Environment and Service Quality Effect on Brand Value and Attachment in Online Education: Focused on Chinese Education Market

Won-Hyun SO · Ha-Kyun KIM†

(The Academy of Korean Studies · †Pukyong National University)

온라인교육에서 환경과 서비스품질이 브랜드가치와 애착에 미치는 영향: 중국교육시장을 중심으로

소원현 · 김하균†

(한국학중앙연구원 · †부경대학교)

Abstract

With rapid changes in the IT industry, the perception of online education as an auxiliary means of offline education has also changed. Online education is becoming an alternative to offline education, and online education sites are becoming more diverse and specialized. Together with such socioeconomic changes and the rapid growth of the IT industry, online education is also growing and spreading. The role of online education should be emphasized since it can help provide everyone with an equal opportunity for education.

This study surveyed Chinese users of online education services. Based on previous studies, a research model on the effect of education environment and service quality of education brand value and attachment in online education was developed, where basic education facilities represent education environment and content, communication, and class satisfaction represent education service quality. SPSS22.0 was used for basics statistics while Smart PLS2.0 was utilized for reliability, validity, and hypothesis tests. Smart PLS2.0 is a statistical software specialized in the structural equation method of partial least square. The results of this study can be summarized as follows. First, basic education facilities had a significant effect on education brand value. Second, education environment significantly affected education brand value. Third, content quality had no significant impact on education brand value. Fourth, communication did not significantly affect education brand value. Fifth, class satisfaction significantly affected education brand value. Sixth, education brand value had a significant effect on education attachment.

Key words : Basic facilities, Class environment, Content, Communication, Class satisfaction, Brand value

Ⅰ. Introduction

With the rapidly developing IT industry, the perception of online education as a means of supporting offline education has also changed. Online education is becoming an alternative to offline education and online education sites are becoming more diverse and specialized. It is a global trend to stress the importance of human resources that is producing knowledge and

† Corresponding author : 051-629-5736, kimhk@pknu.ac.kr

information. Along with such socioeconomic trends and the rapid growth of the IT industry, online education is also rapidly growing and spreading. The role of online education should be emphasized since it can contribute to promoting equal education opportunity. With the trend of globalization and the development of information/communication, online education is expected to grow and spread both in developing and developed countries as a crucial education system.

With the rapid expansion of Internet infrastructure, online education has attracted attention as a new educational model in China. Online education continues to develop along with school, Internet, radio, and TV education. Since the current educational condition and environment cannot meet the demand for education in China, online education is expected to become a new educational model. Due to the rapid development of high-speed Internet, world-class educational enthusiasm, and strong will for self-development, the online education market in China is expected to continue growing. The expansion of online education caused by these trends shows that online education has great potential not only as an educational alternative but also as a promising industry, and that it is a resource that can create educational value and added new economic value. Online education has various definitions. Kang and Park (2001) regarded online education as all learning activities provided by means of engineering for teaching and learning in a learning environment formed by a multimedia information network. You (2001) defined online education as learning activities where an individual transforms information about knowledge needed for himself through active information collection, selection, editing, processing, and evaluation, and share it with other learners.

Although there are some inconsistencies in the definition of online education among scholars, they agree with the idea that online education is based on Internet technology and that the educational paradigm shifts from teacher-centered education to a learner-centered one in online education.

This study empirically analyzes the effect of education environment and service quality on education brand value and attachment in the Chinese online education market. In order to identify the relationships between relevant factors mentioned above, a structural equation model was developed. For the investigation into the effect of education environment and service quality of education attachment mediated by education brand value, the following research objectives were established. First, this study examines education environment, service quality, brand value, and attachment through literature review. Second, this study identifies the effect of education environment and service quality of education brand value and the relationship between education brand value and education attachment through empirical analysis. Finally, based on the empirical findings about online education environment, service quality, brand value, and attachment in the Chinese online education market, this study aims to provide implications to educational institutions planning to participate in the online education business in China.

II. Theoretical Background

1. Online Education Environment

There are many studies on the education environment. The education environment is generally represented by education facilities and

class environment. The education facilities in online education refer to education materials and convenience. Graves (1993) suggested the identity of school facilities, harmony with surroundings, personal space, and appropriate school size as important factors when considering basic school facilities. The class environment can be said as the sum of the influencing factors that can affect students. The same is true of the online class environment. The problems of the existing online class environment are gradually being resolved as the online environment develops. Keller (2001) expressed the education environment as a cultural complex composed of a myriad of personalities in colleges and interactions between traditional culture and colleges. When the class environment supports the learning atmosphere of educational institutions, students feel happiness and actively participate in learning activities.

2. Online Education Service Quality

When evaluating online education service, service cost, content, and management are major factors that should be examined. Lee (2009) divided education into content, communication, and class satisfaction by applying Total Quality Management (TQM) to education. In terms of online education, she emphasized the importance of content. As for communication, there are various definitions. It is defined communication as a process in which one understands others and lets others understand him/herself as well as a process of exchanging information(Jung and Ha, 2012; So and Kim, 2017). Shin (2012) said that the basic purpose of communication is improving the thinking and expression ability of students. Class satisfaction refers to the degree to which students feel satisfied

with class. Miller (1984) reported that class satisfaction was related to students' increased motivation as well as the active exploration of the cause of each problem and the provision of appropriate solutions. He stressed the importance of improving the quality of education to increase class satisfaction. Kim (2011) defined class satisfaction as a degree of perceived satisfaction with learning and a degree of the provision of learning needed for students.

3. Online Education Brand Value

Brand values can be called brand image or brand asset, and education brand is in the same context with school brand. Education brand value to provide services under the goal of nurturing human resources. Even after graduation, education brand can determine personal careers, and thus, it becomes an important standard for selecting a school. School brand provides services with an objective of cultivating human resources, which can affect the evaluation of one's personal career (Deming, 2006). Robertson (2002) found that people consider both college brand and graduate school brand when choosing a business school. Schoenfeld and Bruce (2005) defined education brand value as a standard for the selection of a business school, consisting of various factors including programs, faculty reputation, international recognition, college position, graduate students' career, college rank, curriculum, regional reputation, graduate students' reputation, diverse experience of students and faculty, college tuition, and scholarship benefits.

4. Education Attachment

Attachment is a psychological concept, which

refers to a special feeling of bonding with an individual and a specific target. From a psychological perspective, this attachment is generally formed into parents during infancy, but its target can gradually be expanded on others, such as friends, the opposite sex, and pets (Bowlby, 1969). In addition, people feel nervous when being separated from the target of their attachment while they feel a sense of stability when being together with the target. The range of conceptual application of this attachment can be expanded on specific products, brands, celebrities, and facilities beyond human beings. Brand attachment is a key factor of maintaining and improving consumer response. In brand attachment studies, the target of attachment was expanded on education brand (Jeong, 2016; Choi, 2014; Lee, 2014). Education attachment refers to overall trust

in education. Emotional attachment to education has an impact on maintaining trust in the education brand.

Ⅲ. Research Design

1. Research Model

This study focuses on the relationships of online education environment, education service quality, education brand value, and education attachment in the Chinese online education market. Factors determining education brand value were divided into education environment (basic education facilities and class environment) and education service quality (content, communication, and class satisfaction). As can be seen in [Fig. 1], a research model was developed based on previous studies.
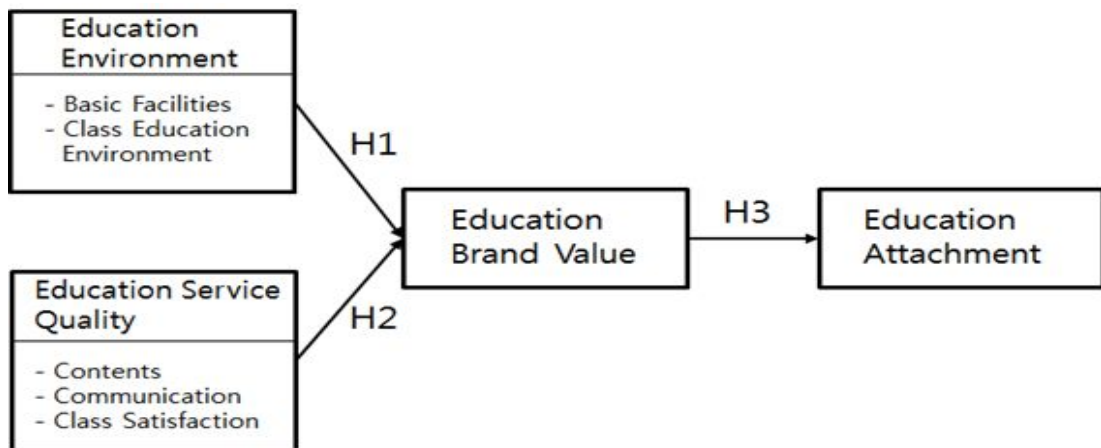
[Fig. 1] Research Model

2. Research Hypotheses

2.1 The Relationship between Education Environment and Education Brand Value

Lee (2009) reported that the education environment had a significant effect on school

image. In Lee's study, basic education facilities, subsidiary education facilities, class environment, locational environment, and educational environment were used as measurement variables. Bruce (2006) found that when the education environment actively

supports the learning atmosphere, learners were more likely to feel happier and actively participate in educational activities. Based on these previous studies, the following research hypotheses were established.

Hypothesis 1: The educational environment has a positive impact on education brand value in the Chinese online education market.

    H1-1: Basic education facilities positively affects education brand value.
    H1-2: The class environment positively affects education brand value.

2.2 Relationship between Education Service Quality and Education Brand Value

The quality of education services, an antecedent of brand value, affects brand image (Park et al., 2002; Cronin & Taylor, 1992). Lee et al. (2002) proposed that education service is a determinant of education brand image. Based on these previous findings, the following hypotheses about the relationship between education service quality and education brand value were formulated.

Hypothesis 2: Education service quality has a positive impact on education brand value in the Chinese online education market.

    H2-1: Content quality positively affects education brand value.
    H2-2: Communication positively affects education brand value.
    H2-3: Class satisfaction positively affects education brand value.

2.3. Relationship between Education Brand Value and Education Attachment

Grisaffe and Nguyen (2011) identified satisfaction, value, differentiation, and marketing-related factors as attachment factors. Hypotheses about the relationship between education brand value and education attachment were established as follows.

Hypothesis 3: Education brand value has a positive impact on education attachment in the Chinese online education market.

3. Operational Definition of Variables

Previous survey questions were revised and supplemented to examine the relationships among education environment, education service quality, education brand value, and education attachment in this study. A total of 26 questions were asked on the Likert 7-point scale. <Table 1> shows the operational definition of variables and the structure of survey questions.

Ⅳ. Empirical Analysis and Results

1. Data Collection and Sample Characteristics

Chinese users of online education services were surveyed from April 5 to April 30, 2016. A total of 200 questionnaires were collected via mail and e-mail as well as in person. After excluding an incomplete questionnaire and a questionnaire from a respondent with almost no experience of online education services, data onto 198 respondents were analyzed. The demographic characteristics of survey respondents were summarized in <Table 2>.

<Table 1> Operational Definition and Measurement Items

Variable	Operational Definition	Questionnaire Details
Basic Education Facilities	Education equipment and materials (such as copiers and printers) and Internet access	-Convenience of Internet facilities -Convenience of basic education facilities -Fast Internet service
Class Education Environment	Education environment, such as teaching, curriculum, and educational conditions	-Internet class atmosphere -Internet learning resource management -Richness of content -Internet accessibility
Content	Internet-based education content on the computer screen	-Content cost -Self-directed learning -Content -Content management
Communication	Ability to communicate with others	-Accuracy of self-expression -Unification of communication -Diversity of communication -Selection of one communication method among many
Class Satisfaction	The degree to which one is satisfied	-Appropriate number of classes -Use of the right language in class -Identification of students' level and enthusiastic teaching -Appropriate allocation of assignments
Education Brand Value	The overall online education brand value	-Local reputation -Excellent content -Graduates -Excellent facilities
Education Attachment	Special feeling of bonding between an individual and an education group	-Feeling good when learning -Affection for education -Special feeling compared to other education

<Table 2> Sample Demographic Characteristics (n=250)

Classification		Number	%
Gender	Male	85	43
	Female	113	57
Age	20 - 29	93	25
	30 − 39	49	17
	40 − 49	34	11
	50 or older	22	6
Education	Middle school	12	18
	High school	36	28
	Junior college	56	31
	College	61	17
	Graduate school	33	12
Employment	Company	24	12
	Self-employed	23	12
	Civil servant	21	11
	Specialist	34	17
	Student	96	48

2. Data Analysis

Frequency analysis was conducted to identify the general characteristics of the sample, while reliability and validity analyses were conducted to verify the validity of survey questions. The internal consistency of survey questions was tested for Cronbach's α, composite reliability (CR), and average variance extracted (AVE). As can be seen in <Table 3>, since Cronbach's α and CR were higher than 0.7 and AVE was higher than 0.5, reliability and convergent validity were verified. As shown in <Table 4>, since the square root of AVE were greater than the correlation coefficients, discriminant validity was also verified.

<Table 3> Reliability and Internal Consistency

Variable	Factors	C. R.	Cronbach's α	AVE
Basic Education Facilities	.577	.794	.794	.659
	.860			
	.850			
	.702			
Class Environment	.843	.879	.816	.646
	.827			
	.778			
	.780			
Content Quality	.813	.822	.722	.546
	.869			
	.843			
	.817			
Communication	.743	.799	.625	.571
	.853			
	.857			
	849			
Class Satisfaction	.877	.882	.823	.652
	.742			
Online Education Brand	.739	902	856	698
	.848			
	.833			
	.790			
Education Attachment	.743	.903	.857	.700
	.778			
	.745			

<Table 4> Correlation and Discriminant Validity

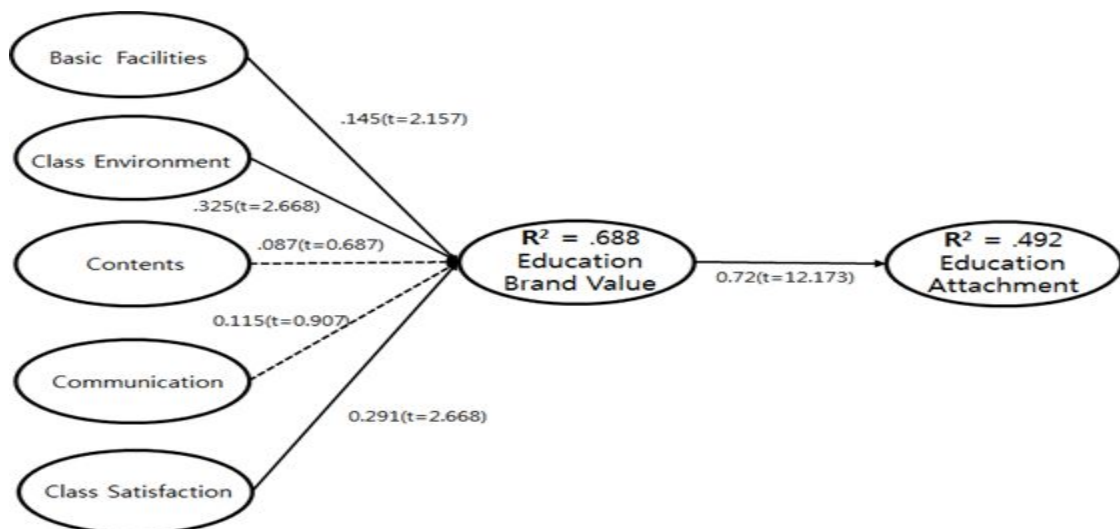|	AVE	1	2	3	4	5	6	7
Basic Facilities	0.659	0.812						
Class Environment	0.645	0.552	0.803					
Content Quality	0.546	0.467	0.697	0.739				
Communication	0.570	0.457	0.661	0.664	0.755			
Class Satisfaction	0.651	0.560	0.790	0.789	0.665	0.807		
Online Education Brand	0.701	0.576	0.549	0.685	0.645	0.771	0.834	
Education Attachment	0.698	0.464	0.642	0.580	0.576	0.697	0.702	0.835

3. Verification of Research Model

Smart PLS 2.0 was used to verify the research model. Using the research model, the path coefficients between variables and the coefficients of determination (R^2) were derived. Since the coefficients of determination of education brand value(0.688) and education attachment(0.492) were greater than 0.26, the goodness of fit of this model was high. [Fig. 2] shows coefficient, t-value and R^2.

Hypothesis 1-1, basic education facilities positively affect education brand value, was accepted (β=0.145, t=2.157, p<0.05). Basic education facilities are not universal in China, a large and heavily populated country. In particular, there is a big difference in Internet-related facilities among educational institutions.Since the lack of basic online education facilities is prevalent throughout the country, the provision of basic education facilities can play an important role in increasing education brand value. Hypothesis 1-2, the class environment positively affects education brand value, was accepted (β=0.325, t=2.668,

p<0.05). This shows that a good class environment in online education can increase education brand value.

Hypothesis 2-1, content quality positively affects education brand value, was rejected (β=0.087, t=0.687, p>0.05), and the reasons for this rejection are as follows. First, it is relatively difficult to protect copyright in the Chinese online environment compared to other countries because there is no legal safeguard to protect the developed content as assets in China. Since only very little online education content exists, people are unfamiliar with or uninterested in online education. Even those who have experience of online education evaluate it unfavorably. Second, there is an absolute lack of content. The Chinese education market has not established basic online content yet. The speed of Internet services is low due to the lack of Internet facilities and online lecture content is also not publicized much due to the absolute lack of content. Hypothesis 2-2, communication positively affects education brand value, was rejected (β=0.115, t=0.970, p>0.05).

[Fig. 2] Research Model

The reasons for this rejection of the impact on communication with education brand value are as follows. First, communication between students and teachers is less effective in the online environment, that is, communication is less influential in Internet lectures. Since Internet lectures are provided without contact with lecturers or teachers, good textbooks for online classes usually contain sufficient information so that students can study relying on Internet lectures and textbooks. In the online environment, lectures are generally unilateral without requiring any communication. Hypothesis 2-3, class satisfaction positively affects education brand value, was accepted (β=0.291, t=2.143, p<0.05). This suggests that class satisfaction can increase education brand value.

Hypothesis 3, education brand value has a supported (β=0.702, t=12.173, p<0.05). Taking pride in education brand value means the individual has a passion for education.

Ⅴ. Conclusion

After reviewing previous studies on online education environment, education services quality, education brand value, and education attachment, this study examined the impact on online education environment and education service quality on education brand value as well as the effect of education brand value on education attachment.

The results of this study can be summarized as follows. First, hypothesis 1-1 about the relationship between basic education facilities an education brand value was accepted. Second, hypothesis 1-2 about the relationship between the class environment and education brand value was accepted. Third, hypothesis 2-1 about the relationship between content quality and education brand value was rejected. Fourth, hypothesis 2-2 about the relationship between communication and education brand value was rejected. Fifth, hypothesis 2-3 about the relationship between class satisfaction and education brand value was accepted. Finally, hypothesis 3 about the relationship between education brand value and education attachment was accepted.

The findings of this study about online education in China can provide the following implications. First, it is desirable to establish differentiated marketing strategies taking into account education brand value when expanding the online education market in the future of China. It is necessary to actively reflect the needs of people that want online education to increase brand value. Second, in Chinese online education, basic education facilities, class environment, and class satisfaction positively affected education brand value. Online education content should be developed based on this finding. Online education institutions should make continuous efforts to improve education content as well as to increase education brand value.

This study developed a new research model on the relationships among online education environment, education service quality, education brand value, and education attachment in China and conducted empirical analysis. This study is significant in that it carried out an empirical analysis of the Chinese online education market despite the lack of theoretical background on online education brand value and education attachment. This study is also significant in that it can provide help in establishing online education strategies by identifying key factors affecting online education brand value.

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