales are first refined via Cronbach's alpha reliability and EFA using data collected from the 200 customers in the quantitative study. According to Nunnally and Burnstein (1994), any scale which has α (alpha) under 0.6 and item-total correlations under 0.3 is considered to be dropped out. The results show that all scales satisfy the requirements for reliability when deleting some unsuitable items. For instance, BA's α = 0.765 (the reversed item BA6 is dropped out because of having a low correlation to composite variable), PQ's α = 0.74 (the reversed item PQ4 is dropped out); BT's α = 0.830; BL's α = 0.918. All are over 0.7 and item-total correlations are over 0.3, scales are therefore reliable. Furthermore, the EFA results (Principal Components Analysis with Varimax rotation) indicate that all scales satisfy the requirements for factor loadings (> 0.5; Bagozzi and Yi, 1988; Hair *et al.,* 2006), difference of factor loading (> 0.3; Jabnoun and Al-Tamimi, 2003), total variance extracted (> 50%; Gerbing and Anderson, 1988), and number of components extracted (Table 1). Besides, the result of checking the extracted components' reliability by Cronbach's alpha shows that all alpha coefficients are over 0.6 and item-total correlations are over 0.3. Therefore, these measures are used in the next analyses.

**Table 1: The results of EFA**

| | Items | Components | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| Code | Content of items | Brand Loyalty | Brand Awareness | Brand Trust | Perceived Quality |
| BL1 | *My first choice would be SJC* | **.840** | .282 | | |
| BL3 | *I will continue to buy SJC when having need* | **.819** | .219 | | .103 |
| BL6 | *My friends and the people I know want/ prefer to (use) SJC* | **.767** | .289 | .109 | |
| BL2 | *I will not buy other gold brands if SJC is not available at the store* | **.766** | | | .138 |
| BL5 | *If having other gold brands which are as good as SJC, I still buy SJC* | **.742** | | .242 | .184 |
| BL7 | *I think that SJC is superior to other gold brands* | **.720** | | .198 | .129 |
| BL4 | *I will introduce SJC to my friends and relatives* | **.704** | .173 | .257 | .248 |
| BL8 | *I feel more confident when buying SJC, compare with other gold brand* | **.693** | .155 | .124 | .186 |
| BA5 | *When having no suggestion, I can still quickly recall the symbol or log of SJC* | .186 | **.863** | | |
| BA4 | *When having suggestion, I can quickly recall the symbol or logo of SJC* | .235 | **.858** | | |
| BA3 | *Some characteristics of SJC come to my mind quickly* | .197 | **.790** | .167 | .147 |
| BT3 | *The quality of SJC is always consistent* | .164 | | **.847** | .240 |
| BT2 | *SJC delivers the quality as promised* | .280 | | **.812** | |
| BT4 | *SJC delivers what it promises in its advertisements* | .131 | .184 | **.748** | .233 |
| PQ7 | *Designs (shapes) of SJC are always diversified and improved* | .162 | | .122 | **.855** |
| PQ8 | *I believe that SJC always renews its products to reach customers' expectations* | .190 | | .157 | **.813** |
| PQ5 | *SJC is well designed* | .175 | .162 | .139 | **.543** |
| | Eigenvalue | 6.898 | 1.910 | 1.657 | 1.178 |
| | Variance explained (%) | 29.048 | 14.417 | 13.174 | 11.847 |
| | Cronbach's Alpha | 0.918 | 0.846 | 0.805 | 0.685 |

There are four components as dimensions of brand equity extracted from the result of EFA:

- The first component consists of eights items, from BL1 to BL8. All describe customer's loyalty to brand, therefore this dimension is named "brand loyalty".
- The second component has three items, BA3, BA4 and BA5. They are items of the construct of brand awareness and associations in the initial conceptual model. However, they focus on measuring the construct of brand awareness instead of brand awareness and associations when checking the content validity of these items basing on the related literatures, such as definitions of brand awareness of Aaker (1991), Keller (1993) or definition of brand associations of Aaker (1991); and checking the scale of the construct of brand awareness built by other researchers, such as Nguyen and Nguyen (2002). Thus, the brand awareness is used instead of the brand awareness and associations after the EFA analysis. It means that the dimension of brand associations of the construct of brand awareness and association is dropped out in the research model.
- The third component has three items, BT2, BT3 and BT4. All describe customer's trust to brand, therefore this dimension is named "brand trust".
- The fourth component has three items, PQ5, PQ7 and PQ8. All describe dimension of quality perceived by customer to brand, therefore it is named "perceived quality".

**Measurement Validation**

CFA is used to evaluate the scales. The maximum likelihood (ML) estimation method is applied. Four constructs that are brand awareness, perceived quality, brand trust, brand loyalty are investigated by CFA. The final measurement model of brand equity's components in gold industry has 113 degrees of freedom. The CFA results show that this model has an acceptable fit to the data [$x^2_{(113)}$ = 192.408, $p$ =.000; $x^2$/df = 1.703 < 2; GFI = 0.904 > 0.9; CFI = 0.954 > 0.9; TLI = 0.945 > 0.9; RMSEA = 0.059 < 0.08]. Therefore, the scales of the components of brand equity are unidimensional (Steenkamp and Van Trijp, 1991). Besides, all standardized factor loadings are substantial ($\geq$ 0.5) and significant (p < 0.05) except PQ5 (0.45) of the scale of perceived quality. However, this scale's average standardized loading is 0.67 which is over 0.5, thus, the scale's convergence is likely accepted (Gerbing and Anderson, 1988). Moreover, "the composite reliability is also an internal consistency reliability measure as evidence of convergent validity computed from LISREL solutions" (Yoo *et al.,* 2000, p. 204) or "variance extracted estimates of 0.50 and above indicate convergent validity among items in a given scale" (Bagozzi and Yi, 1988, Fornell and Larcker, 1981; Atilgan *et al.,* 2009, p. 124), they demonstrate that the composite reliability and the variance extracted are also statistical indices as evidences of a scale's convergent validity. Basing on Table 2, factor loadings and these statements, the scales' convergence is supported; furthermore, the correlations among the components of brand equity are significantly below unity (p < 0.05), from 0.201 to 0.514, the scales' discriminant validity is therefore supported (Steenkamp and Van Trijp, 1991; Hair *et al.,* 2006). For determining of the scales' reliability, composite reliability ($p_c$), variance extracted ($p_{vc}$), and Cronbach's alpha coefficient ($\alpha$) are calculated. The scales' reliability is supported when $p_c$ > 0.5 (Joreskog, 1971), $p_{vc}$ > 0.5 (Fornell and Larcker, 1981), and $\alpha$ > 0.6 (Nunnally and Burnstein, 1994). The result of calculating of reliability is presented in Table 2.

**Table 2: The results of evaluating reliability**

| Constructs (Components) | Composite Reliability ($p_c$) | Variance extracted ($p_{vc}$) | Cronbach's alpha ($\alpha$) |
|---|---|---|---|
| Brand Awareness (BA) | 0.859 | 0.655 | 0.846 |
| Perceived Quality (PQ) | 0.716 | 0.470 | 0.685 |
| Brand Trust (BT) | 0.817 | 0.600 | 0.805 |
| Brand Loyalty (BL) | 0.920 | 0.591 | 0.918 |

The composite reliability and variance extracted are over 0.5 and Cronbach'α coefficient are over 0.6 except $p_{vc(PQ)} = 0.47$, but $p_{c(PQ)} = 0.716$, $\alpha_{(PQ)} = 0.685$, item-total correlations are over 0.3, at least 0.364 of PQ4. Thus, the scales' reliability is considered to be accepted.

In summary, the validation of scales indicates that scales satisfy the requirements for constructs' reliability and validity. Consequently, they are used to verify the structural model and hypotheses.

## Structural Model: Hypothesis Testing

After validating the constructs by Cronbach's alpha, EFA and CFA, the hypotheses and model are only adjusted by using the construct of brand awareness instead of the construct of brand awareness and associations. To verify the hypotheses, SEM is used. The ML estimation method is still applied. The structural model has 113 degrees of freedom. It is noted that the final measurement model and the structural model have the same degrees of freedom. The SEM results show that the structural model has an acceptable fit to the data [$x^2_{(113)} = 192.408$, $p = .000$; $x^2/df = 1.703 < 2$; GFI = 0.904 > 0.9; CFI = 0.954 > 0.9; TLI = 0.945 > 0.9; RMSEA = 0.059 < 0.08].



Chi-square =192,408; df =113; P =,000; Chi-square/df =1,703;
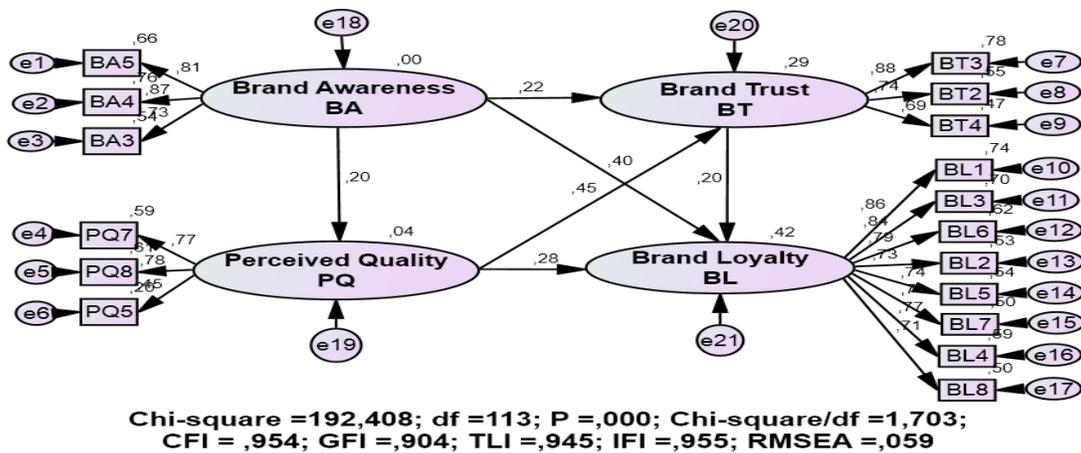CFI = ,954; GFI =,904; TLI =,945; IFI =,955; RMSEA =,059

**Figure 2: Structual model (Standardized)**

The fit of the conceptual model is checked by comparing this model with the competitive model (after adjusted). The result of evaluating the competitive model indicates that some statistical indices [$x^2_{(114)} = 222.745$, $p = .000$; $x^2/df = 1.954$; GFI = 0.887; CFI = 0.937; TLI = 0.925; RMSEA = 0.069] are not as well as the conceptual model's indices. For instance, GFI is 0.887, which is less than 0.9 while this index of the conceptual model is 0.904; RMSEA is 0.69 which is more than this index of the conceptual model while the lower RMSEA is, the better it is; and $\Delta x^2_{(1)} = 30.337$ (p = 0.000). Thus, the conceptual model is better than the competitive model in explaining the data. Moreover, the Bootstrap method is also applied to evaluate the sustainable characterization of the conceptual model (Schumaker and Lomax, 1996). The results of the Bootstrap analysis with B = 1.000 from n = 200 (Table 3) indicate that the Bootstrap's mean values have the tendency to approach the ML's estimates; furthermore, the values of bias and se(bias) are low and stable. Thus, the ML estimates applied for the conceptual model are reliable.

**Table 3: The results of Bootstrap with B = 1.000 (Standardized)**

| | | **ML** | | | **BOOTSTRAP** | | |
|---|---|---|---|---|---|---|---|
| | Parameter | Estimate | SE | SE-SE | Mean | Bias | SE-Bias |
| BA $\longrightarrow$ | PQ | .201 | .100 | .002 | .195 | -.006 | .003 |
| BA $\longrightarrow$ | BT | .218 | .082 | .002 | .207 | -.011 | .003 |
| PQ $\longrightarrow$ | BT | .454 | .086 | .002 | .455 | .001 | .003 |
| PQ $\longrightarrow$ | BL | .281 | .090 | .002 | .285 | .004 | .003 |
| BA $\longrightarrow$ | BL | .397 | .083 | .002 | .395 | -.002 | .003 |
| BT $\longrightarrow$ | BL | .197 | .097 | .002 | .193 | -.003 | .003 |

Table 4 shows the unstandardized and standardized structural paths of relationships of dimensions of brand equity. In this Table, p values present statistical significance ($p < 0.05$).  It means that brand awareness has positive effect on other dimensions of brand equity in gold industry and its influence on brand loyalty is highest (0.397); perceived quality has positive effect on brand trust and loyalty, and its impact on brand trust is strongest (0.454); besides, brand trust also has positive effect on brand loyalty, but it is weakest (0.197). These findings also indicate that the competitive hypothesis is rejected and the constructs' theoretical validity of the components including brand awareness, perceived quality, brand trust, and brand loyalty is supported.

**Table 4: The results of testing hypotheses**

| Hypothesis | | Path | | **Regression Weights** | | | | | **Standardized Regression Weights** |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Estimate | S.E. | C.R. | P | Implication | Estimate |
| $H_1$ | BA $\longrightarrow$ | PQ | | .117 | .054 | 2.176 | .030 | Accepted $H_1$ | .201 |
| $H_2$ | BA $\longrightarrow$ | BT | | .209 | .075 | 2.784 | .005 | Accepted $H_2$ | .218 |
| $H_3$ | PQ $\longrightarrow$ | BT | | .746 | .179 | 4.168 | *** | Accepted $H_3$ | .454 |
| $H_4$ | PQ $\longrightarrow$ | BL | | .639 | .216 | 2.956 | .003 | Accepted $H_4$ | .281 |
| $H_5$ | BT $\longrightarrow$ | BL | | .272 | .116 | 2.335 | .020 | Accepted $H_5$ | .197 |
| $H_6$ | BA $\longrightarrow$ | BL | | .525 | .100 | 5.266 | *** | Accepted $H_6$ | .397 |

*Discussion*

The research proposes the conceptual model of dimensions of brand equity in gold industry. The initial proposed model consists of components, which are derived from Aaker's model (1991), and are added the component of brand trust derived from Atilgan *et al.* (2009). This supplement of the brand trust component is explained by the following reason: gold is a special goods bought not only for trading to make profit but also keeping as a property; thus, the trust may consider as an important component or antecedent which creates the brand equity of this special goods. Moreover, according to the finding of Yoo *et al.* (2000, 2001), theoretically, although the construct of brand awareness and the construct of brand associations are the separated concepts, they are measured by one scale in real, named by the construct of brand awareness and associations. Therefore, the initial conceptual model consists of four dimensions: brand awareness and associations, perceived quality, brand trust, brand loyalty. Basing on the result of analyses of Cronbach's alpha, Exploratory Factor Analysis, Confirmatory Factor Analysis, Structural Equation Modeling, the model of brand equity in gold industry is measured by four dimensions: brand awareness, perceived quality, brand trust, and brand loyalty. Dimensions and its relationships are summerized as below.
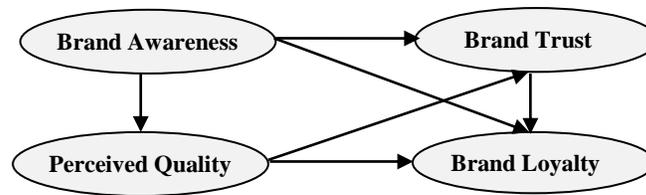
**Figure 3: The model of brand equity in gold industry**

The finding shows that the construct of brand awareness and associations in the initial proposed model is replaced by the construct of brand awareness because some items measuring the dimension of brand associations of the construct of brand awareness and associations are eliminated when validating measures. Moreover, the theoretical model found is also different from some previous researchers' model of brand equity. For instance, the dimension of brand associations which is proposed by Atilgan *et al.* (2009) is replaced by the dimension of brand awareness; the dimension of brand associations proposed by Aaker (1991, 1996) is replaced by the dimension of brand trust; or the dimension of brand image proposed by Yoo *et al.* (2000, 2001), Villarejo-Ramos and Sanchez-Franco (2005) is also replaced by the dimension of brand trust.

However, basing on the relative literatures and findings, the difference is supported. It means that the model of brand equity depends on the type of product that it is used to verify. Moreover, some causal relationships between four dimensions of brand equity are also found, for instance, brand awareness impacts positively on perceived quality ($\lambda = 0.201$, $p = 0.030$), brand trust ($\lambda = 0.218$, $p = 0.005$) and brand loyalty ($\lambda = 0.397$, $p = 0.000$); perceived quality has positive effects on brand trust ($\lambda = 0.454$, $p = 0.000$) and brand loyalty ($\lambda = 0.281$, $p = 0.003$); and brand trust is positively related to brand loyalty ($\lambda = 0.197$, $p = 0.020$). In other hand, this research also builds scales of dimensions of brand equity. These scales are reliable, unidimensional and they have convergent, discriminant and theoretical validity; for instance, the scale of brand awareness or perceived quality or brand trust is measured by three items for each one, the scale of brand loyalty is measured by eight items.

*Implications*

**Theoretical Implications**

This study contributes to the under-investigating area of marketing by adding the model of brand equity that is investigated in gold industry at an emerging market as Vietnam. Furthermore, it also explores relationships of dimensions of brand equity. The scales of dimensions are verified rigorously. Moreover, the methodology and the process applied for this research have a valid reference meaning for those who are interested in this field.

**Managerial Implications**

The model of brand equity built can be used as a reliable reference resource for government officials in building some policies relating gold in order to develop gold market. Some solutions are suggested, such as building detail gold standards and management policies, then communicate them popularly; encouraging and supporting companies in investing to build brands of gold by marketing mix from reasonable policies; reducing barriers to develop the gold market's operation, especially for retailers. Besides, this research results suggest that managers of gold brands should recognize the differences between model of brand equity in gold industry and other industries to design reasonable strategies of communication for enhancing effectiveness of building gold brands.

## Conclusion

This research built the theoretical model of customer-based brand equity in gold industry consisting of four components: brand awareness, perceived quality, brand trust, brand loyalty. These components' scales are reliable and unidimensional. Furthermore, they also obtain convergent, discriminant and theoretical validity. The finding also has some differences from previous researches, it is therefore believed to have significant supplements to marketing literature. Nevertheless, the research itself contains some limitations. First, the data is only collected in the southern region of Vietnam. Second, the research object is only the SJC gold although it is a national gold brand of Vietnam. It is therefore necessary to be further tested by other gold brands or regions for increasing the theoretical model's generalizability proposed. Besides, this research has not examined the antecedences of brand equity yet, thus it is recommended for further research studying on the impact of some factors, especial elements of marketing and macro environments, on dimensions of brand equity.

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