



Estimating the Average School Fees Elasticity of Enrollment for Al-Hikmah University in Nigeria

Saidat Oluwatoyin Onikosi-Alliyu and Attahiru Vatsa Abdulazeez

Al-Hikmah University, Ilorin, Nigeria

Abstract

The literature assumed that the increase in an enrollment or increase in school fees is a means of increasing the revenue of an institution. This has been the practice of major private institutions which are profit driven. However, an increase in school fees may be detrimental to students' enrollment, which may lead to a reduction in revenue. The study, therefore, empirically investigates the effect of school fees on students' enrollment in Al-Hikmah University for the years 2013 and 2017. A fixed-effect panel least square estimation technique was used to analyze the data. The study established a significant negative effect of school fees on students' enrollment. The study also found that the average price elasticity was -0.2680 for the period of the study. The study concludes that the degree of responsiveness of students' enrollment to changes in school fees is inelastic. Therefore, the study recommends that studying elasticity of demand could help the management and policymakers to build up an appropriate market strategies to boost school revenue.

Keywords: University, School Fees, Enrollment, Elasticity, Panel

JEL Classification: H52, H20, H70

Paper Classification: Research Paper

Introduction

The provision of higher education in Nigeria is by both public and private institutions. Finance of public institution is greatly done by the government while the finance of private institution is purely by individuals, private organizations, religious bodies etc. However, most private institutions largely depend on school fees which include the tuition fees and other charges. Hence, school fees elasticity of students' enrollment becomes important for policymaking consideration for private institutions.

University education can be classified as a normal good because its demand responds negatively to the change in its price. This simply means that increase in the price of university education (school fees) will consequently lead to decrease in the demand (student enrollment) of university education and vice versa.

The high rate of reliance on school fees by most private institutions has motivated the development of formal strategies by many administrators to gain support for higher rates of

tuition, especially in developed countries. However, while it is easy to increase school fees to generate more income, it is complex to observe how such an increase will affect students' enrollment. In economics, the reaction of students to changes in school fees charges is referred to as school fees elasticity. The increment of school fees without due consideration of the elasticity may lead to a decrease in the expected revenue. This is because student may decide to transfer to other institutions where school fees are less.

Moreover, empirical evidence has shown a mixed result for students' enrollment and tuition elasticity. Some studies found out that student enrollment was positively related to tuition fees especially when student quality and competitive price are the driving factor for motivation (Breneman, 1994), some other studies concluded an inverse relationship (Campbell and Seigel, 1967; Jackson & Weathersby, 1975 and Chen, 2016). Wetzel, Tool and Peterson (1998), also conducted empirical research on tuition fees and student enrollment. They concluded that the nature of the competition in tertiary institutions is too complex to model. They claimed that enrollment demand models must be specific to each higher institution in order to obtain meaningful insight.

In Nigeria, the application for tertiary institution keeps on increasing especially in government-owned universities which are tuition-free institution. However, the resources budgeted for such an increase keep reducing (Bolaji, 2008). Hence, there is a wide gap between the number of admitted students and the total number of qualified students for admission. As a result, unfortunate students who are qualified but could not get admission, usually patronize private institutions as an alternative.

One major feature of the literature on the relationship between tuition fees and students enrollment is the use of tuition-fees to represent the costs of education. This may not give full information about the entire costs for higher education. The current study aims to fill this gap in our knowledge by focusing on the entire fees (school fees) incurred by students for fresh academic session. Moreover, studies on students' enrollment and tuition fees are relatively scanty in Nigeria.

The purpose of the study, therefore, is to empirically investigate the price elasticity of demand for school fees (Tuition and other charges) at Al-Hikmah University between the periods 2013 and 2017. The result of the study will have significant implications for policy and academic decision-makers in managing and implementing enrollment management strategy through a better understanding of the sensitivity of tertiary education demand.

Following the conclusion of Wetzel et al (1998) which clamours for a demand model for a specific institution for enrollment management decision, the current effort will contribute to the literature by estimating a demand model for Al-Hikmah university in order to determine the degree of responsiveness of Al-Hikmah students' enrollment to change in school fees.

Conceptual Review

This section explains the different concepts as they relate to the relationship between tuition fees and students' enrolment.

Tuition Fees: The price of education is commonly captured by the term tuition fees. According to Marcucci & Johnstone (2007) 'tuition fee generally refers to a mandatory charge levied upon all students (and/or their parents) covering some portion of the general underlying costs of instruction'. However, there are other charges in the school that are not captured by tuition fees such as accommodation fees, laboratory fees, e-library fees etc. These fees are always captured by

the term school fees. School fees connote tuition fees and all other charges levied by an institution on student for a particular academic session or from admission point to the graduation day.

Demand: Demand refers to the quantity of a commodity that consumers are willing and able to purchase at a specified price while supply describes the relationship between the quantity of a good that producers are willing and able to supply at a specified price (DesJardins and Bell, 2006; Oyeniyi, 2005). This is usually referred to as effective demand. Under enrollment management, education is the commodity offered by higher institution while the consumers are students and their families, the producers are the institutions, and the price is the school fees charged in a given semester or academic year (DesJardins and Bell, 2006).

Determinants of Students' Enrollment in Higher Education

The determinants of students' enrollment in higher education can be viewed from two perspectives which include price and non-price determinants (Des Jardins and Bell, 2006).

Price Determinant

- (i) **School Fees:** The school fee is the price of education. Increase in school fees lead to reduction in students' enrollment in higher institution. The lower the school fees, the higher the students' enrollment, *ceteris paribus*.
- (ii) **Complementary Goods:** Increase in the price of complementary goods such as books, rooms, transport, and so on, will exert a negative effect on students' enrollment.
- (iii) **Substitute Goods:** In this context, the substitute goods or commodity is the price of the competitors. An increase in school fees of a particular school may lead to the increase of students' enrollment of another institution which serves as alternative for the student.

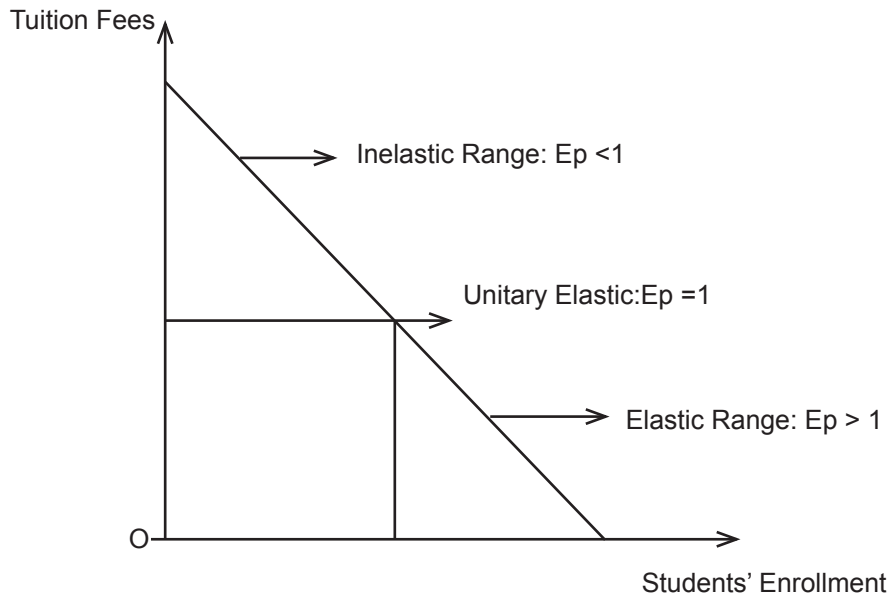
Non-Price determinants

- (i) **Income Level:** Theoretically, there is a direct association between the income of the student and the family to the demand for higher education. When consumer's income rises, *ceteris paribus*, there is the likelihood that the students' enrollment will increase.
- (ii) **Taste and Preferences:** A change in taste in favour of a particular higher institution, perhaps because of the quality of the school, will lead to increase in students' enrollment. This simply means that there is a positive relationship between taste and preferences and students enrollment.

Price Elasticity of Demand: This is defined as the degree of responsiveness of customer's to a change in price (Oyeniyi, 2005). It is also defined as the percentage change in quantity demand divided by the percentage change in the price of the commodity (Oyeniyi, 2005). If the response of all determinants of demand is constant, there will be a negative effect of change in school fees on students' enrollment. This simply means that an increase in school fees leads to a decrease in students' enrollment and vice versa.

The price elasticity of demand can be described as elastic, inelastic, or unitary. It is elastic when the percentage increase in school fees is lower than the percentage decrease in enrollment. In this situation, the absolute value of the measure of price elasticity will be greater than one. The price elasticity measure is inelastic when the percentage increase in school fees is greater than the percentage change in students' enrollment. The absolute value of price elasticity measure will be less than one. Another scenario is when price elasticity measure is equal to one as shown in Figure 1. This happens when the percentage change in school fees is the same as with the percentage change in students' enrollment.

Figure 1: Price Elasticity



Source: Desjardins and Bell, 2006

Methods of Measuring Elasticity of Demand

Point Elasticity Approach: This approach is usually used when the change in price is infinitesimally small. This method aims at measuring elasticity of demand at a particular point on a demand curve.

Given a linear demand function:

$$Q = a - bp \dots\dots\dots 3$$

Where Q is the quantity demanded, a is the constant intercept and b is the slope, the point elasticity is given by the following formula:

$$E_p = - \frac{dQ}{dP} \cdot \frac{P}{Q} \dots\dots\dots 4$$

$$= - \frac{dQ}{dP} \cdot p \cdot Q \dots\dots\dots 5$$

From 1 $\frac{dQ}{dP} = -b$

$$\therefore E_p = b \cdot p \cdot Q \dots\dots\dots 6$$

Arc Elasticity: This is usually used when the changes in price are large. Arc elasticity measures the coefficient of price elasticity between two points. It is calculated as follow:

$$E_p = \frac{Q_2 - Q_1}{Q_2 + Q_1} \div \frac{P_2 - P_1}{P_2 + P_1} \dots\dots\dots 7$$

$$= \frac{\Delta Q}{Q_2 + Q_1} \div \frac{\Delta P}{P_2 + P_1} \dots\dots\dots 8$$

$$= \frac{\Delta Q}{\Delta P} \cdot \frac{P_2 + P_1}{Q_2 + Q_1} \dots\dots\dots 9$$

Theoretical Review

There are three major theories that have been used in the literature to explain the determinants of students' enrollment in tertiary institutions. These include human capital theory (Becker, 1962; shin and Milton 2007); Rational Choice theory and demand theory (Hemelt & Marcotte 2008; Lesile & Brikman, 1987; Heller, 1997).

Human Capital Theory

Human capital can be defined as productive investment embodied in human persons, including skills, abilities ideals, health and locations, often resulting from expenditures on education and health theory (Todaro&Smith, 2011).

The human capital theory is based on microeconomics understanding where maximization of individual welfare or wellbeing is the major driving factor of economic analysis (Desjardins and Bell, 2006). However such analysis can be used to determine how educational choices are formulated as demonstrated in Becker (1962) and Schultz (1961). The human capital theory is based on the fact that individuals are regarded as rational consumers who usually optimized their satisfaction derived from the consumption of education. Hence they based their decision on educational choices on both economic and non-economic costs and benefits (Desjardins and Bell, 2006). Therefore, human capital theory takes education as an investment in which student makes choices of attending a higher institution based on the cost and benefit analysis.

From macro perspectives, investment in education also enhances the nation's human capital development. Education is one of the components of human capital that has attracted significant research. There is increasing empirical evidence that education matters for economic growth and development. Education matters not only for the personal development (Sen, 1999), health status (Schultz, 2002), social inclusion (Romer, 1986) and labour market prospects of individual learners (Lucas, 1988), but also for the broader economic performance of countries (OECD, 2006). Investment in education engenders limitless positive externalities such as improved public health and diffusion of democracy (Olaniyan and Okemakinde, 2008).

In addition, investment in education increases revenue generation for the country (Paulsen, 2001; Titus, 2009). At the aggregate level, a better-educated workforce enhances a nation's stock of human capital, which is crucial for increased productivity and economic development (Barro, 1996; Ravallion and Chen, 1997).

Rational Choice Theory

Rational Choice theory originated from George Homans, who is a sociologist in the year 1961 (Homans, 1961). He used the theory as a basic framework for the theory of exchange. As a result, this theory is sometimes referred to as sociologist rational choice theory. Economics plays important role in influencing human attitude and character because human beings are usually motivated by the expected costs and benefit or utility from the consumption, production or distribution of a particular commodity. Individuals are influenced by their personal wants and goals which stems out from their desire and wishes.

Rational choice theory is a way of doing rigorous calculation by weighing the expected costs and benefit or impending satisfaction from a particular endeavour before taking action for certain things. However, the theory is based on a wider concept of utility which includes both financial and non-financial costs and benefits. In relation to enrollment management, the rational theory assumes that student enrollment for higher education is based on the costs and benefits analysis. This simply means enrollment in a tertiary institution or educational choices of student is based on the maximization of fundamental goals (Hechter & Kanzwa, 1997) Rational choice theory is very similar to human capital theory for the fact that decision making is based on the costs and benefit of such decision (DesJardins and Bell, 2006).

Demand Theory

The other theory used for enrollment analysis is the demand theory. Demand increases or decreases respectively with a fall or rise in price (Oyeniya, 2005). Hence an inverse relationship exists between the price of a commodity and its own price. This is usually referred to as a change in quantity demanded. Other factors that can lead to a large increase or decrease in demand include the price of other commodities, income, taste, and other non-price factors. This type of change is usually called a change in demand which consequently leads to a complete shift of the demand curve (Desjardins and Bell, 2006). In relation to education, demand theory posits that enrollment decreases as tuition and school fees increases and enrollment will increase when tuition or school fees decreases. In addition, the theory explained that the tuition prices of competitors will exert a positive effect on students' enrollment in higher institutions.

Literature Review

In a meta-analysis of studies of student price response in higher institutions conducted between 1967 and 1982, Leslie and Brinkman (1987) concluded that a \$100 tuition price (in 1982 dollars) increase to be associated with a 0.6 to 0.8 percentage point decrease in college enrollments. In the same vein, Heller (1997) updated Leslie and Brinkman (1987). He mainly examined the impact of tuition price on students' enrollment; the impact of financial aids on college enrollment and the impact of financial aid on students' enrollment from a different heterogeneous background such as race, income, and different sectors of the college. He concluded that a \$100 increase results in a 0.5% to 1.0% reduction in enrollments. But he showed that the empirical work he investigated used data from the 1970s and 1980s, so the effect might not generalize to the higher tuition response at the time of his analysis.

Bezmen and Depken (1998) empirically studied the determinants of demand for 1134 higher institution in the United State based on cross-sectional data between the year 1994 and 1995 academic session. They employed a pooled data for public and private schools and sub-sample for private and public higher institutions separately. Their study reported a direct link between fresh application and non-indigenous tuition fees and indirect relation to indigenous tuition. They also concluded that students who applied to higher institutions in private schools are more sensitive to price than public school applicants. In related research, Wetzel et.al. (1998) empirically investigated the sensitivity of differences in the complexion of students to changes in the real net cost for urban, large and public universities during the period of four years (1988-1993). Generalized Least Squares (GLS) method was used as the estimation technique. The study concluded that students' enrollment are not sensitive to the net cost of education, however, the black students who are the minority are more sensitive to net cost. An empirical investigation on the sensitivity of students' enrollment with respect to changes in students' fees was performed by Vasigh and Hamzee (2004). The study used an aggregate students' enrollment model for

H-University which is a private institution. Ordinary least square method of analysis was used as the estimation technique. The study concludes that financial consideration has a limited effect on students' enrollment in H-University. Shin and Milton (2007) studied the response of students in diverse major courses to tuition fees, college expenditures and future earnings. The majors' academic courses include Engineering, Physics, Biology, Mathematics, Business and Education. They applied ordinary least square method to analyze their model. They found an elastic relationship between student response and tuition fees in Physics, Biology, and Business. They concluded that student enrollments in the various disciplines were affected differently by tuition. The findings also supported a cost-related tuition fees. This is a way of charging higher cost disciplines higher tuition fees and lower tuition fees for lower-cost disciplines. Gallet (2007) performed a meta-analysis of the students demand in the literature using the data collected from 60 higher institutions studies. They examined 295 estimated tuition elasticities and 154 investigated income elasticities. The study found out that there is a large disparity in the elasticity results in the literature. The mean of tuition (income) elasticity is -0.60 (1.07), while the standard deviation is 1.00 (1.97). He concluded that for both, tuition and income elasticities were more inelastic in the short run than the long-run estimates. Hemelt and Marcotte (2008) examined the impacts of an increase in tuition fees on a total number of enrollments and credit hours, and estimated disparities by type of higher institution. They estimated log-log model where enrollment was modeled as a function financial aids, mean of 4-year tuition and fees, community college tuition and fees average, mean of per capita income, number of graduates and unemployment rate. They employed a fixed effect OLS technique to estimate their panel model. They found that the mean tuition elasticity of total headcount was -0.1072. So, at the mean, a 100 dollar increase in tuition would lead to a decline of 0.25 per cent in students' enrollment. They concluded that there was no evidence that a large increase in tuition price will lead to a large negative effect on students' enrollment. Farhan (2016) examined the elasticity of demand in higher education and tuition elasticity using comparative analysis between national and international students in publicly funded university in Ontario. He categorized the universities into three which are research, teaching and comprehensive intensive. The study established a significant positive relationship between tuition fees and students' enrollment for international students while the negative impact was found for national students with diverse magnitudes. Langelett et.al (2015) also examined the elasticity of demand for tuition fees based on the student data. They completed a survey of 161 students in the state University at South Dakota. They created a quasi-demand curve using conditional logit model. The study showed that the price elasticity of demand for tuition fees was negatively elastic. Crouse (2015) estimated the tuition elasticity of students' enrollment for 2 years colleges in the United States. The model was estimated using generalized method of moment's estimator. From the study, he presented empirical evidence that suggested that the tuition elasticity of enrollment in United States was -0.2063. He also explained that a 100 dollar increase in tuition and fees led to a reduction of 0.883 per cent in enrollment. The study concluded that colleges in the community were normal goods and they serve as substitutes to tertiary institution with four years duration. Brown, McClary and Bellingar (2012) conducted a research on students' determinants of demand at Florida Southern College. Students' enrollment was estimated as a function of net tuition fees and non-price factors such as income, the number of high school graduates in both state and nationwide, disposable and non-disposable income, unemployment and interest rate. The study found that price-adjusted net tuition, real per capita income, the number of high school graduates and the unemployment rate were statistical determinants of freshman enrollments in Florida.

Price and Sheftall (2015) investigated the price elasticity demand model for students' enrollment at black Colleges for males; a private school. The research was conducted between

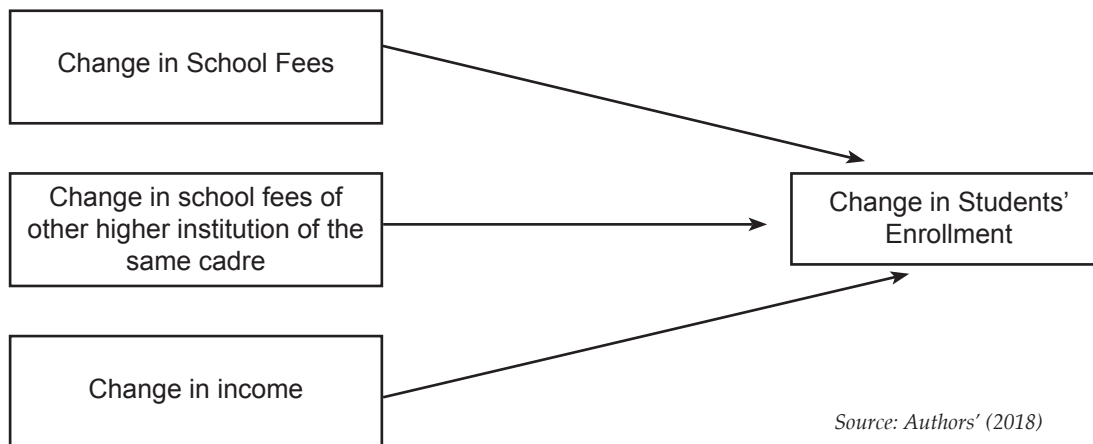
2009 and 2010. They based the investigation on Internal survey data and counting data estimator technique was applied to the estimation technique. By running a poisson probability distribution regression; the study concludes that the students' enrollment proxied by students' course hour, enrollment is income elastic and price inelastic. Milen and Alema (2016) computed the tuition elasticities of in-State and out-state enrollment at south-eastern public universities between the year 2003 and 2010. They employed fixed effect OLS estimation techniques. They developed models for both residents and non-residents enrollment as well as aggregate model for enrollment. The study however, considered the decision-making process of the students who enroll outside their state and they control for competing pricing in enrollment. The study concluded that students' enrollment is price elastic for in-state and Inelastic for out-state. Chen (2016) conducted a research on the effect of rising college costs on freshman enrollment. The study was conducted for the public teaching university for the year 2001 and 2013 using the ordinary least square method. The results showed that freshman and tuition fees had significant negative effect on enrollment tuition. The price elasticity was more than unity in 2012 and 2013. The elasticity coefficient was -1.11, and -1.20 respectively. Thus, an increase in tuition fees by the institution since 2012 caused a decline not only in freshman enrollment but also in tuition revenue. As a result, they concluded that the university should not rely on an increase in tuition fees as a revenue-enhancing mechanism any longer.

In Nigeria, Akinyemi, Ofem and Adebisi (2012) examined the impacts of tuition fees on households' income, students' enrollment and gender disparity using a comparative descriptive method of analysis between private universities and state-owned universities. Their study showed that the students in private universities paid more than their counterparts in state owned universities because they were profit maximizer institutions and that households' demand for university education was inelastic. Satope (2014) also examined the factors that determine the enrollment of students in Nigerian universities. She modeled students' enrolments as a function of academic staff, non-academic staff and financial capital. Vector-error correction mechanism was used as estimation technique for the study. The study concluded that both financial capital and academic staff have significant positive effect on students' enrollment in Nigerian universities.

Conceptual Framework

The conceptual framework for this study which shows the schematic link between the determinants of students' enrollment is presented below:

Figure 2: Schematic Link of determinants of students' enrollment



Source: Authors' (2018)

History of Al-Hikmah University

Al-Hikmah University is a faith-based university which was established in the year 2005 in Ilorin, Kwara State, Nigeria by Abdur-Rahman Oladimeji Islamic Foundation in Nigeria. The first academic session began in 2005/2006 with three Colleges: Natural Sciences, Management Sciences and Humanities and Social Sciences. In 2012/2013 and 2014/2015 sessions College of education and Law were added to the existing colleges respectively. The Colleges were later referred to as Faculties in the academic year 2016/2017.

Historical Trend of Fresh Student Enrollment in Al-Hikmah University

Al-Hikmah University commenced with 70 students across the three colleges in 2005/2006 session as shown in Table 1 and Figure 3. The student enrollment increased by 101.4 percentage change in 2006 /2007 when the student enrollment increased to 141. The increase in students' enrollment continued though at a lesser percentage until 2009/2010 when the percentage change increased by 41.21 per cent.

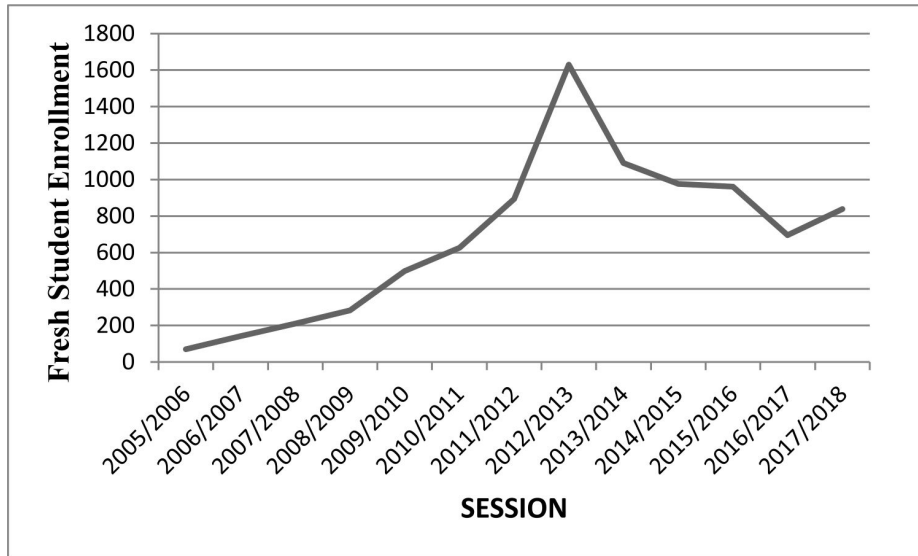
However, the increase percentage change dropped in the following year and later picked up again in 2011/2012 session. Thereafter the positive change reached the maximum in 2012/2013 session when fresh students' enrollment reached 1630. In the academic session of 2013/2014, student enrollment decreases by 33.13 per cent and the decrease continued at a lesser degree till the 2015/2016 session. The level of reduction jacked up again in 2016/2017 to 27.58 per cent. However, in the academic session of 2017/2018, the change in students' enrollment became positive again (i.e increased by 20.55 per cent).

Table 1: Fresh Student Enrollment in Al-Hikmah University

Year	Fresh Students' Enrollment	Percentage Change in Students' Enrollment
2005/2006	70	
2006/2007	141	101.4285714
2007/2008	210	48.93617021
2008/2009	283	34.76190476
2009/2010	498	75.97173145
2010/2011	626	25.70281124
2011/2012	894	42.8115016
2012/2013	1630	82.32662192
2013/2014	1090	-33.12883436
2014/2015	977	-10.36697248
2015/2016	961	-1.637666325
2016/2017	696	-27.57544225
2017/2018	839	20.54597701

Source: Authors' 2019 based on data gathered from the School's ICT Unit

Figure 3: Trend of Fresh Students’ Enrollment in Al-Hikmah University



Source: Authors’ (2018) Computation, based on data gathered from the School’s ICT Unit

Historical Trend of School Fees Charges in Al-Hikmah University

The school fees charged in Al-Hikmah did not change for the first three consecutive sessions i.e. 2005/2006 to 2007/2008 according to the information gathered from the bursary unit. This is shown in Table 2 and Figure 3 respectively. In 2008/2009 there was 30.67 percentage increase in the total cost of attending Al-Hikmah University. In the following year, the percentage change in school fees was approximately 38.03.

The increase in 2010/2011 though still positive, fell drastically to 4.59 per cent. It later rose again in the following year by 17.40 per cent. Afterward, there was no change until 2013/2014 when it rose by 28.12 per cent. In 2014/2015 the percentage increase was very modest with 0.97 per cent and there was no change in 2015/2016 session. The school increase again in the 2016/2017 session just by 4.39 per cent and 2017/2018 witnessed no change in school fees.

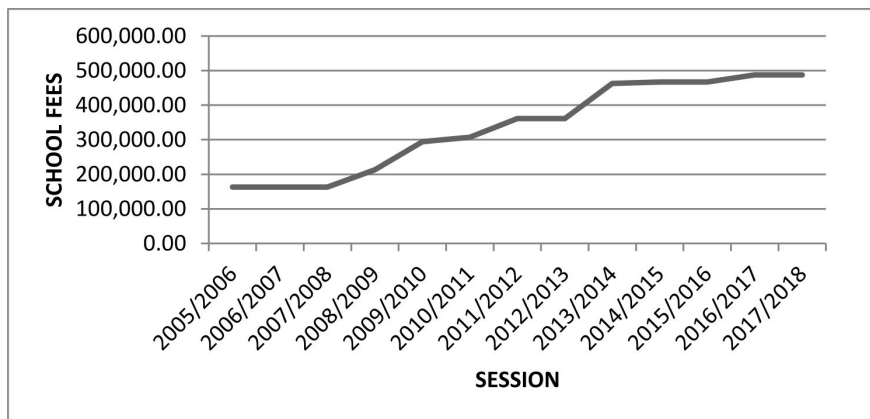
One major feature of the trend in school fees during these periods is that the school keeps on rising and not otherwise though the magnitude of change never reached 50 per cent. In fact between 2014/2015 and 2017/2018, the increase was a steady change.

Table 2: Trend of School Fees Charges in Al-Hikmah University

Year	School fees(N)	Per Cent Change In School Fees
2005/2006	163,000.00	
2006/2007	163,000.00	0
2007/2008	163,000.00	0
2008/2009	213,000.00	30.67485
2009/2010	294,000.00	38.02817
2010/2011	307,500.00	4.591837
2011/2012	361,000.00	17.39837
2012/2013	361,000.00	0
2013/2014	462,500.00	28.11634
2014/2015	467,000.00	0.972973
2015/2016	467,000.00	0
2016/2017	487,500.00	4.389722
2017/2018	487,500.00	0

Source: Authors' (2018) based on data gathered from the School's Bursary Unit

Figure 3: Trend of Fresh School Fees Charges in Al-Hikmah University



Source: Authors' Computation, (2018) based on data gathered from the School's Bursary Unit

Model and Methodology

For the purpose of this study, an enrollment model was developed to follow the standard theory of demand. In this study, students' enrollment is a function of current school fees, average tuition of other private universities, and per capita income.

In econometric form: $STE_{it} = \beta_0 + B_1 SF_{it} + B_3 APU_{it} + B_4 Y_{it} + \epsilon_{it}$1

Taking the logarithm of equation 1 it becomes:

$LSTE_{it} = \beta_0 + B_1 LSF_{it} + B_3 LAPU_{it} + B_4 LY_{it} + \epsilon_{it}$2

Where STE= Students' Enrollment

SF = School fees

APU= Average price of other private university

Y = Per capita income

The study employed the ordinary least square method to estimate the panel data that ran through the five faculties between the year 2013 and 2017. The limitation on these few years was the availability of the data that averagely ran across the faculties. Hausman test was used to determine the best method of estimation. The test, however, applauded fixed effect panel least square as the best method.

Empirical Results and Analysis

The panel regression result is presented in Table 3. The result shows a negatively significant impact of school fees on students' enrollment in Al-Hikmah University, between the periods of 2013 and 2017. The result is significant at 5 per cent level. The result also indicates an insignificant effect of both average school fees of other private universities and per capita income on students' enrollment.

The results also indicate that the average price elasticity is consistently below unity over the periods of the study. The average elasticity for the periods of study is -0.2680. As a result, the annual average price elasticity is inelastic. Furthermore, it means that an increase of N100 in school fees will reduce students' enrollment by about 27. The negative sign of the elasticity also indicates that the students' enrollment has close substitute in the economy.

The R^2 which is coefficient of determination is 0.85 per cent. This simply means that about 85 per cent of the total variation is accounted for by this regression. The F-Statistic also confirmed that the model is of good fit at 5 per cent significance level.

Table 3: Regression Result

Total panel (unbalanced) observations: 135				
Dependent	LSTE			
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	282.4842	65.47653	4.314281	0
LSF	-0.0005	0.000142	-3.53878	0.0006
LAPU	-2.66E-05	2.76E-05	-0.96292	0.3379
LY	9.59E-06	3.81E-05	0.251571	0.8019
R-squared	0.846447			
Adjusted R-squared	0.794239			
F-statistic	16.21299	Durbin-Watson stat	2.482313	

Source: Authors' (2018)

The results also indicate that the average price elasticity is below unity consistently over the periods of the study. The average elasticity for the periods of study is -0.2680. As a result, the annual average price elasticity is inelastic.

Furthermore, it means that an increase of N100 in school fees will reduce students' enrollment by about 0.27 per cent.

Discussion of Results

The statistically negative significance of school fees on students' enrollment in Al-Hikmah University agreed with the well-established hypothesis of the existence of the negative impact of school fees on students' enrollment. Based on the result, a N100 increase in school fees will reduce the students' enrollment by 0.27 per cent. The result is consistent with Hemelt and Marcotte (2008).

The inelastic result simply indicates that in the future the increase in school fees will not affect the students' enrollment significantly. It may also mean that those people patronizing Al-Hikmah University are looking beyond the school fees; perhaps they patronize Al-Hikmah for moral cum religious reason which may be a gap to be filled in future research.

This is because the present study focused only on the effect of price on students enrollment demand. To get a holistic nature of determinants of students' enrollment, further research is required to capture both price and non-price factors that determine the students' enrollment in Al-Hikmah University.

Conclusion

The study empirically investigated the impact of school fees on students' enrollment in Al-Hikmah University between the period of 2013 and 2017. The result indicates and confirms the notion that the effect is negative. The study also established that the price elasticity of school fees on students' enrollment is inelastic. Therefore, this study recommends that studying the students' enrollment determinants will guide the school management and policymakers to develop an appropriate market strategy to boost the school revenue.

References

- Akinyemi, S., Ofem, I. B., & Adebisi, O. (2012). Educational financing reforms in Nigeria: A survey-based cost implications analysis for university education. *International Journal of Humanities and Social Science*, 2(15), 155-165.
- Barro, R. J. (1996). *Determinants of economic growth: A cross- country empirical study* (National Bureau of Economic Research, working paper no. 5698). Retrieved from <https://www.nber.org/papers/w5698>.
- Bezmen, T., & Depken, C. A. (1998). School characteristics and the demand for college. *Economics of Education Review*, 17(2), 205-210.
- Bolaji, O. O. (2008). *Public-private partnership of higher education financing in Nigeria: The case of user fees*. Retrieved from <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.596.3458&rep=rep1&type=pdf>
- Breneman, D. W. (1994). *Liberal Arts Colleges: Thriving, Surviving, or Endangered?* Washington, D.C: Brookings Institution.
- Brown, C., McClary, A., & Bellingar, J. (2012). Determinants of student demand at Florida Southern College. *Journal of Case Research in Business and Economics*, 5, 1-9.
- Bryan, G. A., & Whipple, T. W. (1995). Tuition elasticity of the demand for higher education among current students: A pricing model. *The Journal of Higher Education*, 66(5), 560-574.
- Campbell, R., & Siegel, B. N. (1967). The demand for higher education in the United States, 1919-1964. *The American Economic Review*, 57(3), 482-494.
- Chen, S. J. (2016). College Costs, Freshman Enrollment, and Student Quality: Evidence From An Urban State University. *International Journal of Information and Education Technology*, 6(9), 664-671.

- Crouse, J. T. (2015). Estimating the Average Tuition Elasticity of Enrollment for Two-Year Public Colleges. *American Journal of Economics*, 5(3), 303-314.
- DesJardins, S. L., & Bell, A. (2006). Using Economic Concepts to Inform Enrollment Management. *New Directions for Institutional Research*, 2006(132), 59-74.
- Gallet, C. (2007) A comparative Analysis of the Demand for Higher Education: Results from a Meta-Analysis of elasticities. *Economics Bulletin*, 9(7), 1-14.
- Heller, D. E. (1997). Student price response in higher education: An update to Leslie and Brinkman. *Journal of Higher Education*, 68(6), 624-659.
- Homans, G. (1961). *Social Behaviour: Its Elementary Forms*. London: Routledge and Kegan Paul.
- Farhan, B. Y. (2016). Tuition elasticity of demand as a tool to manage higher education institutions. *International Journal of Arts & Sciences*, 9(1), 159-172.
- Freeman, R. B. (1986). Demand for education. In Ashenfelter, O.C. & Layard, R. (Eds.), *Handbook of Labor Economics* (pp. 357–386). Amsterdam: Elsevier B.V
- Hechter, M. & Kanazawa S. (1997). Sociological Rational Choice Theory. *Annual Review of Sociology*, 23(August), 191-214.
- Hemelt, S. W., & Marcotte, D. E. (2011). The impact of tuition increases on enrollment at public colleges and universities. *Educational Evaluation and Policy Analysis*, 33(4), 435-457.
- Heller, D. E. (1999). The effects of tuition and state financial aid on public college enrollment. *The Review of Higher Education*, 23 (1), 65-89.
- Kane, T. J. (1995). *Rising public college tuition and college entry: How well do public subsidies promote access to college?* (Working paper No. w5164). Retrieved from <https://www.nber.org/papers/w5164>.
- Langelett, G., Chang, K. L., Ola'Akinfenwa, S., Jorgensen, N., & Bhattarai, K. (2015). Elasticity of Demand for Tuition Fees at an Institution of Higher Education. *Journal of Higher Education Policy and Management*, 37(1), 111-119.
- Leslie, L. L., & Brinkman, P. T. (1987). Student Price Response in Higher Education: The student demand studies. *The Journal of Higher Education*, 58(2), 181-204.
- Marcucci, P.N. & Johnstone D.B (2007). Tuition Fee Policies in Comparative Perspective: Theoretical and Political Rationales *Journal of Higher Education Policy and Management*, 29 (1), 25-40.
- OECD (2006). Equity in Education Thematic Review, Finland Country Note.
- Olaniyan D.A. & Okemakinde T. (2008). Human Capital Theory: Implications for Educational Development, *European Journal of Scientific Research*, 24(2),157-162
- Oyeniyi, T.A (2005). *Microeconomics: Theory and Application*. Lagos Nigeria: Cedar
- Paulsen, M. B. (2001). The Economics of Human Capital and Investment in Higher Education. In M. B. Paulsen & J. C. Smart (Eds.), *The Finance of Higher Education: Theory, Research, Policy & Practice* (pp. 55-94). New York: Agathon Press.
- Price, G., & Sheftall, W. (2015). The Price Elasticity of Freshman Enrollment Demand at a Historically Black College for Males: Implications for the Design of Tuition and Financial Aid Pricing Schemes that Maximize Black Male College Access. *The Journal of Negro Education*, 84(4), 578-592.
- Ravallion, M.& Chen,S. (2003). Measuring Pro-Poor Growth, *Economics Letters*, 78(1), 93-99.
- Romer, P.M. (1986). Increasing Returns and Long-Run Growth. *Journal of Political Economy*, 44(5),1002-1038.

- Satope, F. B. (2014). Determinants of Enrolment in Nigerian Universities. *Economics World*, 2(4), 238-251.
- Schultz, T. P. (2002). Why Governments Should Invest More to Educate Girls, *World Development*, 30(2), 207-225.
- Sen, A. (1999). *Development as Freedom*. New York: Alfred Knopf.
- Shin, J. C., & Milton, S. (2007). Student Response to Tuition Increase by Academic Majors: Empirical Grounds for a Cost-Related Tuition Policy. *Higher Education*, 55(6), 719-734.
- Todaro, M. P., & Smith, S. C. (2011). *Economic development* (11th ed.). Harlow: Pearson Education Limited.
- Vasigh, B., & Hamzaee, R. G. (2004). Testing sensitivity of student enrollment with respect to tuition at an institution of higher education. *International Advances in Economic Research*, 10(2), 133-149.
- Wetzels, J., O' Toole, D. and Peterson P. (1998). An analysis of student enrollment demand. *Economics of Education Review*, 17(1), 47-54.
-

Author's Profile

Saidat Oluwatoyin Onikos-Alliyu is a Lecturer in Department of Economics, Al-Hikmah University, Ilorin, Nigeria. She holds a Ph.D degree in Economics from University of Ilorin. Her Area of interests include: Transport Economics, Microeconomics and Islamic Economics.

Attahiru Vatsa AbdulAzeez obtained his B.Sc. Economics Degree from Al-Hikmah University Nigeria. He is currently serving the country through National Youth Service Commission, in Nigeria.
