

# What is the motivation of learning and satisfaction level of the academic credit bank system learners?

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**Background/Objectives:** The purpose of this study is to estimate motivation of learning using offline Academic Credit Bank System carried out as part of lifetime education and to assume causal relationships among the motivation of learning, demographic variables and satisfaction levels. **Methods/Statistical analysis:** In the process of analysis, motivation of learners was analysed through factor analysis and variables affecting satisfaction levels of learners, using Academic Credit Bank System, were explored based on ordered Probit. The satisfaction level of learners was divided into four areas, qualitative level of teachers and instructors, education process, education cost and overall satisfaction. **Findings:** Based on the analysis, motivations of learners included factors like ‘familial relationships’, ‘occupational affairs’, ‘pursuit of knowledge’, ‘others’ recommendation, ‘capacity building’, ‘use of leisure time’ and ‘acquisition of degrees and licenses. Qualitative level of teachers and instructors were positively affected by familial relationships, pursuit of knowledge, capacity building and use of leisure time while satisfaction with education courses were positively affected by pursuit of knowledge and capacity building. Also, as for satisfaction with education cost, positive (+) relationships covered those in their 30s, pursuit of knowledge and capacity building. Finally, overall satisfaction positively affected (by those aged in their 30s and 50s or older) familial relationships, pursuit of knowledge, capacity building and use of leisure time. **Improvements/Applications:** Results will be able to be used as basic data by government agencies promoting the Academic Credit Bank System and institutions attended by learners.

**Key words:** *Lifetime Education, Offline Academic Credit Bank System, Motivation of Learning, Satisfaction Level, Ordered Probit Model.*



## Introduction

The Academic Credit Bank System is a system to recognize various types of learning and qualifications attained outside universities as credits and to let learners acquire a degree upon accumulation of such credits and fulfilling certain standards based on the ACT ON RECOGNITION OF CREDITS, ETC. (Act No. 6434 in Korea), which is to materialize an open education society and a lifetime education society (The Korean, n.d). The Academic Credit Bank System (ACBS) can be attended by high school graduates or above if they take a certain course. The system began in March 1998 in Korea. Until 2016, 573,502 associate bachelors and 727,594 bachelors, totalling about 1.3 million, benefited from the system (The National, n.d). The number of education institutes using Academic Credit Bank System includes 131 Lifetime Education Institutes attached to universities, 71 Lifetime Education Institute attached to junior colleges and others; such as private education institutes and vocational training institutes, totalling 457 institutes.

Despite the number of learners using ACBS and quantitative expansion of educational institutes in the form of ACBS, except for simple qualitative research materials or frequency analysis, there are very few research papers covering policy materials or directions for such learners using ACBS or other such agencies. There have been very few researches about motivation of learning and satisfaction level covering ACBS. Motivation of participation in ACBS and satisfaction level reflect individual learning characteristics or status of learners about the progress. Therefore, it can be very basic materials for government agencies such as the Ministry of Education or the National Institute for Lifelong Education in their policy making. Also, institutions recruiting learners can use such a research as an important marketing strategy to understand learners and potential learners. Based on these backgrounds, this study will assume motivation of learning of learners using offline (attendance-based) ACBS and estimate variables including demographic characteristics with an aim to explore which variables affect satisfaction level in relation to ACBS.

Domestic research to understand learners using ACBS as well as their motivation of learning began in the 2000s. Summing up the earlier studies, researches about motivation of learners to take part in Academic Credit Bank System is divided into choice out of recommendation from others or necessity to obtain licenses as well as continued motivation over learning (entry into higher courses and the joy of learning). Inherent motivations, including necessity for learning, will drive learners towards further study and joy of accomplishment. Based on an analysis of (The Korean, n.d) on learners using ACBS, motivation of learning covered entrance into higher education (26.9%), acquisition of degrees (24%), transfer to university (17.7%), acquisition of licenses (11.5%), and self-realization (12.7%). A research conducted by (The Ministry, n.d) covered acquisition of degrees (73.6%), improvement of occupational capacity and professionalism (34.4%),

employment, business setup and acquisition of license (29.4%) and personal refinement (13.4%). (Houle, 1961) divided the motivation into three areas, 'purpose-driven', 'activity-driven' and 'learning-driven'. Based on such classification, (Knowles, 1985) viewed that intrinsic values such as self-development and intrinsic interest were similar to motivation of learning while [6] analysed that extrinsic motivation, other than intrinsic ones, such as employment, improved occupational capacity and acquisition of licenses would develop motivation of learning, which are the same in context. The most recent study by Sagent, (2001), which is contrary to studies at earlier points of time, analysed motivation of learning of ACBS of online lifetime education center. Based on the results from factor analysis, the motivation included “family happiness”, “desire for learning”, “others' recommendation”, “professional development”, “use of leisure time”, “new challenges”, and “admission to higher education institutions”.

## **Materials and Methods**

For analysis of motivation of learning and satisfaction of learners using ACBS, learners of (offline) ACBS of social education institute attached to University A of Chungcheongnam-do and others using ACBS in Seoul and Gyeonggi-do areas were requested to fill a questionnaire. The reason that the questionnaire survey took place in ACBS located in Seoul and metropolitan areas and the system in local areas, was to avoid biased questionnaire surveys that may arise when only one specific geographical area is covered.

### ***Research design and model***

The questionnaire survey took place for two months between September 1 and October 30, 2017 and 250 questionnaires, in total, were returned. Excluding inappropriate questionnaires with a large amount of missing value, 241 questionnaires were used for final analysis. The questionnaire consisted of demographic characteristics such as sex and age as well as measurement items to conduct a factor analysis over motivation of learning and satisfaction with learning. The contents of the questionnaire consisted of four questions about capacity building (self-improvement), six questions related to education of children, seven questions out of consideration that previous school education shall be furthered (literacy development), seven questions pertaining to job advancement, six questions about diversion, four questions about educational advancement, four questions pertaining to urging of others and five questions about capacity building; totalling 43 questions.

The items for factor analysis of motivation of learning were subject to the five-point Likert scale (1=Not at All, 3=So-so, 5=Very Much So) while items pertaining to satisfaction level consisted of qualitative levels of teachers and instructors, education process (quality), education cost and overall satisfaction, covered based on the five-point Likert scale (1=Very

Unsatisfactory, 2=Unsatisfactory, 3=So-so, 4=Satisfactory, 5=Very Satisfactory). Independent variables to explain about dependent variables covered averages out of demographic variables such as sex, education, marital status and income and learning for motivation.

### *Analytic model*

The procedure of analysis included frequency analysis to identify demographic characteristics, followed by factor analysis of motivation of learning, of those using ACBS. Reliability and feasibility between and among variables were verified, reducing variables, removing unnecessary variables and identifying characteristics of variables. Third, in order to analyse the impacts on satisfaction of learners with ACBS, the qualitative level of teachers and instructors working for ACBS, education quality, education cost and satisfaction with overall management were classified and measured. The analytic model to measure satisfaction level was ordered Probit.

The studies on satisfaction level to infer causal relationships between dependent and independent variables have been subjected to a regression model. Regression analysis is easy to use and analysis of results is simple, making it one of the most used research methods. However, one of the various limits applicable to the analysis is that dependent variables are assumed to be discrete interval scale. As for dependent variables to infer binomial questions covering 'Yes' or 'No' without order, Probit model or Logit model will be used for analysis. However, if dependent variables have an order beyond binomial questions ( $y=0, 1, 2, 3, 4, 5$ ), Profit or Logit models will not be appropriate for analysis. Also, there is a limit in regression analysis which recognizes the difference of dependent variable between  $y=0$  and  $y=1$  and between  $y=1$  and  $y=2$  to be the same.

Ordered Probit Model first introduced by Chang and Lee, (2015) will be expressed in discrete order with two or more independent variables including dependent variables. In this method, a model where orders are not equal will be appropriately estimated (Mckelvey and Zavoina, 1975). Therefore, ordered Probit model is a one to supplement the shortage that the size of independent variables covered by linear regression analysis may be mis-understood. It can be defined as a method to be used when dependent variables are sequential multichotomous variables, like the Likert scale (Srorchmann, 2006). In this study, dependent variables to estimate satisfaction level are in the form of the five-point Likert scale and ordered Probit model was assumed by regarding them as ordered scale out of necessity for Log-Likelihood Function (LFF).

## Results and Discussion

In factor analysis of motivation of learning of learners using ACBS, 12 answers that do not satisfy factor discretion (0.5) or do not conform to items classified by factors (satisfaction of intellectual curiosity, desire to help others, desire to meet family's expectation, absence of work at which you are good, new attempts, meeting with new people, boring life, needs for more school education, transfer to university, entry into graduate school, escape from difficulties in reality and lively daily life) were removed and seven factors of Eigen Value 1 or more were extracted. The variance explanation was as high as 70.682% (as shown in table 1). In consideration of characteristics of analysed items, factor 1 was 'familial relationships', factor 2 was 'occupational affairs' and factor 3 was 'pursuit of knowledge' while factor 4 was 'others' recommendation, factor 5 was 'capacity building', factor 6 was 'use of leisure time' and factor 7 was 'acquisition of degrees and licenses'.

Reliability level using Cronbach's  $\alpha$  coefficient was analysed to be .60 or more between factor 1 and factor 6. However, factor 7 was lowest at .587, meaning that all factors other than factor 7 were sound. In specific, variance ratio of familial relationships was 13.1%, offering the highest level of explanation among the seven factors. Occupational affairs factor related to occupation was 12.9% while factor of pursuit of knowledge was 12.3%, and recommendation from others took up 10.3%. Capacity building was 8.9% and use of leisure time was 8.1%. Finally, factor of acquisition of degrees and licenses was 4.9%. Based on such explanation of factors, the motivation to learn of people using Academic Credit Bank System took the greatest part in familial relationships while acquisition of degrees and licenses offered the lowest explanation.

Technical statistics of major variables to identify impacts of learners using ACBS on satisfaction level are as presented in table 2. Satisfaction level was estimated based on qualitative level of teachers and instructors, education course (quality), education cost and overall satisfaction level. As for each independent variable, reference variable was decided, followed by processing with dummy variable. For example, as for sex, males and females were assigned as 1 and 0, respectively to estimate the influence of males. Age brackets were divided into 20s, 30s, 40s and 50s. Education level was divided into high school, junior college and university. As for occupation variable, reference variable was set up and the subjects were divided into white collar professions (professionals, office workers, public officials and teachers and teaching staff), blue-collar professions (manufacturers, technicians, service workers and the self-employed) and others (retired, jobless, housewives, and others). Income variables were divided into five and classified by dummy variables (income level of 2 million Won or below) and income forms of the remaining four were established as reference variables. In order to apply the results of factor analysis as

independent variables, averages of each factor were calculated and applied to the analytic model. The means and standard deviations for each variable are as presented in table 2.

**Table 1:** Factor Analysis of Learning of Learners Using Academic Credit Bank System

Factor	Question for Measurement	Factor Loading b	Variance Ratio	Cronbach's $\alpha$	Eigen value
F1a Familial relationships	To be better parents	.890	13.100	.918	4.061
	To be a better husband or a wife	.848			
	For education of children	.809			
	To offer models to children	.797			
	To tend family	.792			
F2 Occupational affairs	To be better at work	.749	12.906	.864	4.001
	To change job	.737			
	To be promoted at work	.717			
	To improve occupation	.704			
	For more salaries	.678			
	To gain knowledge and capacity wanted at work	.667			
	To get a new job	.558			
F3 Pursuit of knowledge	To enjoy learning	.740	12.322	.859	3.820
	To adapt to reality through learning	.692			
	Expecting that learning will help someday	.663			
	To challenge life with new knowledge	.651			
	To be better than other people	.650			
	To improve mental health	.576			
	A subject that I've always wanted to study became available	.505			
F4 Recommendation from others	Recommended by acquaintances	.872	10.385	.715	3.219
	Recommended by family members	.851			
	Recommended by a friend	.803			
	To belong to an organization	.714			
F5 Capacity	To strengthen capacity	.852	8.974	.915	2.782
	To obtain professional knowledge	.843			

building	and technologies				
	To discover and develop potential abilities	.838			
F6 Use of leisure time	To enjoy leisure and deepen hobbies	.888	8.100	.860	2.511
	Leisure time is sufficient enough	.785			
	To better use leisure time	.762			
F7 Acquisition of degrees and licenses	To acquire a degree	.755	4.897	.587	1.518
	To acquire a license	.560			
Total Variance Explanation: 70.682%, KMO=.853 Bartlett Sphericity Verification $\chi^2=4924.229$ ( $p<0.000$ )					

- a: Factors with eigen value of one or higher after Varimax rotation were extracted and cumulative coefficient of overall explanation of the extracted factors is 70.682%.
- b: Values where factor loading is 0.5 or higher.

Goodness of fit of the estimated results of table 3 will be determined out of chi-square based on Log-Likelihood Function while interpretation for individual independent variables was conducted with t value. Gender, marital status, education, occupation and income variable among demographic statistics didn't have any impact on satisfaction with qualitative levels of teachers and instructors. However, among motivations of learning applied as independent variables, familial relationships (significance level at 5%), pursuit of knowledge (significance level at 1%), capacity building (significance level at 10%) and use of leisure time (significance level at 5%) were related to satisfaction level. However, among demographic variables, university graduates (significance level at 5%), blue collar (significance level at 10%) and occupational affairs (significance level at 5%) had negative (-) impacts.

Variables of demographic characteristics affecting education course (quality) were negatively affected in blue-collar (significance level at 5%) and occupational affairs (significance level at 5%) while pursuit of knowledge and capacity building had positive effects at significance level at 1%. The correlation pertaining to satisfaction with education cost was positively related to those aged 30s (significance level at 5%), pursuit of knowledge (significance level at 5%) and capacity building (significance level at 1%) while blue-collar (significance level at 1%) variable had negative (-) impacts. Finally, in satisfaction level analysis pertaining to overall management were positively affected by learners aged 30s and 50s at 5% of significance level. Familial relationships (significance level at 1%), pursuit of knowledge (significance level at 5%), capacity building

(significance level at 1%) and use of leisure time (significance level at 1%) had positive impacts on satisfaction level. Also, income groups between 2 million and 3 million and others between 4 million and 5 million were negatively affected at significance level of 10% while occupational affairs recommendation from others had negative (-) impacts at 10% of significance level.

**Table 2:** Variable Definition of Ordered Probit Model and Descriptive Statistics

Division	Variable	Definition of Variable	Means (Standard Deviation)
Dependent Variables :	Qualitative levels of teachers and instructors at classes	C1,C2,C3,C4	3.508 (0.848)
	<input type="checkbox"/> Satisfaction with curricula (quality of education)		3.508 (0.848)
	<input type="checkbox"/> Satisfaction with education cost		3.254 (0.861)
	<input type="checkbox"/> Overall satisfaction level		3.437 (0.884)
Explanatory Variables	Gender	Male=1; Female=0	0.320 (0.467)
	Marital Status	Married=1; Other=0	0.587 (0.493)
	Education	Junior college=1; Other=0	0.283 (0.451)
		University and/or graduate school=1; Other=0	0.251 (0.433)
	Age	30s=1; Other=0	0.266 (0.443)
		40s=1; Other=0	0.241 (0.428)
		50s=1; Other=0	0.129 (0.336)
	Occupation	White collar=1; Other=0	0.241 (0.428)
		Blue collar=1; Other=0	0.279 (0.449)
	Income	2 million Won~3 million Won=1; Other=0	0.229 (0.421)
		3 million Won~4 million Won=1; Other=0	0.262 (0.440)
		4 million Won~5 million Won=1; Other=0	0.141 (0.349)
		5 million Won or more=1; Other=0	0.137 (0.345)
	F1: Familial relationships	Means of Factor	3.335 (0.793)
F2: Occupational affairs	Means of Factor	3.045 (0.715)	

	F3: Pursuit of knowledge	Means of Factor	3.339 (0.657)
	F4: Recommendation from others	Means of Factor	2.762 (0.849)
	F5: Capacity building	Means of Factor	3.518 (0.820)
	F6: Use of leisure time	Means of Factor	3.145 (0.805)
	F7: Acquisition of degrees and licenses	Means of Factor	3.439 (0.816)

**Table 3:** Results of Estimation of Satisfaction Level of Learners Using Academic Credit Bank System Applying Ordered Probit Model

Variable	Qualitative Level of Teachers and Instructors	Curricula	Education Cost	Overall Satisfaction
	Coefficient (t-value)	Coefficient (t-value)	Coefficient (t-value)	Coefficient (t-value)
Male	0.150 (0.831)	0.168 (0.926)	0.051 (0.292)	0.229 (1.281)
Married	0.072 (0.315)	0.132 (0.575)	-0.236 (-1.060)	-0.061 (-0.270)
Junior College Graduate	-0.176 (-0.922)	-0.033 (-0.173)	0.057 (0.309)	-0.016 (-0.086)
University Graduate	<b>-0.448** (-2.112)</b>	-0.181 (-0.855)	-0.308 (-1.504)	-0.252 (-1.209)
30s	0.331 (1.342)	0.275 (1.112)	<b>0.056** (0.233)</b>	<b>0.487** (2.006)</b>
40s	-0.009 (-0.032)	-0.052 (-0.180)	0.203 (0.723)	0.276 (0.975)
50s or older	0.445 (1.380)	0.261 (0.809)	0.514 (1.637)	<b>0.726** (2.279)</b>
White Collar	0.141 (0.684)	0.096 (0.467)	-0.008 (-0.040)	0.025 (0.126)
Blue Collar	<b>-0.335* (-1.757)</b>	<b>-0.409** (-2.145)</b>	<b>-0.551*** (-2.957)</b>	-0.302 (-1.612)
2 million Won~3 million Won	-0.234 (-1.027)	-0.339 (-1.479)	0.147 (0.664)	<b>-0.374* (-1.659)</b>
3 million Won~4	0.007	-0.176	0.260	-0.233

million Won	(0.034)	(-0.813)	(1.234)	(-1.092)
4 million Won~5 million Won	-0.393 (-1.551)	-0.336 (-1.323)	0.092 (0.378)	<b>-0.474*</b> <b>(-1.888)</b>
5 million Won or more	-0.003 (-0.011)	-0.117 (-0.446)	0.240 (0.943)	-0.424 (-1.634)
F1: Familial relationships	<b>0.303**</b> <b>(2.521)</b>	0.182 (1.521)	0.034 (0.301)	<b>0.396***</b> <b>(3.320)</b>
F2: Occupational affairs	<b>-0.278**</b> <b>(-1.987)</b>	<b>-0.352**</b> <b>(-2.490)</b>	-0.100 (-0.747)	<b>-0.232*</b> <b>(-1.683)</b>
F3: Pursuit of knowledge	<b>0.563***</b> <b>(3.288)</b>	<b>0.662***</b> <b>(3.864)</b>	<b>0.332**</b> <b>(2.020)</b>	<b>0.333**</b> <b>(1.981)</b>
F4: Recommendation from others	-0.152 (-1.434)	-0.106 (-1.003)	-0.034 (-0.331)	<b>-0.188*</b> <b>(-1.786)</b>
F5: Capacity building	<b>0.218*</b> <b>(1.906)</b>	<b>0.357***</b> <b>(3.102)</b>	<b>0.330***</b> <b>(2.945)</b>	<b>0.317***</b> <b>(2.789)</b>
F6: Use of leisure time	<b>0.284**</b> <b>(2.456)</b>	0.128 (1.104)	0.054 (0.486)	<b>0.322***</b> <b>(2.811)</b>
F7: Acquisition of degrees and licenses	0.060 (0.544)	-0.012 (-0.112)	0.142 (1.328)	0.171 (1.571)
Constant	-0.923 (-1.555)	-0.468 (-0.798)	0.016 (0.028)	-1.352 (-2.294)
LLF	-241.9671	-244.2521	-267.0776	-252.8892
$\chi^2$	98.2491 (P>.000)	96.7554 (P>.000)	69.7961 (P>.000)	106.5710 (P>.000)

\*, \*\* and \*\*\* stand for significance level at 10%, 5% and 1%.

## Conclusion

This study aimed at analysis of motivation of learning and satisfaction of learners using Offline Academic Credit Bank System (ACBS), a questionnaire survey was conducted, producing 241 valid questionnaires for factor analysis pertaining to motivation of learning. Based on estimated factor results and demographic variables as independent variables, overall satisfaction with qualitative levels of teachers and instructors related to classes,

education course (quality) and education cost were inferred. In order to estimate satisfaction level, ordered Probit model was applied.

The motivation of learning of learners using ACBS analysed through factor analysis was divided into 'familial relationships', 'occupational affairs', 'pursuit of knowledge', 'others' recommendation, 'capacity building', 'use of leisure time' and 'acquisition of degrees and licenses'. Specifically, variance ratio of familial relationships factor took up 13.1%, offering the highest explanation level among the seven factors. The factors that increased job-related improvement was 12.9%, followed by pursuit of knowledge, recommendation from others, capacity building, use of leisure time and admission to higher education institute taking up 12.9%, 12.3%, 10.3%, 8.9%, 8.1% and 4.9%, respectively. Based on the explanation as above, motivation of learners using ACBS took up the highest portion in familial relationships while acquisition of degrees and licenses had the lowest explanation level. Acquisition of degrees and licenses was expected to be highest in ratio but ranked bottom while motivation pertaining to familial relationships took up the highest portion.

On the other hand, satisfaction of learners differs by perspective of interpretation out of subjective and emotional responses pertaining to objects of learning. Learners' satisfaction will be determined when the qualitative level of teachers and instructors, education course and education cost are combined. Summing up the factors of demographic variables and motivation of learning influencing satisfaction, except for the result that university graduates affected qualitative level of teachers and instructors, there was no impact of sex, marital status and education. From the analytic results, that university graduates have a negative impact on the qualitative level of teachers and instructors of ACBS, it can be interpreted that satisfaction with similar classes is low as they have experienced the four-year university education. As for overall satisfaction level, those aged in their 30s and 50s showed positive relations. Such a result can be inferred based on the coefficient and t value of each estimation item, which showed that those aged in their 30s, 50s or older had higher satisfaction with the qualitative level of teachers and instructors, education quality and cost than those aged in their 20s and 40s. Contrary to this, blue-collar workers (including manufacture, technology, service, self-employment and those including retired or jobless people, housewives and others) produced no statistically significant results in overall satisfaction but they neared 10% of significance level, while satisfaction with the qualitative level of teachers and instructors, education course and cost were very low. Based on satisfaction level per income variables, the satisfaction level was lower with low-income groups (2~3 million Won) than that of high-income groups (4~5 million Won).

Based on the analytic results applying the means of factors of motivation for learning, factors of participation in ACBS through recommendation from others had a negative impact on overall satisfaction; degree and license acquisition had no correlation. In other



words, familial relationships, occupational affairs, capacity building, and use of leisure time had positive impacts on overall satisfaction. Among other factors, pursuit of knowledge and use of leisure time had positive impacts on all items such as qualitative levels of teachers and instructors, education course, education cost and overall satisfaction.

Based on the results of many domestic and overseas articles related to business administration, higher satisfaction of customers had a positive impact on intention of mouth-to-mouth recommendation and there were close relationships between re-visits and intent for mouth-to-mouth recommendation. This means that higher satisfaction leads to better customer attitudes and increasing re-visits. Overall, higher customer satisfaction will have a positive impact on the intent to revisit. As for the ACBS, the satisfaction level of learners, if qualitative level of each classified item remains high, will be the most basic marketing strategy that can maintain learners and can create continuous demand. This means that satisfaction will make potential and current learners revisit and recommend the learning product to acquaintances.

The positive analytic results from the questionnaire survey could derive causal relationships by inferring motivation of learning, of learners using Academic Credit Bank System, and exploring satisfaction levels. However, a detailed explanation as to how and why demographic variables and motivation of learning produce higher or lower satisfaction levels can only be inferred due to a lack of domestic and overseas research pertaining to learners of ACBS. The inference is expected to be substantiated based on more research in the future.

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