MEASURING CONSUMER-BASED BRAND EQUITY OF BANKING SERVICES

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1. Introduction

Brand equity is an important concept in business life and scientific research because a successful brand can provide a company with a competitive advantage. Many companies when looking for business opportunity can benefit from their present brand names. Thus, management of the brand equity becomes part of the business strategy. In the Vietnamese business climate, the concept of brand equity has not been clarified and managers didn't know how to find a reliable instrument for measuring the brand equity. Previous researches tend to pay much attention to market for commodities, although the brand equity is of similar importance to the market for services. In comparison with other services, the banking one is considered as the service that involves high functional and financial risks. Building the brand names is a current trend among international banks because it enhances customers' invisible trust, helps them figure out and understand the invisibility and reduce their worries about financial and social risks. In other words, the brand equity of a bank could be defined as favorable or unfavorable attitude that takes shape and affects a customer when selecting a bank for his/her financial matters. A bank acquires a strong brand equity when a large number of customers have a favorable and friendly attitude towards the brand of the bank.

This paper aims at identifying a way of measuring the brand equity based on customers' perception of banking services. It also examines relations between banking service brand equity with financial results of the bank when supplying the service. Two important questions to the brand management raised here are: "What makes a brand strong?" and "How is a strong brand built?" Useful information about components of a customer-based brand equity and interaction between these components in the context of the banking system will be analyzed and explained. The paper tries to prove that a strong brand equity leads to a good business performance. Different financial results reflect different strengths of the brand equity.

2. Theoretical basis and hypotheses

According to previous foreign researches, various methods of measuring the brand equity of many products and services, from fast-moving consumer goods to hotel and restaurant, have been introduced and tested (Keller 1993; Aaker, 1996; Oliver, 1997; Mackay, 2001; Yoo and Donthu, 2001; Kim et al., 2003; Pappu et al., 2005; Kayaman and Arasli, 2007). Generally, these researches measure the consumer-based brand equity through the following components:

- Brand awareness: This concept reflects im-

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pression of a brand on consumers' mind. Aaker (1996) defines the brand recognition as consumer's ability to recognize and recall a brand as a component of a product. Keller (1993) suggests that brand awareness consists of brand recognition and brand recall. Brand recall relates to consumers' aptitude to retrieve the brand from memory given a brand a cue, the needs fulfilled by the category or a purchase or usage as a cue. The consumer-based brand equity occurs when consumers have a high brand awareness and familiarity with the product and keep a brand association strongly, favorably and particularly in their mind. Our first hypothesis is as follows:

H1: Consumers' awareness of a brand of a service affects directly the service brand equity.

- Perceived quality means consumers' opinions of ability to meet their expectation by a brand of service or product. The perceived quality is not necessarily its real quality but it implies that consumers' subjective judgment of the product/service. The perceived quality creates value to consumers and gives them reasons to buy products and its differentiation from rivalrous brands (Yoo & Donthu, 2001). Indeed, the perceived quality creates consumers' love for the brand. The second hypothesis is:

H2: Quality of a service as perceived by consumers affects directly the brand equity of the service.

- Brand image means that the consumers have a stronger, and more specific and favorable association with a brand than with others of the same category. Because the supply and consumption of a service takes place at the same time, service experience leads to the positive building of meanings related to behavior, thinking and feelings in the service process, which affects continuously the brand image perceived by consumers (Aaker, 1996). The brand image also reflects a social image and some added value because social prestige explains why people keep buying or using the brand (Pappu et al., 2005). Big brand equity implies that consumers have a positive association with respect for the brand. The third suggested hypothesis is:

H3: Brand image of a service in consumers' mind affects directly the brand equity of the service.

- Brand loyalty is defined (Oliver 1997) as "a deeply held commitment to rebuy or repatronize a preferred product/service consistently in the future, thereby causing repetitive same-brand or same brand-set purchasing, despite situational influences and marketing effort having the potential to cause switching behavior." Kayaman and Arasli (2007) argue that the loyalty is characterized by a sympathetic attitude towards a brand and repurchase of the brand over time. Regarding consumers' attitude, the brand loyalty is defined as a tendency to be faithful to a brand that is proven by an intention of buying the brand as the first choice (Yoo and Donthu, 2001). The brand loyalty is a great value to the firm because consumers are ready to pay a higher price for a good brand, the firm supplied the service at a lower cost, and it can attract more consumers. The fourth hypothesis is:

H4: Consumers' brand loyalty affects directly the brand equity.

Thus, measuring the brand equity of banking services in this research measure measuring four components: brand awareness, perceived quality, brand image and brand loyalty.

Prior researches also direct our attention towards relation between the brand equity and financial result. The consumer-based brand equity, according to Kim et al. (2003), and Mackay (2001), is a force controlling the business performance. In other words, if a brand is better recognized by consumers in comparison with other brands, they tend to buy that brand, which leads to increased in sales and profit of the firm. Two more hypotheses, therefore, are suggested:

H5a: The consumer-based brand equity varies over firms with different financial results.

H5b: The consumer-based brand equity affects positively the financial result of the firm.

3. Scope of the research and methodology

In Vietnam, there are different kinds of banks (state-run, joint stock or foreign-invested ones).

Identifying banks that are willing to supply their financial information is very important to the research because it aims at measuring the consumer-based brand equity in relation with financial result. While most state-run and foreign-invested seldom publicize their financial information, joint stock commercial banks have to supply such information to their shareholders via their websites. We decide to choose joint stock commercial banks in HCMC and their private customers as subject of our research for the convenience of data collection.

Previous researches use sales turnover as a tool for measuring the brand equity on the assumption that the sales turnover affects the profit. A strong brand gains high sales and produces high profits (Mackay, 2001). In the banking sector, its services are diverse and banks can use deposits to invest in real estates and companies. Because subject of this research is private customers of the banks, the concept of sales turnover in this research implies income from banking services in the last two years before the research was carried out. Numerical data analyzed in the research is called "income from banking services" presented in the Consolidated Business Performance Report" by six banks for the fiscal year ending on December 31. Financial statements of banks included in the researches are carried on their corresponding websites.

Qualitative research was carried out in form of a team discussion comprising 10 private customers of banks with a view to developing a scale for components of the brand equity and identifying six banks for the follow-up quantitative research. In the discussion, participants were asked to name six commercial banks they knew (unaided brand recognition). Then they are asked to delete brands they did not know from a list of 12 commercial banks (aided recognition). Thirty observed variables used for measuring four components of the brand equity and the overall brand equity were developed according to the theoretical basis. After the discussion, the six selected banks to be included in the research were Á Châu (ACB), Đông Á (EAB), Sai Gòn Thương Tín (Sacombank), Kỹ Thương (Techcombank), Sài Gòn (Saigonbank) và Nam Á (NamAbank). Four out of thirty observed variables were removed, and the remaining 26 variables comprise five for brand recognition, nine for perceived quality, six for brand image, three for brand loyalty and three for the overall brand equity.

Answered questionnaires returned by respondents are main sources of quantitative information. Each questionnaire carries up to 26 opinions about components of the brand equity. Each opinion is measured using a five-point Likert scale. Convenience and quota sampling methods are used in this research. We selected 450 private customers of six banks (17% for each bank). After four weeks of gathering data in branches of the banks, 421 appropriate answered questionnaires were processed and analyzed.

Of these samples, 43% are male customers and 57% female. Some 70% of them are in the 18-30 age bracket, 18% in 31-40 age bracket, and the rest are at least 41 years old. Half of respondents have monthly income varying from VND2 to 5 million, and a quarter make higher incomes (from 5 to 8 million). Respondents who earn less than 2 million or more than 8 million account for some 25%. Most of respondents are graduates from college or university (83%), some 10% are high school graduates and 7% are postgraduates. Over 40% of them are office workers in non-public sectors, 16% in the public sector and 40% have other occupations (traders, students, teachers, business owners, housewives and freelancers). Their banking experience varies from five months to 24 years. Banking services they used are: ATM card and domestic payments (50%), ATM card and international payment (9%), current account (27%), saving account (47%) and consumption loan (9.6%).

Tests of factor analysis and reliability are employed to estimate internal consistency of each item under consideration. First of all, factor analysis of each item is examined to provide evidence of discriminant validity and convergent validity of the scale. Estimation of discriminant validity is done by examining correlation matrix between dependent and independent variables and picking out variables with low correlation coefficients. A high correlation coefficient (0.85) reveals multicollinearity, which means that these items are duplicate ones and they may be measuring the same thing (John & Benet-Martinez, 2000). A high tolerance (> 0.1) and a low VIF coefficient (<10) are also criteria for detecting the multicollinearity in the regression model. Fit degree of internal correlation between observed variables in research items is presented by KMO measure of sampling adequacy and significance degree of Barlett's test. Extraction of representative factors by observed variables is done by analyzing principal factors using Varimas rotation. Components whose Eingenvalue is greater than 1 and total variance extracted is equal to or greater than 0.50 are considered as factors representing the variables. Secondly, the internal consistency method employs Cronbach's alpha to express reliability of the scale when alpha is greater than 0.7 (Nunnally & Berstein, 1994). If all factor loadings are greater than the conventional 0.50, all items in the research have convergent validity (Hair et al., 2006).

Linear regression statistics are used for testing the hypotheses, that is, for detecting relations between four components of the brand equity and the brand equity itself. Independent t-test is used to discover difference in customers' awareness of components of the brand equity of two groups of different banks. Non-parametric correlation analysis is used to discover the relation between consumer-based brand equity and financial result of the bank.

4. Research results

a. EFA and Cronbach's alpha:

Applying the EFA to the scale of components of the brand equity show that four items are extracted at Eigenvalue of 1.104, and the variance extracted is 50.509%. One observed variable belonging to "brand image" (HA_6) is deleted because its factor loading coefficient is smaller than 0.50 (HA_6 = 0.042).

Table 1 shows that after deleting that variable, applying the EFA to the remaining 22 observed variables results in four items at the Eigenvalue of 1.095 and variance extracted of 51.923%. Cronbach's alpha of "brand awareness" is 0.730; "perceived quality" 0.843; "brand image" 0.752; and "brand loyalty" 0.832.

Table 2 shows that the "overall brand equity" as a variable is a unidimensional construct. The Cronbach's alpha of this variable is 0.833; its Eigenvalue is 2.249 and variance extracted: 74.968. All factor loadings are greater than 0.80 EFA results prove that observed variables represent items to be measured.

b. Discriminant validity and multicollinearity

Correlation matrix in the table 3 shows that four components of the brand equity have significant relations with one another. All absolute correlation coefficients of variables vary between 0.282 and 0.600, not greater than the conditional coefficient of 0.85, which proves that the discriminant validity is ensured. All tolerance values are greater than 0.52; and VIF values are between 1.26 and 1.93, which shows that there is no multicollinearity (Table 4).

c. Test of regression model:

In the Table 4, multiple linear regression is statistically significant at $p < 0.001$. F value and its statistical significance show that the regression model is appropriate to collected data. Adjusted R-squared shows that compatibility of the model is 46.7%, or in other words, some 47% of fluctuations of the dependent variable TSTH are explained by four independent variables: NB, CL, HA and TT. Standardized Beta coefficient varies between 0.001 and 0.340 with $p < 0.05$. These four components are good indicators for the overall brand equity. Hypotheses H1, H2, H3 and H4 are acceptable. Thus, the multiple regression model presenting the brand equity based on results of this research is: TSTH = 0.100 NB + 0.274 CL + 0.116 HA + 0.340 TT.

d. Test of difference in awareness of brand equity of two groups of banks:

Financial results of the six banks reflect in their average revenue from banking services in the years 2007 and 2008 (Table 5). Revenue from services comprise bank charges for services and commissions for certain operations. Banks whose

Table 1. EFA of components of brand equity

Observed variable	Factor loadings			
	1	2	3	4
NB_1. *I know the bank X.*			0.599	
NB_2. *I can tell X from other banks easily.*			0.704	
NB_3. *I can spell the name of that bank correctly.*			0.684	
NB_4. *I can notice logo of the bank X quickly.*			0.787	
NB_5. *I can remember and recognize characteristic colors of the bank X.*			0.661	
CL_1. *Employees of the bank X treat me as their best customer.*	0.619			
CL_2. *Facilities of the bank X ensure safety.*	0.513			
CL_3. *Procedures in the bank X are simple.*	0.643			
CL_4. *Charges made by the bank X match its service quality.*	0.658			
CL_5. *Employees of the bank X are well-dressed.*	0.515			
CL_6. *Employees of the bank X understand and satisfy customers' needs quickly.*	0.72			
CL_7. *Employees of the bank X deal cleverly with problems.*	0.712			
CL_8. *Space for transactions at the bank X is comfortable and pleasant.*	0.547			
CL_9. *The bank X offers professional services.*	0.59			
HA_1. *The bank X is specialized in financial- monetary services.*		0.569		
HA_2. *The bank X offers a wide range of products/services.*		0.549		
HA_3. *Managers of the bank X do well their jobs.*		0.677		
HA_4. *The bank X has a good record in the banking sector.*		0.662		
HA_5. *The bank X is reliable.*		0.624		
TT_1. *I still buy services from the bank X.*				0.755
TT_2. *I think of the bank X first when having a financial-monetary need.*				0.658
TT_3. *I will use services of the bank X in years to come.*				0.605
Eigenvalue	6.881	2.086	1.36	1.095
Variance extracted	31.279	9.484	6.182	4.948
Cronbach's alpha	0.843	0.752	0.73	0,832

Notes: NB: brand awareness, CL: perceived quality, HA: brand image, TT: brand loyalty.

Table 2: Factor analysis of the overall brand equity

Variable	Factor loadings	Eigenvalue	Variance extracted	Cronbach's alpha
Overall brand equity (TSTH)		*2.249*	*74.968*	*0.8327*
TSTH_1. *It is significant to buy service from the bank X, although all banks are similar.*	0.855			
TSTH_2. *Although other banks may be similar to the bank X, I prefer it anyway.*	0.875			
TSTH_3. *Although other banks are as good as the bank X, I prefer it anyway.*	0.867			

Table 3: Relations between items in the research

Item	1	2	3	4	5
Brand awareness	1	0,325*	0,349*	0,309*	0,282*
Perceived quality	0.325*	1	0.557*	0.519*	0.544*
Brand image	0.349*	0.557*	1	0.523*	0.467*
Brand loyalty	0.309*	0.519*	0.523*	1	0.600*
Overall brand equity	0.282*	0.544*	0.467*	0,600*	1

Note: * Spearman's correlation is statistically significant at 0.01; n = 421.

Table 4: Predictions from multiple regression model

Variable		Beta coeffi-cient	Partial R	T value	Significance T	Tolerance	VIF
Dependent	Independent						
TSTH	NB	0.1	0.12	2.505*	0.013	0.791	1.264
	CL	0.274	0.271	5.829**	0	0.571	1.752
	HA	0.116	0.113	2.357*	0.019	0.583	1.715
	TT	0.34	0.333	7.304**	0	0.519	1.927
Adjusted R^2 = 0.467 F value = 93.019** Significance of F = 0.000							

Notes: ** Statistical significance $p < 0.001$; * Statistical significance $p < 0.05$.

Table 5: Classification of banks by financial results in 2007-08 (VND million)

Group	Revenue from service in 2007	Revenue from service in 2008	Average revenue
High-income group (n = 210)			
ACB	342,592	680,301	511,446.50
Sacombank	291,083	672,016	481,549.50
Techcombank	206,958	543,270	375,114*
Low-income group (n = 211)			
EAB	180,747	203,524	192,135.50
SaiGonbank	142,161	158,393	150,277
NamAbank	6,836	10,990	8,912.50

Note: * median.

Source: Consolidated Business Performance Reports of banks on their websites for shareholders in 2009.

average revenue is equal too r greater than the median (VND375,114 million) are included in the group of high-income banks, and others are in the group of low-income bank. The first group comprises ACB, Sacombank and Techcombank, while EAB, Saigonbank and NamABank are in the second one.

T-test results in the table 6 show that there are remarkable differences in four attributes in the brand awareness between two groups of banks. They are "spelling the name of the bank," "telling the bank from others," "noticing the logo of the bank," and "remembering and recognizing the color of the bank." Apparently, the group of high-

Table 6: Differences in average values of the two groups of banks

Variable	High-income banks (n = 210)		Low-income banks (n = 211)		T value
	Av	SD	Av	SD	
Brand awareness					
- Knowing the bank X.	4.45	0.670	4.38	0.632	1.091
- Telling X from other banks easily.	4.33	0.752	4.05	0.763	3.849***
- Spelling the name of that bank correctly.	4.37	0.728	4.23	0.724	1.993**
- Noticing logo of the bank X quickly.	4.13	0.914	3.74	0.897	4.362***
- Remember and recognize characteristic colors of the bank X.	4.00	1.060	3.83	0.941	1.705*
Perceived quality					
- Employees of the bank X treat me as their best customer.	3.95	0.837	3.99	0.834	-0.527
- Facilities of the bank X ensure safety.	3.76	0.836	3.88	0.794	-1.624
- Procedures in the bank X are simple.	3.74	0.829	3.48	1.050	2.907**
- Charges made by the bank X match its service quality.	3.54	0.745	3.65	0.774	-1.501
- Employees of the bank X are well-dressed.	4.15	0.790	4.18	0.699	-0.382
- Employees of the bank X understand and satisfy customers' needs quickly.	3.80	0.744	3.77	0.740	-0.380
- Employees of the bank X deal cleverly with problems.	3.47	0.790	3.48	0.770	-0.095
- Space for transactions at the bank X is comfortable and pleasant.	3.77	0.840	3.82	0.872	-0.581
- The bank X offers professional services.	3.84	0.753	3.71	0.786	1.759*
Brand image					
- The bank X is specialized in financial- monetary services.	3.82	0.788	3.82	0.755	0.074
- The bank X offers a wide range of products/services.	3.97	0.706	3.77	0.756	2.806**
- Managers of the bank X do well their jobs.	3.50	0.763	3.43	0.684	1.019
- The bank X has a good record in the banking sector.	3.73	0.761	3.51	0.74	2.946**
- The bank X is reliable.	3.98	0.697	3.91	0.749	1.014
Brand loyalty					
- Still buying services from the bank X.	3.64	0.844	3.53	0.828	1.378
- Thinking of the bank X first when having a financial-monetary need.	3.72	0.810	3.66	0.835	0.758
- Agreeing to use services of the bank X in years to come.	3.83	0.860	3.67	0.859	1.942*

Notes: Av: Average value; SD: Standard deviation.

*** Statistical significance $p < 0.001$; ** Statistical significance $p < 0.05$; * Statistical significance $p < 0.1$.

income banks is more recognizable to customers than the low-income ones.

Regarding the perceived quality, the group of high-income banks is held in high regard by customers because of their simple procedures. They are also appreciated by customers because of their professional way of doing business. As for the brand image, they make customers think immediately of "a bank with diverse products/ services" and "a bank with good records in banking sector." The brand loyalty reflects in three observed variables. Number of customers who want to buy services from high-income banks in years to come is much bigger than that of low-income banks. Statistical results also support the hypothesis H5a (The consumer-based brand equity varies over firms with different financial results).

e. Test of relation between consumer-based brand equity and financial results of the banks:

Because of limited number of samples (only six banks are surveyed) and uncertainty about distribution of samples, the research gives priority to the Kendall's tau coefficient. The brand equity as a variable is measured totally in itself, and financial result of the bank that reflects in revenue from banking services is included as another variable. In addition, mean scores of four components are used for examining effects on the financial results. Table 7 presents the brand equity and four components that have relations with the financial results. When considering the brand equity as a variable, we see it has a forward relation with the financial result (Kendall's tau = 0.100). When examining each component, we find that "brand awareness" (Kendall's tau = 0.136), and "brand image" (Kendall's tau = 0.118) have the similar relation with the financial result. These findings support the hypothesis H5b (The consumer-based brand equity affects positively the financial result of the firm).

Table 7: Relation between brand equity and financial results

Financial result	Kendall's tau
Brand equity	0.100**
Brand awareness	0.136**
Perceived quality	0.004
Brand image	0.118**
Brand loyalty	0.068

Note: ** Kendall's tau coefficient is statistically significant at $p < 0.01$.

5. Conclusion and suggestions about brand management

Results of the research support six suggested hypotheses. Namely, the results affirm four components of the service brand equity (brand awareness, perceived quality, brand image and brand loyalty). In addition, the four components of the service brand equity also have forward relations with one another. Thus, the concept of brand equity and its components, especially when applied to banking services in this research, are affirmed. The service brand equity as perceived by customers has a positive relation with the financial result of supplier of services. The research results imply that banks should pay full attention to brand loyalty, perceived quality, brand image and brand awareness when building the consumer-based brand equity for their services.

Each bank should work out a marketing mix to introduce its brand names to expected pattern of perception with a view to changing it into choice behavior. Consumers can enhance their awareness of brand names and their attributes as a result of data collection. In addition, brand managers should identify carefully sources of information open to consumers and importance of each source. These findings help managers select effective channels of propaganda that can raise attention and make consumers retain names, logos, and colors of the brand in their mind.

Research results show a close relation between brand awareness and bank's business performance. Actually, improvement in brand awareness caused by advertising and sale promotion campaigns can lead to increased revenue from services. Strong and successful marketing activities via mass media seem common among competitive banks. Besides ads on mass media, charity activities and sponsoring social, cultural, sport and humanitarian events can enhance the brand awareness.

Brand image is supposedly influential in the bank's business performance. Consumers' trust can be changed by right attributes, consumers' experience, and effects of selected recognition, selected distortion and selected retention. Bank managers should bear in mind that brand image is a long-term measure, and they should acquire necessary knowledge of importance of brand image associations as shown in the Table 6.

Customers' brand loyalty is considered as an act of repurchasing the service in a highly sensitive condition. Loyal customers seldom purchase services from competing suppliers just because of price, and loyal customers buy the service more frequently than disloyal ones. Research results show that the brand loyalty makes the biggest contribution to the service brand equity. The results did not show a remarkable relation between the brand loyalty and financial outcome of the bank because of strong effects of short-term marketing campaigns. In recent years, various sale promotion programs have been launched by banks to compete for customers, which led to increases in bank charges. However, it is hard to believe that one purchase only by every customer leads to a long-term increase in revenue of the firm, and bank managers, therefore, should pay attention to importance of customers' repurchase and satisfaction. At almost any time, marketing campaigns can beef up existing purchase behavior of customers, but their repurchase is usually based on their long-term opinions and attitude. The repurchase behavior is what the banks should aim at because it reflects the brand loyalty. Research results imply that the banks should understand their customers (attitude, intention, taste, satisfaction, and way of choice, etc.) with a view to building the brand loyalty.

The research also shows that although the perceived quality is an effective measure of overall brand equity, it does not affect considerably the business performance. This will be a warning for those who are enthusiastic about improvement in quality. T-test result shows that customers of two groups of banks (higher and lower grades) have the same opinion about quality of banking services. Good service quality alone cannot create increases in revenue for the bank because customers think quality of services does not differ over banks. Regarding two leading attributes of the service quality ("simple procedures" and "professional service"), the high-income banks are held in much higher regard. Those two attributes cre-

ates "uniqueness" of these banks and they help develop their brand images, which persuades customers to buy much more services on a more regular basis from these banks in comparison with others, thereby providing them with higher revenues. This allows us to conclude that perceived quality is not an unconnected variable. It should be linked with other three variables to develop the brand equity, thereby improving the financial result of the bank. When pursuing the quality control plan with a view to gaining higher profit, the banks should remember that the brand building is the central strategy in the service sector; and it is the principal instrument for differentiating their services from others supplied by competitors. In short, the research shows that a strong service brand equity can increase considerably the financial results of the firms and absence of such a brand equity may reduce revenues of the banks.

6. Limitations and direction for further research

Besides contributions based on results of the research, this project contains some limitations, which allows some suggestions about directions for future researches.

Firstly, the research is limited to clients of six HCMC-based joint stock commercial banks, which means that its generalization is limited. Future researches may gather data from more banks in various cities and provinces, and use much more samples.

Secondly, in this research, data about services offered by banks are considered as representative indexes of business performance, while revenue of banks includes bank charges and commissions for services supplied to both private clients and company clients. Numerical data presented in financial statements the banks supply to investors prevent us from separating revenue from private clients from that from company ones. Future researches may pay more attention to company clients, and use other financial indexes, such as market share, to identify and predict financial results of companies.

Thirdly, the research fails to examine other factors than the brand equity that may affect the business performance, such as marketing campaigns that is very effective in the short term, management strategy, or ideas of new products or services. Hopefully, these variables will be taken into account by future researches■

References

1. Aaker, D.A. (1996), "Measuring brand equity across products and markets", *California Management Review*, Vol. 38 No.3, Spring, pp.102-120.

2. Hair, J., R. Aderson, P. Tatham, and W. Black (2006), *Multivariate Data Analysis*, 6th ed., Prentice-Hall, Upper Saddle River, N.J.

3. John, O.P., and V. Benet-Martinez (2000), "Measurement: reliability, construct validation, and scale construction", in H.T. Reis and C. M. Judd (Eds.), *Handbook of Research Methods in Social Psychology*, pp. 39-369, New York: Cambridge University Press.

4. Kayaman, R. and H. Arasli (2007), "Customer based brand equity: Evidence from the hotel industry", *Managing Service Quality*, Vol.17 No.1, pp. 92-109.

5. Keller, K.L. (1993), "Conceptualizing, measuring, and managing consumer-based brand equity", *Journal of Marketing*, Vol. 57, January, pp.1-22.

6. Kim, H., W.G. Kim, and J.A. An (2003), "The effect of consumer-based brand equity on firms' financial performance", *Journal of Consumer Marketing*, Vol. 20 No.4, pp. 335-351.

7. Mackay, M.M. (2001), "Application of brand equity measures in services markets", *Journal of Service Marketing*, Vol. 15 No.3, pp. 210-221.

8. Nunnally, J. and I.H. Bernstein (1994), *Psychometric Theory*, 3rd ed., McGraw-Hill, NY.

9. Pappu, R., P.G.Q Quester, and R.W. Cooksey (2005), "Consumer-based brand equity: Improving the measurement – empirical evidence", *Journal of Product and Brand Management*, Vol. 14 No.3, pp. 143-154.

10. Yoo, B. and N. Donthu (2001), "Developing and validating a multidimensional consumer-based brand equity scale", *Journal of Business Research*, Vol. 52, pp. 1-14.

11. Websites: http://www.acb.com.vn/, http://www.nab.com.vn/, http://www.sacombank.com/vn/, http://www.eab.com.vn/, http://www.scb.com.vn/, https://www.techcombank.com.vn/