

Economics of Tuition Fees: Cost-Benefit Analysis of a Differentiated Tuition Fee System in Selected Ugandan Universities

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Abstract

The post millennium development (sustainable development) goals are a long term strategic plan by the United Nations' member governments meant to ensure improved human development. Human development, the main sustainable development goal can emanate from product differentiation. Access to education is a sustainable development strategy that can improve quality of life. A differentiated tuition fee system is thought to be one of the approaches to improve people's quality of life. Anchored on the monopolistic price discrimination theory (third degree), this paper examined the costs and benefits derived from a differentiated tuition fee system in selected Ugandan universities. To achieve this, a descriptive correlation approach and mixed explanatory designs (quantitative and qualitative) were adopted. The study found tuition fee differentiation system to have a significant correlation with benefits accrued and an insignificant correlation with costs involved.

Keywords: cost-benefit analysis, differentiated tuition fee system, economics of tuition fees

1. Introduction

The nature and extent (bases) of tuition fee discrimination can be explained by Canton and Vossensteyn (2011). For example, in the US, tuition fee discrimination is mainly limited to foreign students. Public schools do not charge tuition and have open admission policy. In the Netherlands, though tuition fees for regular full-time students is centrally determined by the government, onus is on these universities to freely determine tuition fees for full-time students not eligible for student support, part-time students, and external candidates. In the United Kingdom tuition fees are uniform, and centrally determined by the government for regular full-time EU undergraduate students. However, universities are free to set their own charges for part-time students and for non-EU overseas students.

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There are several theories regarding emergence and the growth of private university education in the modern world. These can be viewed from two major angles: the demand side, and the supply side. On the supply side, with globalization, privatization drive and need to serve international markets, many firms have come up to supply university education. It is no longer a state duty to do so. Investors are moving in to reap profits from this service production.

Consequently, monopoly tendency is diminished moving towards competitive oligopoly. With this, there is increasingly high level of tuition discrimination alongside product differentiation. Increasing competition among producers is mandating constant costs of production across universities such that the level of price discrimination determines the level of enrolment and in what course or program and when. This greatly influences the amount of profits reaped by each university. Therefore, product packaging (course offered, when: day, evening, night, weekend, and or holidays) will determine the amount of revenue generated. On the demand side, for-profits universities appear to respond strongly to the demand for education among the traditional college-age population.

Within the last two decades, Uganda has witnessed mushrooming tertiary education institutions particularly, those offering university education. This is motivated partly by the increased privatization drive that was sparked off by the late 1980's International Monetary Fund (IMF) and World Bank's structural adjustment program. By then, the Uganda government had only one Makerere University operating as a public university. This and other state-run agencies had drowned the country into a sea of public debts. A world-wide tablet for shedding off fiscal burden was to privatize all state enterprises, so as to downsize the load on state shoulder. This was a welcome move to the government. In the education sector, Makerere University introduced the first non-state sponsored students in 1993. Since then, purely private, and public-private co-sponsored universities emerged. Most of these by now have gone global. Kampala International University, Bugema University, Nkumba University, Kyambogo University, Mbarara, Gulu, Busitema University and others have since then, emerged due to privatization and decentralization programs offering different courses and programs, and admitting both national and foreign students.

Table 1: Summary of Tuition Fee* Differentiation in Selected Ugandan Universities										
Course		Business			Education			Social Sciences		
Program		Day	Evening	Weekend	Day	Evening	Weekend	Day	Evening	Weekend
KIU	UGX	950,000	1,020,000	1,100,000	820,000	NA	850,000	830,000	850,000	890,000
	USD	760	810	815	630	NA	650	600	650	670
KYU	UGX	850,000	906,000	NA	550,000	580,000	NA	600,000	620,000	NA
	USD	705	765	NA	570	600	NA	610	630	NA
MUK	UGX	1,050,000	1,025,000	NA	620,000	670,000	NA	800,000	840,000	NA
	USD	910	918	NA	558	614	NA	610	621	NA

Source: *University brochures, 2014*

Legend:

UGX: Ugandan shillings

USD: United States dollar

KIU – Kampala International University; KYU-Kyambogo University; MUK-Makerere University; NA – Tuition not reflected in the brochure.

Fees* reflect the average (from internal differentiation) departmental semester tuition excluding functional charges

In their operations, according to their seasonal advertisements, all these universities practice tuition fee differentiation. Some programs, courses, specializations seem too expensive for ordinary citizens. A program or course with in the same intake may have a different fee structure due to: student nationality (national or foreign); time of offer (day, evening or weekend); and year of study (fresher or continuing student); course of study (Business Management, Education, Social Sciences). Interestingly, with in these courses, there are further tuition differentiations basing on specialization; for example Business Management in

accounting, Business Management in procurement and supplies management, Business Management in human resource, Business for Executives. One may wonder why this nature of business management in education sector. With increased competition in the business of providing university education, why would universities not 'universalize' or harmonize tuition fee structure? As to whether there are costs and benefits associated with a differentiated tuition fee system, is an empirical question in this study. The study purpose was embedded in testing the null hypothesis of no significant relationship between tuition fee differentiation and the costs involved and benefits accrued. Knowledge from this assists in decision making by new venture capitalists and the would-be students in their choice of courses and programs and the decision to study from home or abroad. This was planned to be achieved through: identifying the bases of discrimination, establishing the benefits, determining the costs and correlate the variables with tuition fees differentiation.

2. Review of Related Literature

2.1.Third Degree Price Discrimination Theory and Economics of Tuition Fees

'Third Degree' Price Discrimination Theory posits that separate markets and customer groups are charged different prices not reflecting differences in costs of production but differences in elasticity of demand. The firm is able to segment its customers into two or more separate markets; each market is defined by unique demand characteristics and the game is enforced purposely to maximize profits. In the market, a firm might find that by charging a higher price ' P_1 ' and selling a level of output ' Q_1 ' in the first market and a lower price ' P_2 ' selling a level of output ' Q_2 ' in the second market; profits are greater than in that firm charging a single price ' P^* ' ($P_2 < P^* < P_1$) for all units sold. When this is done, assuming that total costs are the same in either of the markets, third degree price discrimination will benefit the firm in a way that: $P_1Q_1 + P_2Q_2 > P^*Q^*$ ($Q^* = Q_1 + Q_2$). For this policy to be effective, some conditions must be fulfilled: (1) the firm must be able to prevent a third party from engaging in arbitrage (buying in the second market at a price slightly above P_2 and selling in the first market at a price slightly below P_1 forcing both prices towards P^*) and profiting from the price differences; (2) the markets must be kept separate and; (3) the costs of separating the market must be small.

Relating this theory to tuition fee differentiation in Ugandan universities, nationals pay lower than foreigners for the same course. Likewise, according to schedule (day, evening, weekend, and or holiday) students pay different tuition fees. Same article attracting different prices. The justification for this practice is that the producer extracts consumer surplus, maximize sales, revenue and profits. The challenge however is that the costs of dividing the market may be so high that producer surplus is minimized. This theory is therefore relevant in the study of costs and benefits of a differentiated system. Elasticity of demand for the course/program is determined greatly by changes in the relevant enrolment given tuition level. Many firms have the ability to charge prices for their products consistent with their best interests even though they may not be characterized as monopolies. This is the scenario in Ugandan universities. Despite of increasing competition in the provision of university education, different universities behave as oligopolists (price makers and charge different tuition). These price makers operate in competitive markets but find that due to unique characteristics of their products or industry they may have some discretion over product pricing.

2.2 Cost-Benefit Analysis of a Differentiated Tuition Fee System

On domestic and international tuition fees in African universities, Okeke (2010), discusses the implication of the tuition fees disparities that persist within African universities whereby various students are charged fees on the groups of being either domestic or international students. Okeke argue that attempts towards the promotion of an all inclusive higher education environment within Africa while neglecting the implications practices within Africa's Universities negates all efforts towards true Africanization.

Scott Jaschik (2013) on differential tuition impact concludes that when public universities impose higher tuition rates for some academic programs, students are discouraged to enroll in some fields, his study found that enrollment decisions of female and majority students are more likely to be influenced (negatively) by higher tuition rates for programs than are white men. And the study finds no evidence that additional financial aid negates the impact of higher rates for selected programs.

Stange (2013) in a research paper released by University of Michigan, used data from the integrated Postsecondary Education Data System for 161 public Universities, He examined 50 universities that had imposed additional tuition for some fields, and looked at the impact after three years of higher fees for engineering, business and nursing. He finds different levels of price elasticity for different disciplines and that policymakers should not assume they will get same increase across disciplines for hiked tuition rates. He also noted that for expensive fields like engineering, colleges may not gain much additional money from raising rates where the institutions could end up with smaller numbers of students.

On the supply side, Breneman, Pusser, and Turner (2006), in an excellent volume on for-profit higher show that; on the supply side, several innovations implemented in the for-profit sector that have contributed to lowering the costs of education provision, allowing opportunities for greater profits. Examples include online learning, variable tuition pricing, and the use of non-tenured faculty. These supply-side innovations have allowed for-profit institutions to capitalize on increased demand for education, particularly among older, non-traditional students, as they respond to labor market conditions and the rising returns to education and training over the last few decades. An understanding of the demand side factors influencing the size and growth of universities require a comprehension of the characteristics of the students attending these institutions and the courses/programs they opt for (Cellini, 2012). Literature shows that majority of the students from low income families attend programs /courses that are cheaper (Chung, 2009). Universities that differentiate tuition fees reap fatter revenues than those whose charges are determined by the central government (Bailey, 2001).

On benefits of tuition fee differentiation, the question is... 'what will happen when institutions are permitted to set tuition fees themselves'? Tuition fees would then more closely reflect actual costs and market conditions. This will promote competition in the higher education sector. Schools try to differentiate themselves by looking for niches in the market, i.e. particular price-quality. The match between demand and supply will improve, as institutions become more responsive to students' need and social demand. Competition for students will be fostered (through tuition discounting, for instance), and institutions try to recruit students who fit best with the study program (Canton & Vossensteyn , 2011).

According to Cellini (2012), when tuition fees are centrally determined and uniform across subject areas, student selection may only be partially successful as a vehicle for differentiation. Schools with international ambitions are limited in their freedom to attract additional financial resources as they are unable to charge higher tuition fees, so that they may experience difficulties in recruiting academic staff and students.

It is more unlikely that the pricing policy of the higher education institutions is based on pure profit-maximization. Because of the customer-input technology in educational production, an institution must take account of the effects of its pricing policy on the student population. To facilitate quality-differentiation, it could be helpful to allow the higher education institutions to set their own tuition prices (Canton & Vossensteyn, 2011).

3. Methods and Techniques

Three special caveats in this study were made: first, despite the possible substantial heterogeneity of bases for tuition fee differentiation evidenced in Uganda, the study ideally analyses only fee differentiation according to nationality and program; for only these satisfy the conditions of the third degree level of price discrimination theory. Second, a true Cost Benefit Analysis should account for all costs and benefits accruing to firms in totality, but this study looks at costs and benefits accruing to the firm and students excluding other stakeholders (conditioned measurement approach). And third, other than the traditional-monetary method of comparing costs and benefits, this study does it differently by using views, perceptions and attitudes of selected respondents. With due consideration to the above caveats, the study followed a descriptive analytical survey design and used a stratified sampling strategy (because of different faculties, programs and nationalities) to collect the required data. Both quantitative and qualitative data were collected from each stratum: 4 universities (2 private and 2 public), 3 faculties from each university. Segmentation technique used to collect the data captured the nature of product differentiation. Three variables were used: level of differentiation represented by 4 questions; costs of differentiation (5 questions), and benefits from differentiation (8 questions). Data were analyzed from a sample size of 709 respondents using a 5-point Likert scale.

4. Findings and Interpretations

Descriptive statistics yielded mean index response of 4.5 on the level of tuition fee differentiation showing that the respondents strongly agreed that the practice of tuition fee differentiation is common in Ugandan universities given the minimum average index response of 1 and maximum average index response of 5. This mean-response rate had a standard variation of 0.4. The questions on benefits derived from tuition fee differentiation (to students and the institution), had an index with a mean response of 4.2. Because this figure was closer to 5, for strongly agree, it meant that majority of the respondents acknowledged benefits from the policy. This score was associated with a standard deviation of 0.4 showing the level of response variations on both sides from the mean. On the costs of tuition fee differentiation, the average index score of 4.1 was generated with the highest standard deviation of 0.6. Still, this mean-score index suggested that majority of the respondents strongly agreed that the scheme was associated with costs both to the students and to the institution. Income variations should explain greater deviation in responses on costs of tuition fee differentiation. Rich students who can afford to pay higher tuition tend to take on any course, or program according to their convenience unlike the poor students who tend to follow lower tuition.

The findings reflected that tuition fee differentiation increased: (1) general students' enrolment; (2) institutional revenue; and (3) physical infrastructure. However, the cost of a differentiated system involved the following: increase in general administration and infrastructure expenditure, and reduction in enrolment in some programs, courses and students from various nationalities.

The results on the testing of the null hypotheses of no correlation between tuition fee differentiation and benefits (costs) of the scheme using the Pearson's correlation coefficient technique are: $r_{xy, 0.01} = 0.209$, sig.(2-tailed)=0.00; $r_{xy, 0.01} = 0.039$, sig.(2-tailed)=0.301 respectively for benefits and costs. From this result, the null hypothesis is rejected for the first, and accepted it for the second proposition respectively. The result on the relationship between the policy and benefits accrued implied that tuition fee differentiation significantly yielded positive benefits both to the institution and the students. Thus, privatization and liberalization of education sector allow competition in provision of the service and will greatly improve human development, a post millennium sustainable development goal. The Pearson's correlation coefficient for the policy and associated costs is statistically insignificant implying that though there were associated costs involved in tuition fee differentiation, these costs were minimal. A profit oriented venture capitalist can never fear the costs of subdividing the market to offer his service. Universities can never fear to differentiate tuition even if some courses/programs attract fewer students.

5. Conclusion

Given the various forms of tuition fee differentiation in the Ugandan universities understudy, tuition fee differentiation and expected benefits are positively and significantly correlated statistically. But the system does not significantly correlate with the costs associated with the practice in public universities in Uganda. This conclusion has policy implications. Within the context of the price discrimination theory, for as long as privatization policy prevails, private universities shall always reap more from tuition fee differentiation since the costs implied are not statistically significant.

6. Recommendations

In order to build on momentum generated by the millennium development goals towards a higher quality of life as measured by human development index, countries should embrace liberalization strategy in their education sector to allow private providers break even with government monopoly (product differentiation) in the provision of education. Private providers shall compliment efforts of the government to eliminate illiteracy, and improve standards of living.

Stakeholders particularly students and parents should scrutinize university brochures to properly choose courses and programs that fit within their capacities and capabilities.

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