

The Relationship between Online Academic Credit Bank Learners' Satisfaction and Demographic Variables

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Abstract

Background/Objectives: The purpose of this study is to estimate the causal relationship between online academic credit bank learners' satisfaction and the demographic variables to understand the credit bank learners and based on this, to provide basic information on establishment of marketing strategies and suggestions for policy. **Methods/Statistical Analysis:** Ordered Probit model was used for the analysis of satisfaction. The satisfaction items were classified into four categories (quality of educators, curriculum, cost of education, and overall satisfaction). **Findings:** The status of being married was determined to have positive influence with 1% significance each for quality of educators, curriculum, cost of education, and overall satisfaction. Income was in a significant relationship of influence in regards to satisfaction associated with curriculum, cost of education. **Improvements/Applications:** In terms of overall satisfaction, educational background and age variables were determined to have a statistically significant relationship of influence.

Keywords: Learner, Online Academic Credit Bank System, Ordered Probit Model, Satisfaction

1. Introduction

Based on Regulations regarding Academic bank credit system involves a system which enables various forms of learning and qualifications to be acknowledged as academic credits, and when a set criteria is achieved through cumulative credits, a degree is bestowed¹. In this study, online credit bank system refers to academic bank credit distance learning using a computer. Distance education have been defined as education delivered at school and various forms of noncontiguous instruction and learning which encompass all forms of education; it is also defined as non-sustained education which does not provide immediate supervision from the off-site educators of the institution delivering the instruction². With the development of mass media, the term distance education has been used synonymously with various terms such as e-Learning, online education, web-based training, cyber education.

There were 820,685 academic credit bank learners in 2012 enrolled in associate and bachelor degree programs online and offline. Cumulative number of those who received degrees were 349,288 people (number of degree holders according to the Minister of Education), and 25,396 people (number of degree holders according to the University chairman). Despite the quantitative increase in the number of students, research regarding consumers was determined to be very limited due to research results such as simple qualitative estimations and frequency analysis which occupy much of the research data examining the learners from consumer perspective both domestic and international. Research on satisfaction in regard to credit bank education reflects the customer's situation in relation to individual learning styles and status of progress thus it can serve as the basic data that can be reflected in the policy of government agencies such as the Ministry of Education and National Institute for Lifelong Learning. Moreover, it can serve as an important strategic resource for marketing which help to understand the learners and

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potential future learners through the research on learner satisfaction regarding organization which recruit and manage the learners. Based on such research background information, the purpose of this study is to estimate the relationship between the online academic credit bank learners' satisfaction and demographic variables. Through the results of the analysis, bank credit learners hereafter will be more fully understood and it is expected that foundational information will be provided regarding the establishment of marketing strategy and suggestions for policy. Furthermore, by breaking away from the traditional learning method, it is expected to help strengthen the competitiveness of the learners enrolled in the academic credit bank system and to explore the future direction of the academic credit bank system in a positive way.

2. Previous Research

In analyzing learner satisfaction regarding distance learning programs³, used categories associated with clarity of evaluation, specialization of the educator, registration, and enrollment. Clarity of evaluation category included class graphics related items, passion and ability of faculty; in the registration and enrollment category, information such as use of the library and ease of computer usage was included. In a study on adult learners on campus and the influential factors on learning⁴, pointed out that there were differences in the perception of the environment according to age. In his research⁵, concluded that learners at university-affiliated continuing education institutions who were at least 30 years of age or older exhibited higher satisfaction with educational purpose, teaching and learning, learning support environment, human relations, and public services than the students under the age of 30; not only that, the satisfaction level was higher depending on educational background in which those with bachelor's degrees showed more satisfaction than those with high school or associate's degrees; also women reported higher satisfaction than men. Additionally, unemployed learners and learners with work experience were reported to have high level of satisfaction. In a study by⁶ which estimated the level of satisfaction of the credit bank system learners, regression analysis was used to analyze demographic variables, background factors of educational institutions (location, credit-granting institutions, credit-granting method, degree-granting institution, lecture facilities). The results of the analysis showed that satisfaction was higher in men than women, those who were at least 30's

showed higher satisfaction than those in their 20's; and for educational institution factor, satisfaction was higher among the learners enrolled in university-affiliated continuing education academic credit bank compared to those who were enrolled in other institutions. In a study by⁷, the analysis was conducted on the factors affecting the satisfaction of distance education students in which the independent variables were selected as factors of student, lecturer, management, and system and overall satisfaction regarding the course was selected as dependent variable. As a result of the analysis, instructor and system quality factors were found to be variables which had influence on the satisfaction with distance education.

3. Research Model and Design

Analysis model used to estimate satisfaction in this study is the ordered probit model. The ordered probit model is a model which can be applied when the dependent variables have a sequence which is not binomial and more than y ($y = 0, 1, 2, 3, 4, 5$). First introduced by⁸, the ordered probit model is represented by explanatory variables, including dependent variables, as discrete variable rank of more than 2, and it is a method for estimating a model in which there exists unequal differences between the ranks⁹. Accordingly, the ordered probit model can be defined as a model which can correct the drawback of the linear regression model which may miscalculate the size of the independent variables and it is a method which can be used when the dependent variables are the same as the Lickert scale¹⁰.

For this study, the survey was conducted on university-affiliated distance continuing education academic credit bank students in Choongnam area from October, 2014 to February 2015 in which a total of 300 questionnaires were collected. However, 243 questionnaires were used for analysis due to the elimination of responses which contained numerous missing values. The questionnaire consisted of demographical characteristics such as gender and age; and to estimate satisfaction, 4 categories of satisfaction (quality of faculty, curriculum, cost of education, and overall satisfaction) were surveyed. Satisfaction was categorized into 4 measurement items which consisted of 5-point Lickert scale each. The independent variables were set as reference variables and 1 and 0 were treated as dummy variables. For example, in case of gender, men were assigned 1, and women were assigned 0 to estimate the influence of men. The age variables were categorized

into those who are at least in their 20's, 30's, 40's and 50's. In terms of educational background, the characteristics of this variable were taken into account in categorizing them into those who hold high school, associates, and bachelor's degrees. To reflect the characteristics of the occupation variable, these were categorized as white-collar, blue-collar, and other (retired, unemployed, housewives, and other occupations).

4. Result

Demographic characteristics of the sample were 16.9% men, 83.1% women; in terms of age group, 20.6% were in their 20's, 30% in their 30's, 36.2% in their 40's, 13.2% in their 50's or older. Also 38.3% were high school diploma holders, 20.2% were associate's degree holders, 36.6% were bachelor's degree holders, and 4.9% were master's degree holders; in terms of types of income, it was shown that 14.8% earned less than 2 million won, 21% earned 2-3 million won, 21% earned 3-4 million won, 17.3% earned 4-5 million won, 26% earned more than 5 million won. It was also found that 69.5% were married, 29.2% were unmarried, and 1.2% other; 17.3% were professional, 12.8% were office workers, 0.8% were technicians or worked in production, 6.6% held service jobs, 7.4% were civil servants and faculty, 4.1% were retired or unemployed, 3.7% were self-employed, 28.4% were housewives, and 9.1% other.

The goodness of fit of the entire model according to the estimation results of Table 2 is determined by means of chi-square based on the likelihood function, and the interpretation of the individual independent variable was achieved through the t-value. Married learners were determined to have statistically positive influence in faculty quality, curriculum, cost of education, and overall satisfaction (1% significance level). For satisfaction with curriculum, income group of 4-5 million won and of 5 million won or higher were shown to have negative influence (10% significance level); thus, the income group of less than 2 million won which was applied as a dummy variable can be interpreted as having a positive influence.

Satisfaction with cost of education also had a negative influence on the income group of 4-5 million won (10% significance level); income group of more than 5 million won at 5% significance level was analyzed to have a negative influence; thus the income group of less than 2 million won which was used as a dummy variable was analyzed as having a positive influence. In regards to overall satisfaction, the married group had a positive influence

Table 1. Variable parameter and descriptive statistics of ordered probit

Category	Variables	Variable parameter	Mean (Standard Deviation)
Dependent variables	Quality of educators regarding instruction	C1	3.555(0.704)
	Curriculum satisfaction	C2	3.592(0.767)
	Cost of education satisfaction	C3	3.588(0.712)
	Overall satisfaction	C4	3.251(0.796)
Explanatory Variables	Gender	Male=1; Female=0	0.168 (0.375)
	Marital status	Married=1; Other=0	0.695 (0.461)
	Educational background	Associate's=1; Other=0	0.201 (0.402)
		Bachelor's/ master's=1; Other=0	0.415 (0.493)
	Age	30's=1; Other=0	0.300 (0.459)
		40's=1; Other=0	0.362 (0.481)
		50's=1; Other=0	0.131 (0.338)
	Occupation	White collar=1; Other=0	0.374 (0.484)
		Blue collar=1; Other=0	0.209 (0.408)
	Income	2~3million won=1; Other=0	0.209 (0.408)
		3~4million won=1; Other=0	0.209 (0.408)
		4~5million won=1; Other=0	0.172 (0.378)
5million won or higher=1; Other=0		0.259 (0.439)	

with significance level of 1%. While the group with learners enrolled in online credit bank system with bachelor's degrees had a negative influence at 5% significance level, the group with high school degrees which had been applied as the dummy variable could be interpreted to have a high overall satisfaction level. Additionally, the age

Table 2. The estimation results of online academic credit bank learners' satisfaction

Variables	Quality of educators	Curriculum	Cost of education	Overall satisfaction
	Coefficient (t-value)	Coefficient (t-value)	Coefficient (t-value)	Coefficient (t-value)
Men	-0.100 (-0.467)	-0.090 (-0.421)	-0.035 (-0.160)	-0.012 (-0.057)
Married	0.680 (2.955)***	0.663 (2.923)***	0.738 (3.158)***	0.646 (2.895)***
Associate's degree	0.094 (0.455)	0.152 (0.743)	0.243 (1.163)	0.011 (0.057)
Bachelor's degree	-0.207 (-1.204)	-0.188 (-1.101)	-0.222 (-1.268)	-0.328 (-1.931)**
30's	-0.155 (-0.589)	-0.159 (-0.611)	-0.176 (-0.661)	-0.392 (-1.513)
40's	-0.113 (-0.406)	-0.334 (-1.205)	-0.288 (-1.017)	-0.361 (-1.318)
50's or older	0.074 (0.237)	-0.231 (-0.738)	-0.200 (-0.624)	-0.550 (-1.781)*
White-collar	0.135 (0.782)	0.141 (0.829)	0.065 (0.374)	0.255 (1.492)
Blue-collar	0.254 (1.173)	0.018 (0.085)	0.109 (0.496)	0.328 (1.533)
2~3million won income	-0.353 (-1.348)	-0.390 (-1.507)	-0.387 (-1.461)	-0.007 (-0.029)
3~4million won income	-0.122 (-0.456)	-0.039 (-0.148)	-0.196 (-0.718)	0.247 (0.934)
4~5million won income	-0.306 (-1.094)	-0.459 (-1.652)*	-0.518 (-1.829)*	0.080 (0.293)
5million won or higher income	-0.333 (-1.353)	-0.439 (-1.792)*	-0.551 (-2.189)**	-0.320 (-1.324)
Constant	2.569 (8.884)***	2.823 (9.915)***	2.869 (9.772)***	2.162 (7.671)***
LLF	-242.852	-258.261	-237.360	-266.695
χ^2	18.820 (P<.000)	20.337 (P<.000)	22.096 (P<.000)	23.978 (P<.000)

*, **, ***each have 10%, 5%, 1% significance level

group of those in their 50's or older had a negative impact at 10% significance level; the age group of learners in their 20's could be interpreted as having high overall satisfaction. In contrast, based on the information inferred from the table 1, gender and occupation variables did not have any influence on the satisfaction regarding online credit bank system. However, marital status, educational level,

age, and income variables had influence on satisfaction which had been classified into 4 categories.

5. Conclusions

In Korea, the new term called “smart learning” is being used to shift the education paradigm to the one based on mobile devices such as Smartphones¹¹. In this study, in order to analyze the satisfaction of the online credit bank learners, demographic variables were used as independent variables to estimate satisfaction associated with online classes in regards to satisfaction with quality of faculty, satisfaction with curriculum, and satisfaction with cost of education, and overall satisfaction with operation. Learner satisfaction regarding the 4 dependent variables are the learners' subjective responses which could vary depending on how they are interpreted; it can be interpreted that the quality of faculty, curriculum, cost of education, and etc. are all comprehensively considered in determining learner satisfaction. When the results which affect satisfaction are considered, the married group compared to the unmarried learners are in a positive relationship of influence in all satisfaction measurement items. It can be inferred through the analysis that college graduates have a negative influence on overall satisfaction with the credit bank system; due to having already experienced four-year college courses, they have a low level of satisfaction with taking the academic credit bank courses after graduation. Many previous studies related to various disciplines report that when customer satisfaction is high, it has positive impact on word-of-mouth intentions, and that there exists intimate relationship between re-visiting and word-of-mouth intentions. In other words, the higher the satisfaction, the better formed the customers attitude regarding quality, resulting in increased possibility of revisiting. Thus, higher customer satisfaction generally has a positive influence on re-visiting. In terms of credit bank system, if the level of quality in each category of learner satisfaction is high, it would become the most basic marketing strategy for maintaining learners and creating sustainable demand. In other words, satisfaction could become an incentive strategy to cause the potential learners and current learners to revisit on their own; and as a consequence actively recommend it to others. Empirical results from the survey enabled derivation of human relationships through the examination of academic credit bank learners' satisfaction. However, domestic and international research regarding academic

credit bank learners are very limited. Therefore, detailed explanation regarding the reasons as to why demographic variables and satisfaction levels are high or low was made possible only through simple inference. Thus, it is expected that this inference will be determined with clarity through further expansion of research in the future.

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