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Analysis of the Factors Influencing Bogor Senior High School Student Choice in Choosing Bogor Agricultural University (Indonesia) For Further Study

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Abstract

This research investigates the factors influencing Bogor senior high school students' choice of Bogor Agricultural University for further study. Choice of higher education institution is difficult for senior high school students and requires the consideration of many factors. Students in choosing a college are influenced by social factors, personal, psychological, family, friends, teachers, the economics of situation, motivation, campus facilities and reputation of the college as well as interest. This research uses descriptive analysis and multinomial logistic regression from 380 students. The sampling method used in this study is non-probability sampling with purposive sampling. The study population is grouped into three groups based on ranking of high school (high, medium, low). Samples were students majoring in science conducted by purposive sampling (2 classes for each school). The results show that the most significant influential factors in student choice of institution are field of study offered and the higher education institute's ranking. Nuclear family members are the main source of information but the choice of field and institution is generally the student's own. The results of the multinomial logistic regression indicate that the factors that have significant influence in the choice are gender, family assets, parents' of education, potential work opportunities, sources of information and desired field of study. These results will enable IPB to more effectively influence the preference of high school students so that they are more inclined to attend the university. This study also provides an example of the way the methodology can inform a higher education institute's recruitment program so it is better tailored to the target consumers.

Keywords: University, Senior high school students, Bogor agricultural university.
JEL Classification: I21, I23.

Contents

1. Introduction

Developing the intelligence of its citizens is listed as one of the functions of the State in the fourth paragraph of the preamble of the 1945 constitution of the Republic of Indonesia which is expanded in sections 20, 21, 28 C (1), 31 and 32 which obligate the government to develop and run a national education system (Pemerintah Republik Indonesia, 1945). Higher education is part of that national education system that plays a key role in the intellectual development of the nation and the advance of knowledge and technology. This education must pay attention to the humanitarian values and culture of the nation and lead to further empowerment (Dirjen Dikti Direktorat Jenderal Pendidikan Tinggi, 2012).

Increasingly fierce of competition both nationally and internationally requires people to develop their competency to be able to contribute and compete. Education is absolutely necessary as a means developing knowledge and skills.

Senior high school students find choosing a higher education institution very difficult as various factors must be weighed up. Often they will ask advice from their parents and friends. According to Cabrera and La Nasa (2000) the influence of others can become a motivation and open up discussion involving the school that the student hopes to choose (Miller, 1997; Schmit and Vesper, 1999; Perna, 2000).

IPB is an Indonesian government university that is classified as having obtained semi-autonomous status (*Badan Hukum*). It has a major role in producing SDM, developing science and technology research and has a mandate to pioneer the development of agriculture in its widest sense. It was established in 1963 by a Ministry of Higher Education and Knowledge decision (number 91, 1963), that was subsequently ratified by Presidential decree No. 279, 1965 (IPB Institut Pertanian Bogor, 2014).

IPB has a primary mandate to advance and develop the management of Indonesia's natural resources so they are optimally and sustainably utilized in the agricultural industry resulting in maximization of added value and other areas related to human welfare. The increasing complexities of challenges to agriculture and the broadening of its mandate means IPB must also be active in the areas of tropical agriculture and bioscience (IPB, 2014). The number of students who were accepted by IPB fluctuates from year to year as can be seen in tables one and table two which show the number of new students according to entrance path.

Table-1. Number of new students at IPB

Degree	Academic year			
	2011/2012	**2012/2013**	**2013/2014**	**2014/2015**
Diploma	2193	2569	2013	2197
Bachelor	3495	3868	3736	3556
Master	1161	1355	1506	1204
Doctorate	267	227	210	211
Total	7116	8019	7465	7168

Source: IPB education statistics and academic system information (2014)

Table-2. Number of new students enrolling for a bachelor degree at IPB based on entrance path

Entrance path	Year						
	2009	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
USMI/SNMPTN by Invitation	2095	2606	2334	2409	2118	2176	2291
SPMB/SNMPTN/SBMPTN (Written exam)	518	522	618	714	920	872	1071
PIN/BUD (Provincial & high achievement scholarship students)	242	231	217	272	219	171	105
UTM (IPB Entrance exam)	315	382	297	445	419	271	131
International students	40	13	28	16	29	20	30
Papua/KalBar Quota	0	0	0	11	31	46	24
Total	3210	3754	3494	3867	3736	3556	3652

Source: TPB IPB in figures (2015)

Petruzzellis and Romanazzi (2010) classified factors in student choice as those related to the student and those related to the institution. Yamamoto (2006) the primary factors studied were family opinion and the interests of the student. Hossler and Gallagher (1987) found that parents and peers were influential. Decision making process influences can be grouped as external factors (culture, family, social status, demography and marketing) and internal factors (personality, lifestyle, attitude, opinion and interests) (Cubillo *et al.*, 2006; Maringe and Carter, 2007). Vrontis *et al.* (2007) classified of internal factors as those specific to the individual student and external factors as those related to the environment outside the home.

Basically, the factors that influence students in choosing a college as a place of further study include by cultural, social, personal and psychological factors. Another factor influencing to choose college is a family factors, individual, employment, economic of situation, motivations, perceptions, beliefs, attitudes and interests (Hossler and Gallagher, 1987; Cubillo *et al.*, 2006; Yamamoto, 2006; Kotler, 2007; Maringe and Carter, 2007). The factors that outside (external) and inside (internal) the human self-most influence on consumer behavior, especially senior high school students in choosing a college.

It is important for IPB to be aware of the factors that are significant in the preferences of potential students considering their institution, particularly those from within the city area, so they can be encouraged to continue their study at IPB. This research is the first time these factors have been studied specifically for Bogor high school students. This research gives a unique insight into what influences these student's in their choices.

2. Literature Review

Kotler (2005) states that consumer behavior is the field of study of the way individuals groups and organizations choose buy or use goods, services, ideas or experience to meet their needs and wants. Consumer behavior is a complex process involving human activities and environmental influences (Utomo, 1993). Sumarwan (2014) regards understanding of consumer behavior involves understanding all the actions and psychological processes that encourage the consumer action from before making the purchase, while purchasing and while using the product or service as well as afterward and also the way the consumer evaluates their experience of the product or service. According to Prasetijo and Ihalauw (2005) consumer behavior is the process carried out by people as they look for, purchase and use, evaluate a product, service or idea to meet their needs and also their post-purchase behavior. Consumer behavior is shaped by many factors including the influence of the environment, individual differences and psychological processes (Engel *et al.*, 1994).

To understand the way consumers make their choice it is imperative to first understand the nature of the involvement of the consumer with the product or service(Sutisna, 2003). Kotler (2005)states that making a decision is an action made by an individual who is directly involved in obtaining and using the goods offered. Consumer decision making is one part of consumer behavior.

Shiffman and Kanuk (2007) maintain that the decision making process is influenced by the external environment which consists of a combination of marketing (product, promotion, pricing, distribution) and socio-cultural environment (family, resources, sources of non-commercial, social class, culture and sub-cultures) and the internal environment (psychological factors), which consists of motivation, personality, learning, perception and attitude.

The influential factors in student choice of higher education institution can be grouped as cultural, social, personal and psychological as in Kotler (2007). They could also be classified as family, individual, work, economic situation, motivation, perception, conviction, attitudes and interest. Shiffman and Kanuk (2007) speaks of the behaviour of consumers of goods and services being influenced by a number of factors including psychological, environmental and individual factors.

Several things influence the student's decision in choosing a higher education institution such as friends, guidance counselor, parents, sports facilities and prestige of the institution (McDonough, 1997; Choy and Ottinger, 1998; Toma and Cross, 1998; Cabrera and La Nasa, 2000; Helwig, 2004). Student demographic factors such as race, gender and socioeconomic status influence students in determining college choice (Perun, 1982; Horvat, 1996; Hurtado *et al.*, 1997; Shank and Beasley, 1997; King, 1999; Trent *et al.*, 2001; Kim, 2004).

Demographics, academic preparation, family influence, personal academic and political views also influence choosing a field of study (Porter and Umbach, 2006). Factors of location, social environment, learning opportunities and foundation for possible future study, courses and employment opportunities related to them have a significant influence (Moschidis *et al.*, 2013).

3. Methods

The research was conducted between June and August 2015 in six academic high schools and one vocational high school in Bogor which were classified according to three quality rankings (high, medium and low). These schools were SMAN 3, SMAN 2, SMAN 7, MAN 1, SMA Plus YPHB, SMA PGRI 4 and SMK 3. Purposive sampling a form of non-probability sampling was used. Respondents were drawn from the science stream only (as IPB draw a primarily from students from this stream). Thirty respondents were drawn from each of two classes in each school. Two exceptions to this were SMA PGRI 4 where only one class was used as there is only one science stream class in the school and also SMK 3 where respondents came from a culinary skills class and a computer programing and network skills class. Respondents were taken from classes that were not engaged in study at the time of the research (for practical reasons). In general each school had employed teachers with strata 1 (S1) and strata two (S2) education from IKIP, IPB, UI, UPI, UNPAK, UHAMKA, UIN, UNJ or UT.

The analysis of the data used descriptive and multinomial logistic regression methods. The multinomial logistic regression model has three dependent variables, Y = 0 choice of IPB as comparison variable, Y = 1 choice of a university (UI, UGM and ITB), Y = 2 choice of another higher education institution (other than UI, UGM and ITB). As Y is a dependent variable with categories represented by *j* = 0, 1, 2 …., *m-1* and a multinomial logistic regression model with *m* categories will have (*m-1*) a logit function. The use of 3 values for Y results in 2 a logit functions.

a. A logit function of choice of a university (UI, UGM and ITB) against choice of IPB :

$$Z_1(\underline{x}) = \ln\frac{P(Y=1|\underline{x})}{P(Y=0|\underline{x})} = \beta_{10} + \beta_{11}X_{11} + \cdots + \beta_{1p}X_{1p}$$

b. A logit function of choice of another higher education institution against choice of IPB :

$$Z_2(\underline{x}) = \ln\frac{P(Y=2|\underline{x})}{P(Y=0|\underline{x})} = \beta_{20} + \beta_{21}X_{21} + \cdots + \beta_{2p}X_{2p}$$

The independent variables were the factors that influence Bogor senior high school student's choice in choosing:

Table-3. Independent variable and dummy variable

Independent Variable		Category		D1	D2	D3	D4	Measurement Scale
Gender (X$_1$)		: Male						Nominal
		: Female						
Parent's of education (X$_2$)								
Father's education (X$_{2.1}$)		: Higher education or equivalent						Nominal
		: No higher education						

Mother's education ($X_{2.2}$)		: Higher education or equivalent					Nominal
		: No higher education					
Learning style (X_3)		:Individual & group study					Nominal
		: Group study					
		: Individual study					
Source of information (X_4)		: High					Ordinal
		: Middle					
		: Low					
Motivation (X_5)		: High					Ordinal
		: Middle					
		: Low					
Field of interest (X_6)		: Science					Nominal
		: Social					
		: Humanities					
		: Formal					
		: Applied					
Payment of fees (X_7)		: Student					Nominal
		: Parents & family					
		: Scholarship					
Family assets (X_8)		: Middle				Ordinal
		: Low				
Work opportunity (X_9)		: Yes				Nominal
		: No				

Source: Field data

4. Results and Discussion

4.1. Respondent Characteristics

Of the 380 respondents 54 (14.2%) came from schools classified as having a lower ranking. 256 (67.4%) moderate ranking and 70 (18.4%) high ranking. The breakdown of the population was based high school attended, highest education achievement of father and mother, learning style, gender, family assets, choice of field of study, and factors considered in choice of higher education institution.

313 students (82.4%) were from government schools and the remainder from private schools. The highest academic achievement of the fathers of the respondents was higher education for 58.7% but only 45% of the mothers had higher education.

Most favoure learning preference for respondents was a combination of individual study and group study (53%) followed by group study (29.7%) and individual study (16.3%).
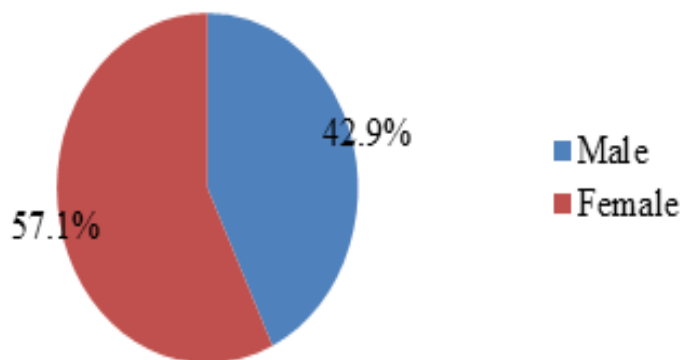
Figure-1. Gender of respondents
Source : Field data (excell output)

Figure 1 shows that more (217 students, 57.1%) of the respondents were female than male (163 students, 42.9%).
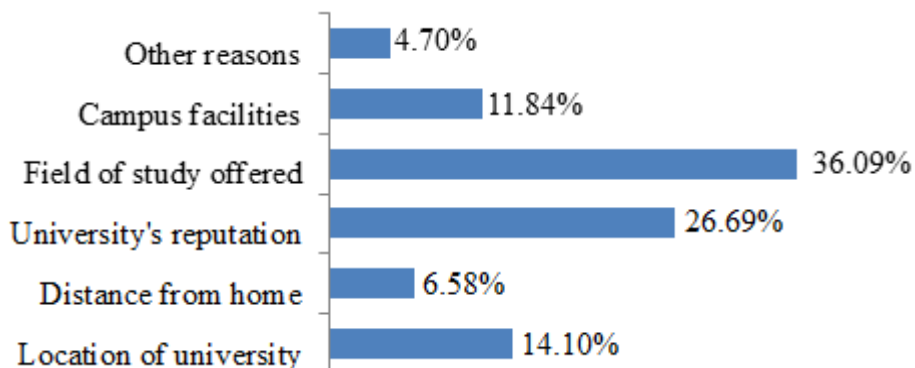
Figure-2. Respondents' choice of higher education institution
Source : Field data (excell output)

Figure 2 demonstrate that most students chose more than one factor. Field of study offered and university's reputation whereby for the most common factors considered while distance from home was considered by less than 7% of the respondents. Other researchers have found these same factors to be influential on student choice. Dahari

and Abduh (2011) also found that the program and facilities offered at a higher education institute influenced international students in doctoral program were factors in their choice of Malaysian Universities. Courses offered are the most important factor in choosing a college in Kuala Lumpur and Selangor, Malaysia (Yusof *et al.*, 2008). Price and Agahi (2003) also confirmed that the courses offered and the reputation of the college become important factors when it comes to choosing a university in the UK for students. Rudd *et al.* (2012) found that facilities and academic reputation were influential in Chinese student's choice of business school in the United Kingdom (UK). Kelling (2006); Lay and Maguirie (1981); Murphy (1981); Sevier (1986) suggest that a college's reputation is the most influential factor in choosing a college for high school students.Padlee *et al.* (2010) found that the location of the higher education institute was influential in international students' choice of private university in Malaysia. Nalim (2012) also found location to be influential for students studying Arabic language at STAIN in Pekalongan. Location of college close to home also affects high school students' decision to choose the college. This could reduce tuition fee which in turn prompted students' decision to choose the college (Sevier, 1986; Hossler and Gallagher, 1987). Turley (2009) also found that the location of the college closer to home had become the most decisive factor for high school students to choose a college. Computer laboratory facility is the most influential factor in choosing a university for Master's degree students (Patel and Patel, 2012). Educational facilities such as lecture theatre, library, and laboratory also exert termendous effects on high school students in choosing a university (Absher and Crawford, 1996). Petruzzellis and Romanazzi (2010) found factors related to the institution itself were one important factor in SMA student decision making alongside factors related to the students themselves.
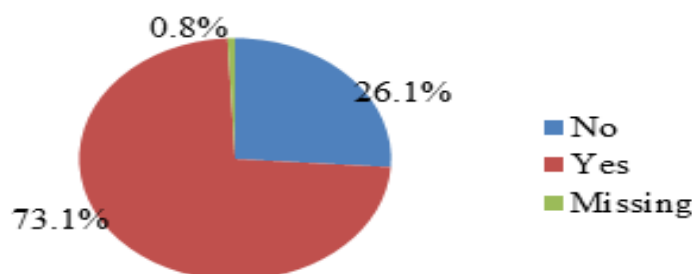

Figure-3. Influence of ranking of institution on SMA student choice
Source : Field data (excell output)

Figure 3 shows that national and international ranking is a significant influence in choice. Only about a quarter of the high school students did not include ranking as an influential factor. The national and international ranking of the higher education institution influenced student choice. This finding is supported by that of Rudd *et al.* (2012) who found accademic reputation to be important in student's choice of business school. Bashir *et al.* (2013) also found ranking to be influential in student's business school choice in Karachi. Furthermore, Canale *et al.* (1996) and HERI Higher Education Research Institute (2007) reported that both ranking and academic reputation of the college and university are the main reasons behind high school students' decision to choose a college or university. They viewed academic reputation as creating more job opportunities (Freeman, 1999).

Table-4. Choice of field of study of high school students surveyed

Ranking	Choice of field of study	N	%	Offered at IPB
1	Medicine	80	11.82	−
2	Management	77	11.37	√
3	Engineering	76	11.23	√
4	Science	52	7.68	√
5	Oil Industry	42	6.20	−
6	Community Health	40	5.91	−
7	Tourism	38	5.61	−
8	Forestry	35	5.17	√
9	Social and Political	33	4.87	−
10	Pharmacy	33	4.87	−
11	Human Ecology	31	4.58	√
12	Agriculture	31	4.58	√
13	Law	27	3.99	−
14	Fisheries	22	3.25	√
15	Biotechnology	21	3.10	√
16	Animal Husbandry	15	2.22	√
17	Agricultural technology	13	1.92	√
18	Veterinary Medicine	11	1.62	√

Source: Field data (excell output)

Table 4 shows that most students were interested in more than one field of study. The most popular field was medicine at 11.82% followed by management studies and engineering. Of the 7 most popular fields chosen only management, engineering and science are offered by IPB. Courses related to IPB's unique mandate such as veterinary medicine, agricultural technology, animal husbandry, biotechnology, fisheries and agriculture are not generally popular amongst Bogor senior high school students. Applicants for the agricultural program decreased, both nationally and internationally, which was linked to several factors, including students' motivation to get job security (Ester and Bowen, 2005) the brand image of agriculture, changes in consumer behavior, marketing activities and internal conditions of universities less attractive to prospective students Fritz *et al.* (2007) aspiring to continue study in the field of agriculture.
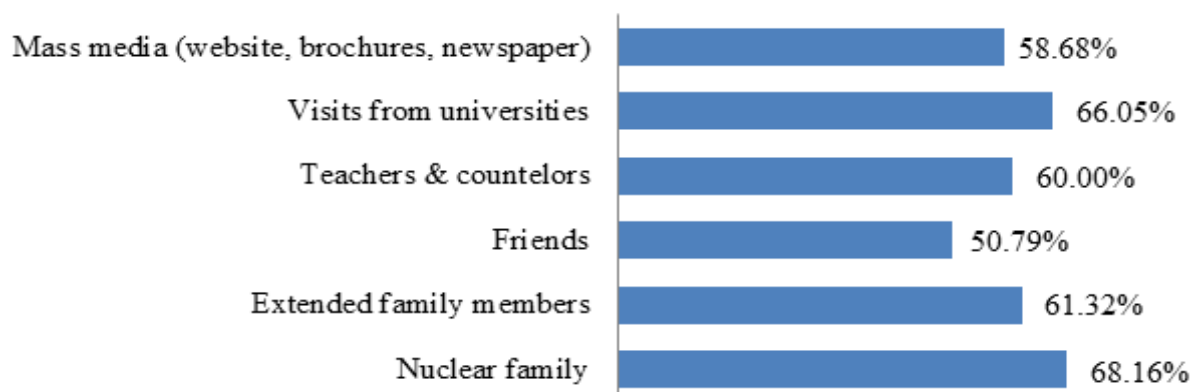
Figure-4. Information sources used by students in their decision of institution

Source : Field data (excell output)

Figure 4 shows the average students relied on information from about 3 different types of sources in making their choice. Most frequently cited was a nuclear family member such as parents or siblings at 68.16% followed by visits from universities information, from extended family members, teachers and counselors, mass media (website, brochures, and newspaper) and friends. Nuclear family members, extended family members and friends are reliable communication channels to influence consumers. This is significant as consumers look at the credibility of the communicator (Shiffman and Kanuk, 2004). For prospective students, nuclear family members and extended family members become important as a source of information that can be believed (Ishak, 2010). Mazzarol (1998) argued that friends, parents and teachers had turned out to be the most important things that sway high school students' process of choosing a college or university. Information and opinion of the parents also play an important role in choosing the college or university (Bashir *et al.*, 2013; Manoku, 2015). Visit to college and information about the courses offered are that most influential factors behind students' decision to choose the University of Massachusetts Amherst (Donellan, 2002). A visit to the college provides the opportunity for universities to show the whole area with its beautiful campus infrastructure so that students and their parents get more information about the social life in college (Boyer, 1987; Capraro *et al.*, 2004).
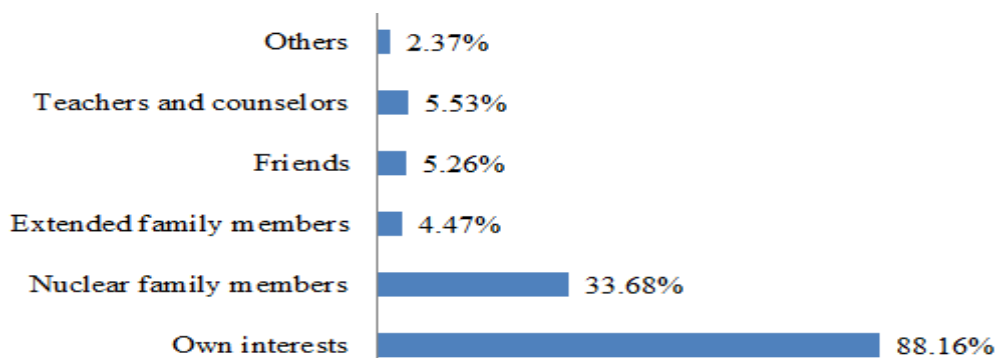

Figure-5. People influencing student decisions

Source : Field data (excell output)

Figure 5 shows that some respondents were influenced by more than one of these categories of people in their choice of institution. Almost 90% mentioned the student's own interests while a third were influenced by nuclear family members.

A student's own interest in continuing education to college is influenced by factors such as motivation, and expectations for the future, work opportunities, social environment, circumstances and institutional (Indriyanti *et al.*, 2013). Yamamoto (2006) also pointed out the main factors that influence students' choice is the opinion of the family and interests of the student. College students consider cost, the academic quality and campus appearance (Syamsuddinnor, 2013). Personality factors (psychology), academic factors, friends, finances, and the family also give effect to the decision of first-year students Appalachian (Wood, 2012). Waseem and Zarif (2012) in Pakistan (2012); Chiu and Stembrigde (1999) in Hong Kong (1999) and Teowkul *et al.* (2009) suggested that students' passion was an important reason for students to choose MBA programs.

4.2. Multinomial Logistic Regression Result of Influence Decision of Students
4.2.1. Test of Fit with Model

The result of a goodness of fit test gave a value of the G statistic of 646.375 corresponding to a *p-value* $0.000 < \alpha$ (0,01), this means the model is valid, in other words the explanatory variables chosen for this study do in fact influence the dependent variable significantly at the 1% level.

Table-5. Model fitting information

Model	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood	Chi-Square	Df	Sig.
Intercept Only	724.935			
Final	646.375	78.560	36	0.000

Source : Field data (SPSS output)

A partial parameter test was conducted using the Wald test statistic. The results show that the variables that have a significant influence on student choice (*p value* <0.15; α < 0.15) were gender, family assets, consideration of potential work opportunities, level of parent's education, information sources and field of interest. Learning style, motivation, and cost of fees were not statistically significant influences.

Table-6. Results of multinomial logistic regression model estimate

Independent Variable		Decision of student			
		Choosing UI, UGM, ITB		Choosing another university	
		B	odds ratio	B	odds ratio
Intercept		.672		-.157	
Gender	Male	.442*	1.555	-.147	.863
	Female	0[b]			
Father Education	Higher education or equivalent	-.233	.792	.578*	1.783
	No higher education	0[b]	.	0[b]	.
Mother Education	Higher education or equivalent	-.451	.637	-.606**	0.545
	No higher education	0[b]	.	0[b]	.
Learning Style	Individual & group study	.031	1.032	-.213	.808
	Group study	.042	1.043	-.117	.889
	Individual study	0[b]	.	0[b]	.
Source of Information	High	.306	1.358	.734	2.083
	Middle	-.190	.827	-.271***	.433
	Low	0[b]	.	0[b]	.
Motivation	High	.365	1.441	.962	.284
	Middle	.383	1.466	1.072	.239
	Low	0[b]	.	0[b]	.
Field of Interest	Science	.186	1.204	-.767	.391
	Social	1.538*	4.657	2.660***	.009
	Humanities	.654	1.922	-.392	.651
	Formal	.472	1.603	.319	.630
	Applied	0[b]	.	0[b]	.
Payment of Fees	Student	-.524	.592	-.709	.413
	Parents and Family	-.995	.370	-.907	.243
	Scholarship	0[b]	.	0[b]	.
Family Asset	Middle	-1.065***	.345	-.727**	.031
	Low	0[b]	.	0[b]	.
Work Opportunity	Yes	-1.152*	.316	-1.905**	.022
	No	0[b]	.	0[b]	.

Notes:
b) The reference category is: Choice of IPB.
*) significant at the 15% level
**) significant at the 10% level
***) significant at the 5% level

4.2.2. Interpretation of the Model for Students Choosing a University (UI, UGM, or ITB)

The interpretation of the coefficients of the logistic regression model was conducted by examining the odds ratio. For this first model the only variables having a statistically significant influence were gender, family assets and consideration of potential work opportunities. Others; parents education, learning style, motivation and cost of fees were not significant.

Table 6 indicates that the gender of the model choosing UI, UGM and ITB has a significant odds ratio of 1.56 at the level of 15%, meaning that chance of female students to choose UI, UGM and ITB is 1.56 times compared to male students. This may imply that male students tend to choose IPB. Sojkin *et al.* (2012) suggested that the reputation of the college's courses offered, tuition fees and access to financial aid are more important for male students than female students. Mudholkar (2012) in his research at Mumbai, found the distinction of factors regarding choice of university where male students paid more attention to location of the college, image/reputation of the college, infrastructure, specialization and faculties while female students were more attentive to image/reputation of the college, faculty, cost structure and location of the college. Female students added passion for science and comfortable family to their college or university option. Almost the entire boys and girls added factors like location of the college, the availability of courses and the desire of parents (Nicole, 2003). Offered courses were the most important factors for boys and girls. Female students can be reassured by the college catalog, school counselor and scholarships offer, while male students were more influenced by their parents in choosing a university (Grosz, 1987). Furthermore, Robert and Higgins (1992) suggested that boys were more interested in fields of study related to engineering, technology, science and mathematics, while female students were more attracted to fields of study linked to art, drama, music, health, social sciences, business, law and pedagogy. Girls were also more interested in security, diversity and various fields of study offered by the college compared to male counterparts, while male students were more interested in sport facilities in college (Hayes *et al.*, 1995).

Factors of family assets is a significant variable in predicting choice of a university (UI, UGM, ITB) as its *p-value* is smaller than the α = 0.01 value hence it is significant at the 1% level. A Middle class level of family assets has an odds ratio of 0.345 meaning that the chance of a student from a family owning middle class assets choosing a

university is 0.345 times that of a student from a lower class family. Hence students from lower class families are relatively more likely to choose IPB over UI, UGM or ITB. This reflects IPB's popular image as the university for the common person (*kampus rakyat*). This is because IPB has a primary mandate to advance and develop the management of Indonesia's natural resources as an agricultural country (IPB, 2014). The survey results of the HERI (2007) also showed that low-income students considered that the campus' proximity to the home was the most important thing. It is also supported by research conducted by Manoku (2015) suggesting that college's close proximity to the home will reduce students' cost of living. They also made the decision of choosing a college based on the assessment of family income, not based on their goal to be selective in choosing college (Hoxby *et al.*, 2013). Eidri (2009) also described the IPB as a college with affordable tuition fees, has comfortable environment, scholarship programs and strategic campus locations.

Factors of family assets is a significant variable in predicting choice of a university (UI, UGM, ITB) as its *p-value* is smaller than the $\alpha = 0.01$ value hence it is significant at the 1% level. A Middle class level of family assets has an odds ratio of 0.345 meaning that the chance of a student from a family owning middle class assets choosing a university is 0.345 times that of a student from a lower class family. Hence students from lower class families are relatively more likely to choose IPB over UI, UGM or ITB. This reflects IPB's popular image as the university for the common person (*kampus rakyat*). This is because IPB has a primary mandate to advance and develop the management of Indonesia's natural resources as an agricultural country (IPB, 2014). The survey results of the HERI (2007) also showed that low-income students considered that the campus' proximity to the home was the most important thing. It is also supported by research conducted by Manoku (2015) suggesting that college's close proximity to the home will reduce students' cost of living. They also made the decision of choosing a college based on the assessment of family income, not based on their goal to be selective in choosing college (Hoxby *et al.*, 2013). Eidri (2009) also described the IPB as a college with affordable tuition fees, has comfortable environment, scholarship programs and strategic campus locations.

Potential work opportunities are also a significant predictive factor in choice of university (UI, UGM, ITB) with a level of significance of 10% with an odds ratio of 0.32. The chance of a student who chooses a field of study because of its good work prospects choosing a university (UI, UGM, ITB) is 0.32 times higher than that of a student who wants to follow a course of study for other reasons. This means that a student whose choice of field of study is chosen because of work opportunities is relatively more likely to UI, UGM, ITB rather than IPB. Students attend master degree in Chios choose Aegean business school to develop their ability to enter the workplace Monioukas *et al.* (2007). Reputation of universities also sets more work opportunities for students (Freeman, 1999).

4.2.3. Interpretation of the Model for Choosing another University

In the second multinomial logistic models, the variables having a statiscally significant influence were father's of education, mother's of education, field of interest, source of information, family asset, and potential work opportunities, while insignificant variables are gender, learning style, motivation, and cost of fees.

Father's of education (no higher education) is a significant variable in predicting choice of another university at the 15% level with an ods ratio of 1.78, which means the opportunities of students whose parents have no higher education choosing another university are 1.78 times compared to those whose father's is in college. This means the students whose parents have the educational background in college are more likely to choose an IPB rather than another university.

Mother's of education (no higher education) was a significant predictive factor at the 15% level. It had an odds ratio of 0.545 times compared to students whose mothers went to college. This means that student whose mothers went to college were more likely to choose an IPB compared to another university. Litten *et al.* (1983) found that parent's education had a great influence on students when it comes to choosing a university compared with race and gender. The parents' education level, especially mothers, was more influential for African-American students in choosing a university than the father's education level (Draper, 1976). Paulsen (1990) also found parents' level of education became the most important factor in influencing the decision of high school students to choose a college.

The source of information was divided into three categories with a ranges in scores as follows (0-1: low; 2-4: medium; 5-7: high). Respondents choose more than option. Source of information model to choice another university was significant at the 15% level against the decision of high school students in choosing a university other than continuing their study in IPB. Source of middle category had an odds ratio for 2.083, meaning that the chances of students who have the source of information middle category were 2.083 times compared to those with source of information high category. This might mean that students who have high sources of information chose to continue their education in IPB than another university. Resources of parents more influence students in choosing a college women compared to male students (Shank and Beasley, 1997). Source taken from parents have swayed female students in their attempt to choose college or university compared to male students (Shank and Beasley, 1997). Parents were the most crucial source of the information and consultation for students before choosing a college (Johnston, 2010; Sukhawatthanakun *et al.*, 2010). Teacher and school counselor also influence students in choosing a particular university (Helwig, 2004). Visits College was very useful in approaching prospective students approach (Burns, 2006).

Area of student interest in the humanities was a significant predictive factor at the 1% level with an odds ratio of 14.297 meaning that students whose fields of interest fell into this category were 14.297 more likely to choose another university compared to those with other fields of interest. This means that students wishing to study humanities will tend to choose a different university than IPB.

Family assets was a significant predictive factor at the 5% level for students choosing a higher education institution that was neither IPB nor a university (UI, UGM, ITB) with odds ratio 0.483 meaning that the students whose family assets were in the richer category were 0.483 times more likely to choose another university compared to those from a lower assets class. This means that students whose families have a lower number of assets will be

more likely to choose IPB. A possible reason for this could be the lower cost of staying at home while studying. Parent's education and family income prompted students to choose particular college or university (Zimmerman *et al.*, 1992; Devadoss and Foltz, 1996). Suwankiri (2007) found that female students continued their study more than male students. Parents with higher education levels, working in government and business, tended to have the opportunity to continue their study compared with students whose parents received low level of education and worked in other fields. Parents provided motivation, expectations and influence to the student's decision to continue his/her study. Students with a great financial opportunity continued their study more than families who had poor financial power. Teachers and counselors were very helpful in-encouraging students to choose courses in college, especially those with low family income (Cabrera and La Nasa, 2000; Hahn and Price, 2008).

Consideration of work opportunities has an influence on student choice of a higher education institution that was neither IPB nor a prestigious university with a level of significance at the 5% level. Choosing a course because of potential work opportunities had an odds ratio of 0.149 meaning that students who chose these courses were 0.149 times more likely to choose other universities compared to those choice of study for reason other than opportunities. This means that students choosing study for work related reason will be far more likely to choose a different university than IPB. Paulsen (1990) suggested that students made an informed decision in choosing a college based on employment opportunities available to graduates. Students were interested in university chosen by its graduates. They were also influenced by what was done by graduates, college to be selected and the contributions made by the graduates to the community (Sevier, 1986).

4.3. Managerial Implications

As IPB plans marketing strategy and branding it should consider these factors as it tries to influence the attitude of its consumers particularly high school students from within Bogor so they are more likely to continue their study at IPB. Students with information sources classed as middle are more likely to choose IPB. Because of this IPB must change its promotion strategy so that consumers' perception of the university is improved and they are more likely to choose IPB for their higher education. The results of this study the following approaches maybe helpful. According Solikhah (2016) IPB should be able to increase its positive reputation by intensely exposing its excellence. Information about IPB and its courses should be improved by targeting families who have the upper and middle assets. This can be done by direct sale to the parents by organizing symposia at hotels or ads on the airline used by the upper middle class. To attract students from upper middle class family, IPB should be able to make itself as stereotype of campus of the people, making it as the main attraction.

The profile of courses such as agricultural technology, animal husbandry, biotechnology, fisheries and agriculture must be raised amongst Bogor high school students so that they understand the importance of these fields to the nation and the attractive work opportunities for graduates. With this information students will be more inclined to choice these fields and hence be more likely to consider IPB. Solikhah (2016) also proposed a variety of activities to increase students love for science and technology in agriculture. Memorandum of Understanding (MoU) should also be made between IPB and senior high schools while maintaining the quality of students to be accepted by IPB.

To attract more students from middle class families IPB must overcome the stereotype of being a university "for the common person (*kampus rakyat*)". The high quality of the courses offered and the superior education of teaching staff could be stressed to help achieve this, as could the stories of high profile graduates. This last strategy could also influence career minded students who may otherwise have chosen a more prestigious university.

5. Conclusion and Recommendations
5.1. Conclusion

This study shows that the dominant factors influencing Bogor high school students' choice of higher education institution are the fields of study offered and the prestige ranking of the Institution. The most important source of information for students about universities was their nuclear family members but the choice of higher education institution and field of study was the student's own. The results of multinomial logistic regression analysis has shown that the factors that have a statistically significant influence with *p-value* ≤0.15 ($\alpha \leq 0.15$) were gender, family assets, parents of education levels, potential work opportunities, sources of information and field of interest. Learning style, motivation and cost of fees were not significant factors. Students with information sources classed as high or whose families assets were in the low category were more likely to choose IPB. Interest in the humanities and programs of study that led to potential work opportunities will tend to choose (UI, UGM, ITB) or another university rather than IPB.

5.2. Recommendations

This study provides a model that could be used by any higher education institution wanting to fine tune its marketing strategy to a particular population of senior high school students. As the factors influencing students' decisions are better understood them the university can provide information in such away as will encourage the students to consider study at that institution.

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