The Effect of Higher Education Brand Images on Satisfaction and Lifetime Value from Students' Viewpoint

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ABSTRACT This study examined the relationship between the brand image students have of their colleges and their satisfaction and lifetime customer value. Institutes of higher education can use the results of the analysis to make improvements, correct weaknesses and make policies. The research framework was based on literature review and relevant research variables. The subjects were college students in Taiwan. Questionnaires were administered and a total of 270 valid samples were collected. Data analysis using structural equation models (SEM) and Multi-group Analysis showed that brand image affected customer satisfaction, and subsequently affected customer lifetime value. Customer satisfaction was also a partial mediating variable between brand image and customer lifetime value.

INTRODUCTION

Brand is a form of quality attained through long labor and scientific studies. Brand has become imperative to gain customer loyalty and the long term survival and development of businesses, and educational institutions are no exception. Brand image is a factor in the willingness of prospective or existing customers to connect with a company (Mazzarol 1998).

However, choosing a college is one of the most important decisions for college students. After all, a diploma is a lifelong achievement and having a diploma from a reputable school confers a non-physical advantage that will directly affect ones' workplace competitiveness and performance. The brand image of schools deeply influences student willingness to enroll. When students receive new information, they may change their view toward a school, and subsequently their behavior. Student identification and perception of a school during the semester is even more important. From the standpoint of customer loyalty, positive recommendations from students already enrolled are often sufficient to cultivate the interest of prospective students toward a certain school. As such, the brand image

of a school greatly affects student identification and values, and their willingness to enroll. Therefore, establishing an excellent school brand image through a variety of means is vital to recruiting new students (Palacio et al. 2002).

The brand image of schools strongly affects existing students, and forms the basis for selecting a school among prospective students. It also changes public attitude toward the school and student assessment of higher education. Therefore, schools cannot take lightly the customer satisfaction and behavioral intent of students (Elliot and Shin 2002) and the impact of school brand image on the future customer lifetime value of students.

The study using college students as subjects, this research examined institutes of higher education to explore brand image of institutes of higher education, student satisfaction and customer lifetime value to determine the effect of these variables on the competitiveness of schools and their subsequent creation of an excellent school brand image.

Literature Review

Brand image is an important link in marketing. It is an important informational indicator through which consumers judge product quality, which motivates their buying behavior and remains in their memory model. Similarly, within the educational system, school brand image is a major factor for students when selecting schools.

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A positive school brand image can help students distinguish and define differences among schools, and subsequently affect their selection intent.

In terms of consumer benefits, Park et al. (1986) developed different concepts of brand image, namely (1) Functional brand image, which is usually designed to meet the external needs of consumers. In other words products and services offered by schools to satisfy the functional needs of customers and resolve related consumer problems refer to perceptions of tangible images such as building facilities, environmental resources and courses; (2) Symbolic brand image, which is usually designed to connect individuals with specific population, roles or self-image. In other words, school brand image that can satisfy the internal needs of consumers to increase their self-worth, social role and status, integration with a social group and self-identity comprises perceptions of social reputation, educational features and staff characteristics; and (3) Experiential brand image, which is usually designed to satisfy consumer need for stimulus and diversity. It emphasizes the satisfaction and cognitive stimulation gained from using the school brand, and includes perceptions of learning experience, educational experience and living experience.

According to past scholars, brand image remains in consumer memory and brand related associations. It is used to judge or maintain perceptions of product quality, and hence encompasses all the information about the product. Therefore, consumers have different perceptions of quality regarding different product brands, but these perceptions usually pertain to functional, symbolic and experiential images. Thus based on the study by Park et al. (1986), this research on brand image divided the brand image perceptions of student customers into functional, symbolic and experiential images.

Pate (1990) pointed out that during their college career, the satisfaction of students toward their schools has positive effect on their willingness to recommend the school after graduation, pursue further degree in the same school or donate to the school. In satisfaction surveys, students will recall their campus experience, and schools can improve the quality of their services according to the analysis of such surveys. Schools are organizations, and an effective school is one that can effectively exercise its educational functions. In particular, institutes of higher education should routinely improve its educational quality, note its teaching process, utilize educational resources, establish comprehensive curricula and increase learning interest in students. Teaching quality improvements that are consistent with student and parent satisfaction toward the school and educational goals can release student potential and competitiveness, and cultivate students who fulfill market needs, thereby further increasing student satisfaction toward the school. Davis and Ellison (1995) indicated that the greater the student familiarity with campus environment, including academic knowledge, services and facilities, the higher their satisfaction toward the school. Therefore, student satisfaction surveys can help students become aware of their campus environment and rethink the services offered by their schools. In this research, satisfaction toward schools referred to student subjective evaluation of their school's service efficiency, course quality and hardware facilities.

Gurau and Ashok (2002) examined the effect of customer satisfaction on customer lifetime value. In assessing customer profitability, the dynamics of external environment must be considered due rapidly changing market environment. Berger and Nasr (1998) stated that maintaining customer relationship will generate cost. Therefore to evaluate customer lifetime value, all customer related income and costs must be factored into the assessment, and using cash flow method, calculate the present discounted value. Customer satisfaction is a very important factor affecting customer lifetime value (that is, customer profitability). With increasing competition and rapidly changing market environment, managers must continue researching to determine customer needs, stay attune to the tactics of their competitors, and keep abreast with changing societal cognition and attitude.

Higher education in Taiwan has become prevalent. Confronted with peer competition where others have similar diplomas of higher education, besides having a higher education, students desire diplomas that are valuable and unique so that they can smoothly connect with the job market upon graduation. Therefore, maintaining personal competitiveness is an important issue that students must confront in their pursuit of

higher education. As such, the planning of one's higher education experience is an important task for those seeking higher education enrollment and learning, and thus the choice of school is also significant.

Based on past research, McDonald (1996) proposed combining financial and marketing perspectives to construct a model of customer lifetime value. In expanding the customer lifetime value model, two non-financial factors were added, namely core relationship and extended relationship. Core relationship includes elements of use and identification, where elements of use refers to the strength and time of corporate and customer relationship; and identification refers to the degree of customer promise and emotional involvement. On the other hand, extended relationship includes product commercialization and word of mouth, where commercialization refers to the effect of marketing tools on customer ability to buy; and word of mouth refers to the degree to which others become designated customers through recommendation. This research used the four variables introduced by McDonald (1996) to examine customer lifetime value, namely usage factor, fan identification, product merchandising and word of mouth to evaluate the four dimensions of customer lifetime value of students.

MATERIAL AND METHODS

Using students from institutes of higher education as subjects, this research viewed college students as customers to determine how the external variables of brand image and the mediating variable of satisfaction affected the students' process of college selection. Based on literature review, this research proposed brand
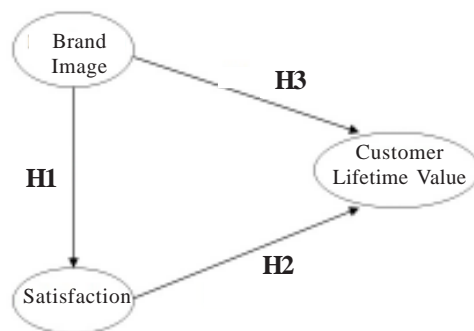

Fig. 1. Research framework

image, satisfaction toward school and lifetime value as relevant models in student selection of schools. Figure 1 shows the research framework.

Hypotheses

The research hypotheses are based on theoretical inferences in literature review, and tested through data analysis. The hypotheses were consistent with research goal, literature review and research framework, and hypotheses regarding the relationship among the various concepts were respectively delineated as shown below, and tested:

H1: Brand image has significant effect on satisfaction.

H2: Satisfaction has significant effect on customer lifetime value.

H3: Brand image has significant effect on customer lifetime value.

Subjects and Procedure

Using a questionnaire survey method, this research aimed to determine the effect of brand image on school satisfaction and customer lifetime value in students' choice of institute of higher education, and hence the subjects were limited to college students in Taiwan. A total of 300 questionnaires were sent out in August 2011, and 295 responses were collected, representing a return rate of 93%. After coding, 270 questionnaires were found to be valid, representing an effective return rate of 90%.

Statistical Analysis

Statistical analysis was conducted using SPSS12.0 and AMOS 7.0. In addition to basic multivariate statistical analysis, the SEM was chosen as the most appropriate model for verifying the impact and significance of the variables in this research framework. The SEM was also used to determine the cause-effect relationship among brand image, satisfaction and customer lifetime value.

Sample Analysis

In the valid sample, 152 persons were female, representing 56.2% of the subject population; 162 were 20 years old, representing 60.0%; 154

were from State colleges, representing 57%; 176 were from general/ integrated colleges, representing 65.0%; 202 were full-time students, representing 74.8%; 206 were in their sophomore year, representing 76.2%, and 192 were enrolled in their current school through joint entrance recruitment, representing 71.1% of the subject population.

RESULTS

Measurement Model Analysis

Using AMOS software for data analysis, this researched applied a two-step approach indicated by Williams and Hazer (1986) and Anderson and Gerbing (1988). Reliability and validity were first tested using factor analysis before conducting SEM analysis. Table 1 shows that 11 latent variables exceeded the 0.6 criteria for reliability, with Cronbach's α ranging from 0.683~0.852 (Cronbach et al. 1972) while structural reliability also exceed the 0.6 criteria, with values ranging from 0.625~0.853 (Bagozzi and Yi 1988), thereby indicating internal consistency among the latent variables. Furthermore, convergent validity analysis indicated that the various indices showed no negative measurement deviation. Their factor loading ranged from 0.540-0.923, and achieved 0.001 significance level (t>3.27), thereby indicating excellent convergent validity.

Discriminant validity was distinguished from convergent validity by capturing the average variance extracted (AVE) in the latent variable. The average variance extracted measures the average latent variance explained in the observed latent variables. Therefore the higher the average variance extracted, the higher the convergent validity and discriminant validity of the latent variables. Fornell and Larcker (1981) proposed an AVE criterion of more than 0.5. As shown in Table 2, the AVE value of each variable dimension is greater than 0.5, thereby indicating convergent and discriminant validity in the research.

Structural Models Test and Hypotheses Testing

Figure 2 shows the path diagram of the research framework to analyze the goodness-of-fit of the model and test the hypotheses. Using AMOS statistical analysis software, SEM was constructed to analyze the structural model. The test was conducted in two stages. In Stage 1, the research framework was tested to determine the overall appropriateness of the theoretical structure. In Stage 2, the research hypotheses were tested by determining the effects of latent variables and their causal relationship within the structure.

Structural Model Test

The fit criterion of the overall model is used to determine whether the theoretical model could explain the observed data, or whether a discrepancy exists between the theoretical model and observed data (Anderson and Gerbing 1988). Therefore, to determine the level of fit in the model, this study applied evaluation indicators proposed by Bagozzi and Yi (1988), such as χ^2 value, goodness-of -fit index (GFI), adjusted goodness of fit index (AGFI), incremental fit index (IFI), comparative fit index (CFI), root mean square residual (RMR), standardized root mean square residual (SRMR) and root mean square error of approximation (RMSEA).

Table 3 shows the indicators of the overall appropriateness of the model, where the GFI value is 0.942 and the AGFI value is 0.908. Rules of thumb and inferences indicated that the greater than 0.9 GFI value in this model means that the overall goodness-of-fit in this research was appropriate. The RMR value was 0.026, the SRMR value was 0.048 and the RMSEA value was 0.045, where the smaller the value (optimal value <0.05), the better the overall research model. Moreover, the degrees of freedom of chi-square distribution was 1.824 (<5), which was within acceptable level (Bagozzi and Yi 1988).

The expected cross-validation index (ECVI) value was 0.321, which was smaller than the ECVI values of the saturated model (0.480) and the independent model (4.553), respectively, hence indicating that the research model was a reasonable theoretical model. In other words, the questionnaire survey reasonably explained the causal relationship among the research variables. Most of the goodness-of-fit indicators in this study were within acceptable evaluation criteria, thus indicating that the data obtained in this study supported the theoretical model.

Table 1: SEM analysis

Dimension	Measurement item	Loading	á-value	Structural reliability
Brand Image	Functionality		0.852	0.853
	Excellent teacher resource	0.792*		
	Excellent educational facilities	0.762*		
	Excellent course curriculum	0.838*		
	Experiential		0.710	0.709
	Favorable location	0.764*		
	Convenient living	0.703*		
	Symbolism		0.804	0.815
	Positive reputation	0.810*		
	Prominent	0.923*		
Satisfaction	Service efficiency		0.825	0.815
	Office of academic affairs	0.864*		
	Office of student affairs	0.843*		
	Office of general affairs	0.805*		
	Office of job placement office	0.728*		
	Office of physical education	0.526*		
	Various department offices	0.637*		
	Quality of school courses		0.767	0.762
	Foreign language training	0.721*		
	Information technology education	0.816*		
	Career training planning	0.625*		
	Quality of department courses		0.768	0.757
	Enthusiasm of teachers	0.741*		
	Professional ability of teachers	0.807*		
	Hardware facilities		0.805	0.809
	Volume of books in library	0.732*		
	Audio-visual facility in library	0.851*		
	Computer facility and volume	0.774*		
	Sports and recreational facilities	0.536*		
Lifetime Value	Volume of customer use		0.726	0.723
	Loyalty will sustain over a long period	0.704*		
	Will recommend this school to others	0.817*		
	Confirmation of loyalty		0.750	0.754
	Have special bond with other students in this school	0.651*		
	Proud of being a student at this school	0.843*		
	Affirm the students and staff at this school	0.674*		
	Commercialization		0.802	0.808
	Enrolled in the courses in this school through because of promotion by relevant personnel	0.783*		
	Family and friends became students at this school through recommendation	0.864*		
	Word of mouth		0.683	0.625
	Happy to share experiences at this school with others	0.792*		
	Advertisement and promotions are very important to the brand image of this school	0.540*		

*p<0.001

Table 2: Average variance extracted of each variable dimension

Variable	Dimension	AVE
Brand Image	Functionality	0.662
	Performance	0.557
	Symbolism	0.785
Satisfaction	Service efficiency	0.569
	Quality of school courses	0.570
	Quality of department courses	0.656
	Hardware facilities	0.573
Customer	Volume of customer use	0.596
Lifetime Value	Confirmation of loyalty	0.582
	Commercialization	0.671
	Word of mouth	0.562

Causal Relationship Test

Using the Method of Maximum Likelihood (MLE) to analysis the pathway, the research hypotheses were tested for significance level. Table 4 shows the results of the hypotheses tests. In addition to achieving significant t-value for each pathway coefficient, each hypothetical pathway was set at 0 to compare the $\Delta\chi^2$ between the constrained and unconstrained models (that is, the theoretical model). To determine whether the pathways were consistent with the hypotheses, if $\Delta\chi^2$ reached significance level, then the null hypothesis is rejected. Figure 3
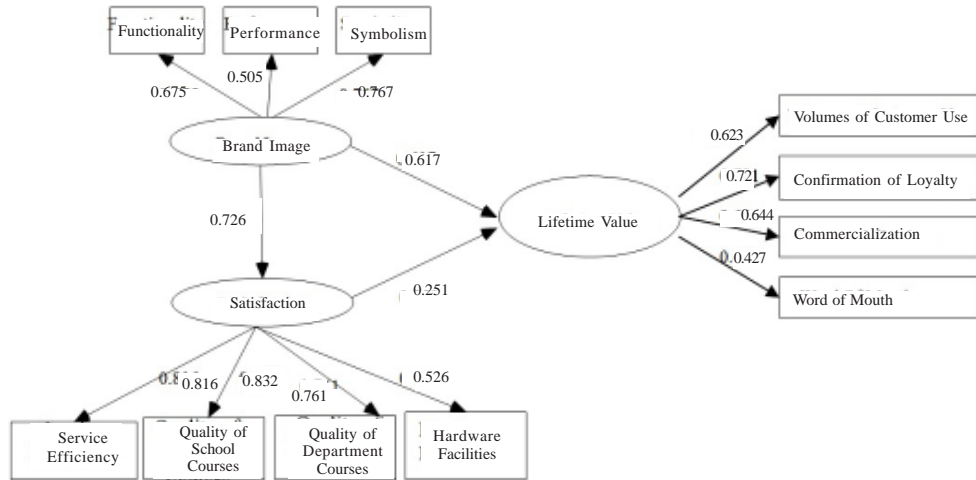
Fig. 2. Structural model of the research

Table 3: Overall model goodness-of-fit indicators

Goodness-of-fit measurements	Results of testing	Model meets fit criteria
χ^2	449.800 (P=.000)	No
χ^2	1.824	Yes
GFI	0.942	Yes
RMR	0.026	Yes
RMSEA	0.045	Yes
AGFI	0.908	Yes
SRMR	0.480	Yes

shows that the hypotheses were supported by all three pathways.

Table 4 shows that the hypothesized pathway value for brand image and satisfaction is 0.726 and $\Delta\chi^2$ reached 42.046 (p<0.001), indicating significance level. This means that brand image had significant positive effect on satisfaction; in other words, brand image can increase satisfaction toward the school. Hence, H1: Brand image has significant positive effect on satisfaction was supported.

The hypothesized pathway value for brand image and customer lifetime value is 0.617 and $\Delta\chi^2$ reached 6.624 (p<0.001), indicating significance level. This means that brand image had
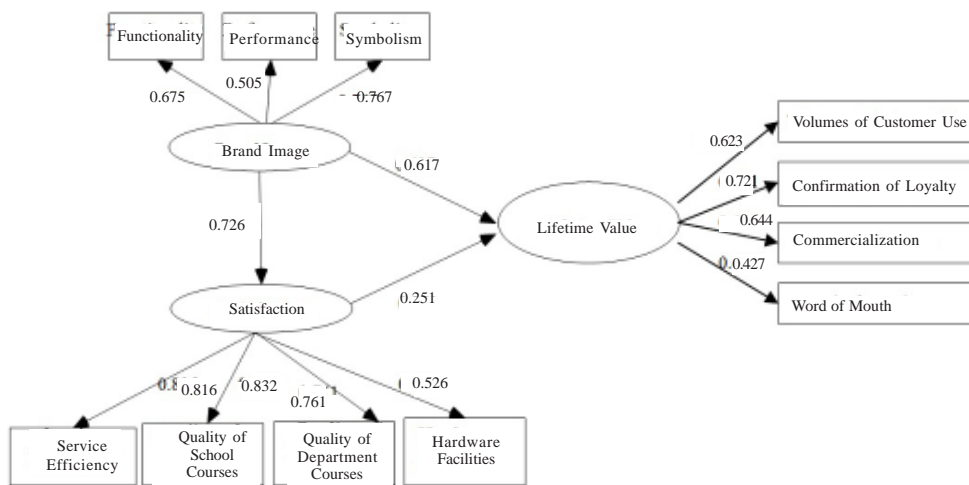

Fig. 3. Linear structural model

significant positive effect on customer lifetime value; in other words, brand image can increase customer lifetime value. Hence, H2: Brand image has significant positive effect on customer lifetime value was supported. The hypothesized pathway value for satisfaction and customer lifetime value is 0.251 and $\Delta\chi^2$ reached 164.328 (p<0.01), indicating significance level. This means that satisfaction had significant positive effect on customer lifetime value. Hence, H3: Satisfaction has significant positive effect on customer lifetime value was supported.

Analysis results of the effect of each construct can be classified into direct effect, indirect effect and total effect; herein, total effect refers to the sum of direct and indirect effect. Table 5 shows that the pathway value for the indirect effect of brand image on customer lifetime value is 0.178, and for direct effect, 0.617. Hence, the total effect is 0.795. Therefore, satisfaction had indirect effect on brand image and customer lifetime value.

DISCUSSION

The research showed that the brand image that college students had of their schools can be divided into three dimensions, namely functionality, performance and symbolism. This means that these three dimensions of school brand image can affect the satisfaction of college students toward their school. In this study, this satisfaction toward the school, which would subsequently affect customer lifetime value, was divided into four major measurement items, namely service efficiency, quality of school course,

quality of department courses and satisfaction. In the overall research framework, the various fit indicators showed that the hypothesized model had an excellent goodness-of-fit. Moreover, the p-value regression coefficients for the pathway relationship among the variables reached significance level, indicating that the three research hypotheses were supported. In addition, satisfaction was found to be a mediating variable between brand image and customer lifetime value (Krishnan et al. 2013).

This research found that a significant positive relationship existed between brand image and satisfaction, thereby supporting Hypothesis 1. This means that a better school brand image would positively affect customer satisfaction. Thus this is one reason why institutes of higher education should strive to maintain their brand image since the better the brand image, the higher the customer satisfaction, and subsequently the more benefits to the schools such as increase in recruitment, increase in enrollment and increase in student satisfaction toward the school. Thus this has been an important goal for Taiwan's institutes of higher education to increase student willingness to enroll. Therefore, institutes of higher education should take the initiative to establish an excellent brand image, explore both positive and negative information in the environment that could affect brand image, and manage these influences on customer brand perception in order to become distinctive among a fiercely competitive market of many common products (Duncan and Caywood 1996). Thus in this research, if the satisfaction of enrolled students toward their campus increased

Table 4: Research hypotheses and verification outcome

Hypothesized pathway	Hypothesizes relationship	Pathway value	$\ddot{A}\dot{\div}^2$ after eliminating path	Tested hypothesis	Hypothesis result
Brand image→ Satisfaction	Positive	0.726**	42.046***	H1	Supported
Brand image→ Customer lifetime value	Positive	0.617**	6.624***	H2	Supported
Satisfaction→ Customer lifetime value	Positive	0.251*	164.328*	H3	Supported

* p<0.01, **p<0.001

Table 5: Effect among latent variables in the overall sample

Hypothesized pathway	Direct effect	Indirect effect	Total effect
Brand image→Satisfaction	0.726		0.726
Brand image→Customer lifetime value	0.617	0.178	0.795
Satisfaction→Customer lifetime value	0.251		0.251

due to institutes of higher education actively strengthening their brand image, then the perspective of past scholars that brand image positively affects satisfaction would be further verified.

The coefficient value between school satisfaction and customer lifetime value showed that the various aspects of student satisfaction toward the school positively affected their sense of customer lifetime value and the significance of their diploma. Kotler (2000) pointed out that customer lifetime value is where customers continue to purchase goods or services from a particular company, thereby resulting in present net value for the company. Therefore, institutes of higher education should actively create and enhance their campus and learning environment to increase student customer satisfaction to capture their loyalty toward the school, motivate them to complete their degree at the same school, and recommend the school to family and friends, thereby bringing economic benefit to the institute.

The research found that the positive effect of brand image on customer lifetime value reached significance level, indicating that the brand image of the school was significantly related to the customer lifetime value of the students. In other words, the higher the identification with overall brand image, the higher the willingness of the students to enroll; likewise, the lower the identification with overall brand image, the lower the willingness of the students to enroll. Therefore, the overall brand image of schools was highly related to the customer lifetime value of students. Hence schools should maintain and strengthen their brand image to increase student satisfaction. More importantly, schools should safeguard the customer lifetime value of the diploma conferred to students to capture student loyalty toward the school and further enhance the brand image of the school.

The current higher education market in Taiwan is fiercely competitive. Only by commanding student needs and understanding the mentality of college students can schools survive such a competitive educational market. Thus this research recommended that institutes of higher education strengthen student knowledge of schools, such as through presentations, college fairs, promotional materials and media disseminations and related news reports to enhance student evaluation of the schools, and accordingly

develop favorable brand image. Nevertheless, to prevent a sense of gap in value and thereby weakening student satisfaction in the pursuit of brand, schools should not exaggerate their services. According to educational marketing, to increase a sense of value and satisfaction, schools should provide more diversified services to students in addition to high quality education to increase student satisfaction toward the outcome of their vested interest. Therefore, this research showed that only by persistently striving toward quality in higher education to increase student satisfaction toward the campus can schools increase their competitiveness and sustain their operations.

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