Determining the Unit Cost of Higher Education: The Case of the Faculty of the Built Environment at Uganda Martyrs University

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Abstract

While the growth in private universities in Africa has met a pent-up demand for university education and are meeting and fulfilling a social function, the economic realities of operating a university cannot be ignored. It is therefore no surprise that within two decades of their founding, private universities are now faced with the reality of the interstices of global economic forces, national societal functions and, for many, ideological mandates that now compel them to rethink the models that the institutions were founded upon. Increasingly, private universities are discovering the dependency complications related to a reliance on a single income source, which is on the whole unsustainable, as they are operating in an environment characterized by much uncertainty. There is a need for private universities to know how to generate additional income to fund not only their operations, but also to ensure an annualised profit as a buffer against any inevitable fluctuations.

This paper provides an overview of the cost of associated with teaching in the Faculty of the Built Environment at the Uganda Martyrs University. While the faculty offers a twenty-first century curriculum with an innovative teaching pedagogy, the faculty faces a challenge in using a higher education program financing model that does not acknowledge varying educational pedagogies, as is necessary in a professional program. Under the current model, the faculty is unable to achieve parity in its budget. The proposed model is based on an appreciation of the different inputs in architecture education, and while they are debatable, it does provide a starting point for dialogue of teaching inputs. The paper concludes by giving some proposals that may be useful to help manage expenditure in individual faculties.

Keywords: Unit cost; higher education funding; institutions; remuneration; workload; quality assurance

Introduction

The need to know the true cost of delivering higher education in East Africa has become more important in recent years. While there are a number of publications that sought to understand the true cost of higher education in the context of higher education in East Africa, such as Aduol (2001), Mwira, et al. (2007) and Kasozi (2009), most attention has been on public universities, with little documentation of the costs associated with delivering education in the private universities (the term "private university" is used to incorporate both not-for-profit private universities along with for-profit universities as well as state supported private universities). The liberalization of the higher education sector in East Africa during the 1990s has resulted in an exponential growth in private universities, particularly in Uganda. It has been assumed for the most part that as these universities were operating in a true market system, and therefore were already aware of the costs they were faced with. However, a review of the fees charged by various private and public institutions across Uganda revealed that the tuition charged by some private universities was actually lower than that of the public universities. Given that public universities are subsidised, this suggests that there may be some inconsistencies in the reporting of the true nature of the cost of higher education, or, more succinctly, the true cost of delivering higher education in Uganda is still unknown.

Up until the 1990s, university education in Uganda was essentially free; consequently the introduction of fees for university education first in the newly opened private universities, and then in the public universities, is still regarded as being inapt. This reaction, it appears, is based more on nostalgia than on a rationalization of the cost of delivering higher education services. As a consequence, there is a widespread belief that the fees charged by private universities are extremely high, with suggestions that private universities are price gouging. This view, it appears, is based on a comparison with the fees charged by public universities, and as such does not account for the fact that public universities are heavily subsidised, not only through direct contributions from government, but also via policies that direct bilateral funding to public universities. The resulting price competition has essentially placed private universities in a no-win situation, trying to compete with the subsidised higher education of the public universities.

This particular study was prompted by a number of issues that had manifested themselves in the Faculty of the Built Environment (FoBE) at the Uganda Martyrs University (UMU) over the previous five years. These included the fact that the FoBE was perceived as being a financial liability to the university, as it had few students compared to the established faculties and had a high-expense structure. It therefore was not generating the desired income for the university. Unfortunately for the

faculty, the two largest income and expenditure units are completely out of its control, tuition income and staff salaries, which are set by the University Council. Consequently, on the one hand, the university endeavoured to ensure its competitiveness in terms of tuition, and on the other hand, the costs associated with operating the university are continually on the rise. Most private universities in Uganda also rely on tuition as the main income source, which, as already mentioned, is pegged to the public university fee structure, and they have tuition regimes that are the same or barely above those of the public universities. As such, a report by Talemwa and Wanyenze (2009) that the two programs offered by the Faculty, the Bachelor of Environmental Design (B.Envi.Des.) and the Master of Architecture (M.Arch.), were the most expensive in the country, may be correct, nevertheless, this could merely be a reflection of the actual cost of architecture education in Uganda.

In this light, the aim of this study was to reveal the cost of operating the faculty, which has always run a deficit. The objective of the study was to ensure that there was an appreciation of what it costs to deliver professional architecture education and thereafter to develop a model that ensured the financial sustainability of the faculty into the future.

Higher Education Tuition Fees in Uganda

Until the 1990s, public universities had a monopoly in the higher education market in Uganda. Deregulation, as part of the structural adjustment measures of the 1990s, ushered in a host of private universities to meet a pent-up demand for higher education. The growth in the sector since has been nothing short of phenomenal. In 1990, there was only one public university (Makerere University) and one private university (the Islamic University in Uganda). By 2010, this number had grown to five public universities (Makerere University, Mbarara University of Science and Technology, Gulu University, Kyambogo University and Busitema University), and twenty-three private universities, of which six had received full Government Charters, a recognition that they had met the minimum standards of quality stipulated by the Uganda National Council for Higher Education (UNCHE). These are the Uganda Christian University, Uganda Martyrs University, Nkumba University, Kampala International University, Ndejje University and Bugema University (UNCHE, 2010).

Private universities in Uganda are, for the most part, self-financing, deriving much of their operational income from tuition fees. It therefore serves to reason that the programs provided were those that were in demand by the market, or more specifically, programs that would easily attract students, and as such guarantee an income

stream. It is therefore not unusual to find similar programs across private institutions: business administration, computer sciences, accounting, marketing, economics, etc., programs which typically do not require major infrastructure inputs (Varghese 2004: Kasozi 2009). This approach, described by Varghese (2004) as the 'super market model' of private university education, only works when there are sufficient numbers of qualified students for a particular program, and while they may be 'profitable' in the short-term, they are very vulnerable to shifts in market demands. Nevertheless, with less than 10,000 university places available, it is still a sellers market, highlighted by data released by the Uganda National Examinations Board (UNEB), indicating that for the 2010 academic year, 60,370 candidates passed the Uganda Advanced Certificate of Education (UACE) examination with at least two principal passes, making them eligible for admission into university level programs (Ahimbisibwe, et. al., 2010). This begs the question of why tuition charged by private universities is at times below the cost of delivering the education, given the large disparity between supply and demand. Further still, the 'super market model' has resulted in numerous, similar, and in some cases identical, programs across the various public and private universities, maybe even within the same university, with faculties and universities scrambling to attract students to bring in extra funding. This approach to higher education is fraught with problems: academic staff numbers are unchanged, facilities and other infrastructure aren't expanded, and the pressure on academic resources, particularly the libraries, increased exponentially. The impact of this approach is being cited as the reason for increasing cases of cheating by students and for a drop in the quality of student projects, as academic faculty were not able to cope with the large student numbers. There is evidence now that this trend is finally being reversed, with Makerere University halving the number of programs it offers, from 130 to seventy, as it was discovered that many were duplicated across different faculties (Kagolo, 2010).

A different approach to university education, presented by Thaver (2008) as the 'boutique model,' advocates for the formulation of programs based on high quality and prestigious programs. Under this approach, private universities offer premium programs, cutting edge facilities and small class sizes and also have high calibre academic faculty and students, consequently charging a premium. This is the model used by the Ivy League universities such as Harvard, Yale and Princeton. The 'boutique model' is suited for professional programs that require a high level of student-instructor interaction, as well as demand high-infrastructure inputs. Olivera presents this scenario in a slightly different way, as follows, "Suppose the public university (which must set a low, or zero tuition fee) imposes a high admission standard. Faced with this, the private university has two options; it can either set a lower standard, thus meeting the unsatisfied demand from students not able to

pass the public university's admission threshold, or it can set a stricter standard and admit few high-ability students, who can be charged a higher fee because they receive higher quality education than in the public university. For a sufficiently high standard set by the state university, the former may be preferable. On the other hand, for the same parameters, if the public university sets a lower standard, the private university will be able to choose a stricter admission threshold and charge correspondingly high fees" (Oliveira 2006, p.2).

Regardless of the model used, inevitably, the issue of operational costs and an income stream to service these costs comes to the fore. To be able to set and charge appropriate fees, three things have to be known: the nature of the market that the program operated in, the purpose of higher education and the actual cost of delivering that education. For the most part in higher education in Uganda, these are gravely misunderstood and under-appreciated.

Briefly, in regard to the nature of the market, and the purpose of higher education, it is often assumed that the number of students applying for a particular program is an indication of the market demand for that particular program. This simplistic approach, however, does not account for a number of personal factors that impact the nature of the application process to university programs. An investigation by Olweny and Nshemereirwe (2006) and Olweny (2008) has shown that in a number of instances, students take a course offered to them for a number of unexplained reasons, among them for the fact that it is a university-level program, regardless of what it is or the institution it is offered by. In some instances, they are instructed to take a particular program by their sponsors. As such, in the context of Uganda, the actual relationship between the market and the demands by students is not clear-cut. Another study by Olweny (2010) suggests that many students are not even informed of the programs they are applying to, let alone what opportunities these could offer them after graduation.

In the case of architecture for instance, the FoBE receives only about 100 applications each year for the undergraduate program. Makerere University, the only other university offering architecture, receives between 150 and 200 applications. Of these, only about twenty to twenty-five percent of applicants are admitted. This, however, certainly does not reflect the market demand for architectural services, as reflected in the architect to population ratio for Uganda (see Table 1).

Tab. 1: Number of Architects in Different Countries
(Adapted from Tombesi, 2004 and Kasozi, 2005)

Country	Population	Architects	Ratio
Italy	57,500,000	99,300	579
United Kingdom	59,050,000	30,600	1,930
Australia	19,414,000	9,500	2,044
Malaysia	23,802,000	1,600	14,876
South Africa	44,812,000	2,700	16,597
India	1,032,473,000	25,000	41,299
Kenya	33,400,000	800	41,750
Uganda	25,000,000	130	192,308
Tanzania	37,100,000	120	309,167

While there is no ideal ratio of number of architects in a population, a target of 1:40,000, similar to Kenya, would require an additional 500 registered architects today, while a ratio of 1:15,000, similar to South Africa or Malaysia, would require an additional 1,500 architects. Based on current admission and graduation rates, this would translate into around 5,000 and 16,000 applications respectively. This scenario suggests that there is a mismatch between the 'market' and the actual societal requirements, indicating that market demand may well be a lagging rather than leading indicator of the actual requirements of society. This relates back to the purpose of higher education as being more than just a transmission of knowledge and skills, but a foundation for future professional growth. A further complication of the current private university education model is the fact that private universities in Uganda appear to be competing on tuition rather than on anything else.

Tab. 2: Program Fees in Different Universities (UGX)

	Uganda Christian Univ. (2010)	Uganda Martyrs Univ. (2010)	Makerere Univ. (2009)
Bachelor of Business Administration	1,995,000	3,695,000	2,913,500
Bachelor of Science (Computer Science)	2,641,000	3,695,000	3,133,500
Bachelor of Architecture		4,697,000	2,923,500

The figures presented were garnered from the universities' websites and indicate that for some programs, private universities are charging less than comparable

programs at the public universities and in some cases substantially less. This begs the question as to whether the tuition charged by some universities is a true reflection of the cost of the programs, and, if not, how these universities make up the shortfall.

It is at times argued that the ability to pay is a significant factor to consider in the tuition structure of private universities, an argument that is based on the fact that the large majority of Ugandans live in poverty and therefore cannot afford to pay for education. As such, private universities, particularly those founded on religious principles, maintain that they cannot charge fees at a rate commensurate with the actual unit cost, as they are also providing education for the masses. While this is a noble gesture, it does present these universities with a dilemma relating to the cost of offering this service. To meet the cost therefore, they are left with few options: either escalate the number of students admitted to increase revenue or keep expenditure to a bare minimum, which for the most part relates to two areas – staff costs, and infrastructure. The ramifications of such an approach are well documented (see Thaver 2008).

It is often assumed that the cost per student is derived by taking the total expenditure and dividing it by the number of students in a program in order to find the unit cost (Babalola 1998). This simplistic model, however, does not account for the complexities of pricing within faculties and programs. This approach also does not ensure that internal cost structures are in line with best practices, and merely transfers costs to the end user. Further still, in relation to professional programs, such as medicine, dentistry and architecture, the ability to transfer the full cost to the student is limited by a number of factors, in particular the social imperative in relation to education, particularly to professional education. Were students to pay the full cost for these programs, it would not only make the programs unviable, with few students being able to afford them, such a cost structure would effectively also restrict entry to the wealthy elite. In this regard, in setting higher education fees, the Australian Government, in recognition of the social purpose of education, allows for greater subsidies for professional programs such as medicine, architecture and agriculture than is given for other programs (Australian Government 2010). In addition, consideration is given for the future earning potential of graduates, with Oliveria noting, "higher education determines a wage premium in expected lifetime earnings" (Oliveira, 2006 p.4). As such, it is common to find business and law programs having higher tuition than science programs, as is the case in Australia and the United States. This reality is not evident in the tuition structure of university programs in Uganda.

As it is not feasible to continually increase tuition fees, nor cut the quality of education, which can have severe consequences, it is imperative that the role of faculties in the management of resources is vital. For this purpose, this study sought to address these concerns in relation to the Faculty of the Built Environment at Uganda Martyrs University. A faculty, which, due to the nature of professional education, has to utilize the 'boutique model' of education to ensure quality and consistency in its endeavours.

The Faculty of the Built Environment

The Faculty of the Built Environment (FoBE) at the Uganda Martyrs University was founded in 2000 as the first built environment program in Uganda and East Africa to be based in a private university (the Kampala International University had initially stated a program in architecture during the 1990s, but abandoned it within two years). The mission of the faculty is to provide an education to students who wish to become responsible built environment professionals. In order to achieve this goal, it was necessary to implement a 'boutique model' of education, taking in a small number of students, and providing them the best contemporary built environment education to enable them to effectively compete in increasingly competitive and quickly changing professional fields. Currently, the faculty offers two degree programs: an undergraduate Bachelor of Environmental Design, as well as a graduate professional degree, a Master of Architecture, the first professional master's degree program in East Africa. This was only the second professional program in architecture in Uganda and one of six programs in East Africa. In addition to these programs, there are currently plans to introduce two additional master's, a professional Master of Landscape Architecture, as well as a post professional Master of Environmental Design. As the faculty enters its tenth year, there have been questions of its viability, purely in relation to financing rather than academics. In regard to academics, the faculty could not be in a better position, having recently earned Validation from the Uganda Society of Architects (USA) and the Uganda National Council for Higher Education (UNCHE) for its professional architecture program. The faculty is now preparing for international validation by the Commonwealth Association of Architects (CAA), giving international recognition to the program and its graduates.

It was evident that the cost of delivering professional built environment education was higher than had been foreseen. The need for specialized equipment and specialized instructors, are here key factors, bringing this issue to the forefront. With the needs of the faculty, different from those of the other social science faculties, it soon became evident that the prevailing funding structure was out of line with the

needs of the FoBE. With academic units taking more control of their budgeting, it was evident that some adjustments were required for both the income and expenditure in order to ensure a more streamlined process. It was also evident that the faculty, along with the other academic units at UMU, did not have much control over the largest expenditure item on their budgets, staff expenditure. Nor did they have control of the main source of income, student tuition.

Under these circumstances, where salaries represented about fifty percent of faculty budgets, and tuition over seventy-five percent of income, the ability to make any adjustments within such a structure was impossible, to say the least. To increase income essentially meant increasing the number of students in programs and reducing the number of staff teaching them – an approach that has only one possible outcome, reduced quality. While such a scenario may be possible in some programs, it is not in the FoBE given two things, a lack of physical space and a shortage of qualified built environment academics in Uganda. Any increase in student numbers requires a substantial increase in physical space for studios and tutorials. It would also have required a radically different model of architecture education, which, under the prevailing competitive educational system, would be difficult to implement. The shortage of staff and the funding crunch is certainly not unique to Uganda, nor to private universities, as was highlighted by Ostwald and Williams (2007), who found similar problems in their study of architecture education in Australia, New Zealand and Papua New Guinea.

Project Action Plan

The construction of this Project Action Plan (PAP), which I carried out during the International Deans' Course 2009/2010, was a result of the recognizing the virtually impossible task of having to balance a budget based on parameters largely outside the control of the faculty and the need of ensuring quality is upheld, in reference to stipulated criteria from the UNCHE as well as the CAA, for which the faculty is obliged to meet. The 2008 Validation Visit by the UNCHE and the USA highlighted this, with a recommendation that space and academic staff were key issues that had to be addressed. The need to address the entire structure of the faculty had been evident since 2005. However, adjustments had, for the most part, been in relation to pedagogy and curricula issues. It was evident the financial issues needed to be addressed as well, particularly in relation to the largest expenditure unit, staffing. This would of course relate back to the income, and the actual unit cost of running the program. The aim of the investigation was therefore to establish some mechanisms to enable the faculty to appreciate its cost structure and how best to optimize this, while maintaining the quality of education it had become known for. For this

paper, I will be reporting primarily on the cost structure related to academic faculty, which represent a major expense for universities, not only in Uganda, but in much of Africa. The role of academics is also misunderstood, raising questions about key roles of the universities.

Information was gathered from existing university documentation, literature on different approaches to determining faculty finances and through interviews with key stakeholders. It became evident that there were a significant number of unknowns in this area, and as such, the PAP became an ongoing project that will not only help the FoBE, but UMU and other private universities as well. Two publications were particularly useful in formulating of the PAP, Tsang (1999) and Ehrenberg (2002). Tsang (1999) presents the cost of higher education in a broad frame of reference, including, as part of cost structure, individual and societal costs as well as those directly attributed to the higher education institution. Ehrenberg (2002) concentrates on the costs associated with the institutions themselves. For this PAP, I was concerned only with the institutional costs, which include direct, recurrent (personnel costs), non-personnel (instructional materials supplies, utilities, maintenance, student welfare etc) and capital costs (buildings, plant and equipment, etc.). It should be noted, however, that the individual costs associated with a program should not be overlooked, as they can be quite significant, as in the case for architecture programs, where expenses of students in completing projects can be quite substantial.

A key aim was to ensure that the unit cost was derived systematically. As such, a key assumption is the use a steady-state-condition, based on optimum student numbers in the faculty. As such, for this study, the cost basis is calculated based on thirty students per year in the undergraduate program, and en per year for a single graduate program, giving a total of ninety undergraduate students and twenty graduate students. It is also assumes that there is adequate physical space available to accommodate these numbers, which currently is not the case.

Staffing and Teaching

A common approach to staffing of academic programs in private universities in Uganda according to Varghese (2004) has been to rely on part-time academic staff, often 'moonlighting' from public universities, to undertake teaching in various courses. This has been rationalized as being a cost effective option, as recruiting full-time academic staff was regarded as a costly exercise. It was also the case that academic staff from public universities were considered to be the best. Full-time faculty were considered expensive as they were not always in

front of a class teaching, and when semesters were out, faculty were viewed as idle, considering teaching at the narrowest and most basic level – standing in front of a class. This approach has effectively made private universities little more than teaching institutions, with no academics engaging in the other important areas of academic life – administration, research and community engagement, ironically, the basis of promotions. Consequently, it is not unheard of to have full-time faculty teaching more than twenty hours a week. Given time for preparation of course material, student consultations and marking – just on teaching and teaching related activities – academic staff are working over sixty hours a week (based on an internationally recognized model that equates one lecture hour to two hours outside the classroom). With a standard workweek of forty hours, academics, it appears, were working more hours than stipulated in their contracts. An obvious consequence of this is the almost non-existent research output from the many universities across Uganda. Further, the reliance on part-time, seconded staff from public universities essentially renders the private universities no more than teaching centers of the public universities.

This state of affairs was evident in the FoBE, with a severe shortage of professionals in the architecture, planning and engineering disciplines, making it inevitable that faculty would be teaching in more than one university. This approach, however, has serious implication to the nature of education delivered, with academics teaching the same content across the different programs in the various universities, regardless of different epistemological or pedagogical differences that are part of the identity of a particular university. This also has consequences for research and community engagements, as these are always undertaken in the primary place of work. As such, the research output of the private universities has been virtually non-existent. For the FoBE, this also exacerbated an already serious problem, the low level of research and publications in the built environment fields in Uganda.

Academics in the Faculty

A key principle for the Faculty of the Built Environment approach to education is quality, thus the 'boutique model' being employed as its educational model. As mentioned earlier, the faculty currently offers two programs, the Bachelor of Environmental Design (B.Envi.Des.) and the Master of Architecture (M.Arch.) professional program. In addition, the faculty anticipates starting a Master of Landscape Architecture (M.Land.Arch.) professional program within the next year. Accreditation bodies that oversee these programs are the Uganda Society of Architects (USA), the Commonwealth Association of Architects (CAA) and

the International Federation of Landscape Architects (IFLA). Within their rigorous quality framework, the programs can only be validated if they show they meet the stipulated criteria.

As part of its effort to meet these quality benchmarks, the faculty adopted 'problem based learning' (PBL) as its primary teaching pedagogy in 2006. For the faculty, currently the only faculty at UMU using PBL, this was a major and bold step, which unfortunately put the faculty out of step with the prevailing approach to private university education in Uganda. It became apparent in the move to PBL, which was largely for epistemological reasons, it could be useful in addressing the financial shortcomings that the faculty was faced with. It is suggested by Mennin and Martinez-Burrola (1986) that staff costs under PBL are approximately the same as under the traditional lecture-based pedagogy. However, in the traditional lecture-based teacher-centered and subject-oriented curriculum model, it was found that two thirds of staff time was spent preparing for courses, while in the problem-based, student-centered curriculum, which for the most part is undertaken within small-group tutorials, two thirds of the instructor's time could be spent interacting with students, which is a better ratio in regards to faculty productivity and effort. A key factor to consider, however, was a change to the existing financial model that was based on a lecture-based pedagogy and could not account for the myriad of new cost centers that PBL invariably generated.

Teaching Hours

Tab. 3: Working Hours for Teaching Activities, FoBE

	Total Teaching Hours	**Lectures**	**Tutorials**	**Studio/ Workshops**
B.Envi.Des. – Yr. I	976	412	308	256
B.Envi.Des. – Yr. II	1,099	338	346	415
B.Envi.Des. – Yr. III	1,200	300	324	576
Under-Grad. Total	**3,275**	**1,050**	**978**	**1,247**
M.Arch. – Yr. I	1,120	280	280	560
M.Arch. – Yr. II	1,354	226	360	768
Grad. Total	**2,474**	**506**	**640**	**1,328**

The initial step in this process was to determine the actual number of teaching hours for both the undergraduate and graduate programs. This had to take into

account the quality standards, as stipulated by the Uganda National Council for Higher Education (UNCHE), which recommend student to staff ratios for different academic programs. The faculty the impact of PBL is certainly clear, with substantially more teaching hours dedicated to tutorials and studio/workshops than for lectures (See Table 3). Based on a full student complement, the faculty is required to provide 5,749 hours of instruction each year, 3,275 at the undergraduate level and 2,474 at the graduate level.

Using this data, it was also easy to determine the proportion of hours that could not be covered by full-time academic staff, based on a maximum teaching load of twelve hours a week[1], and as such, providing a quick indication of the number of hours that had to be covered by part-time and sessional faculty. These are detailed in Table 4 below, which indicates that about fifty percent of teaching hours for the 2009/10 academic year had to be filled by part-time or sessional faculty. This approach, however, does not account for the different specializations that need to be covered as part of the architecture program, for which a more detailed breakdown of teaching hours has to be undertaken.

Tab. 4: Teaching Hours, FoBE 2009/10

	Total Teaching Hours	**Covered Full-Time Staff**	**Part-Time/ Sessional Staff**
B.Envi.Des. (Year I)	976	598	378
B.Envi.Des. (Year II)	1,099	507	592
B.Envi.Des. (Year III)	1,200	715	485
M.Arch. (Year I)	1,120	390	730
M.Arch. (Year II)	1,354	689	665

A goal of the PAP was to ensure that costs associated with instruction were kept in check. As such, it was necessary to ascertain the nature of the inputs (i. e., lectures, tutorials, studio sessions, etc). Under the lecture-based system, there was no differentiation between lectures, tutorials or studios, which were all lumping together as 'teaching,' with remuneration awarded at a standard rate. A key differentiation factor is preparation time for the different activities, which varies considerably, as presented in Table 5 below:

1 Stipulated by the university Office of Human Resources.

Tab. 5: Working Hours for Teaching Activities, FoBE

Activity	Contact Time	Preparation Time	Total Time
Specialist Lecture	1	3	4
Lecture	1	2	3
Tutorial	1	1	2
Studio	1	0	1

Taking these variations into account is essential in PBL and is key to ensuring that staff workload is distributed equitably, as well as to utilising staff to their full potential. Naturally, this approach has implications to remuneration.

Remuneration

Determining the remuneration levels was perhaps the most controversial element of this PAP. Given the lack of any clear guidelines, this was a difficult task. However, a key goal of any remuneration strategy is to attract and retain qualified and dedicated staff for the different teaching portfolios. Under the current strategy, most private universities have on the whole failed to achieve this, with academics at a comparable level of service working in a number of private universities paid below the rate offered by public universities

It was necessary to establish a base rate on which to base the value of each teaching activity. In determining the cost of education, however, it is often perceived that the entire cost of the academic staff is directly related to tuition, as was evident in the model by Aduol (2001). While their remuneration does contribute to the cost of the functioning of a faculty, not all their time is directly related to the cost of tuition, as only a proportion of their time is directly engaged with teaching and teaching-related activities. In this case, it was determined that the base rate should be derived from the proposed remuneration for a new senior lecturer. The use of a senior lecturer as the base rate for teaching is related to the fact that a senior lecturer position is the median academic position in a university[2].

The proposed model also sought to ensure a connection between the hourly rate for the various teaching activities and staff remuneration for both full-time and part-time/sessional staff, which was critical in plotting a way forward for the faculty, as under the current system part-time and sessional staff could easily earn more than full-time academics, who, in addition to a heavy teaching load, are also burdened with administrative duties that part-time and sessional faculty were not obliged to do, nor were they obliged to undertake research.

2 Under the British model of academics, which is in use in Uganda.

The initial step was to determine the actual hours available to academics as part of their contracts. These were derived by Nshemereirwe et. al. (2010) as part of a workload assessment model for UMU. The actual days available to work each year are determined by taking account all the weekends, public holidays, religious holidays and leave entitlements as presented in Table 6:

Tab. 6: Available Annual Working Days, UMU

Days of the Year	365	365
Weekends	104	261
Easter	3	258
Public Holidays	10	248
Annual Leave	30	218

It was determined that there are actually 218 working days available each year for academic faculty, 109 days per semester. According to the stipulated rules for employees, staff are to work eight hours a day, which, based on the number of working days, makes for 1,744 working hours for the year. This figure thus becomes the basis for calculating the base rate for remuneration.

Taking the base gross remuneration for a senior lecturer at UMU as being UGX 2,400,000 per month, the hourly base rate was determined to be UGX 16,500. This figure therefore becomes the base rate for one teaching unit in the faculty and the basis for calculating pay rates for the different teaching activities: lecturing, tutorials/seminars, studios and workshops. These are presented in Table 7, with Table 8 presenting a comparison between the remuneration rates under the existing model and under the proposed differentiated model.

Tab. 7: Hourly Rates for Teaching Activities, FoBE

Activity	**Time Allocation**	**UGX**
Specialist Lecture (Graduate)	4	66,000
Lecture (Undergraduate)	3	49,500
Tutorial (Graduate)	3	49,500
Tutorial (Undergraduate)	2	33,000
Studio / Workshop (Graduate)	2	33,000
Studio / Workshop (Undergraduate)	1	16,500

Tab. 8: Comparison of Hourly Rates for Teaching Activities, FoBE

Activity	Existing System (UGX)	Differentiated System (UGX)
Specialist Lecture (Graduate)	50,000	66,000
Lecture (Undergraduate)	30,000	49,500
Tutorial (Graduate)	50,000	49,500
Tutorial (Undergraduate)	30,000	33,000
Studio / Workshop (Graduate)	50,000	33,000
Studio / Workshop (Undergraduate)	30,000	16,500

Under the exiting system, all teaching was paid under the same rate, regardless of the inputs required, with the total salary bill for undergraduate teaching using the hours presented in Table 4 being UGX 98,250,000 for the undergraduate program and UGX 123,700,000 for the graduate program, for a total of UGX 221,950,000. Under the revised differentiated model, the costs would be UGX 104,824,500 for the undergraduate program, while for the graduate program it would be UGX 108,900,000, for a total of UGX 213,724,500. This represents a savings of four percent, lowering the wage bill for teaching related activities, while increasing remuneration for activities that require higher preparatory inputs (on costs are not included in this calculation).

Differentiating the cost of activities in this way acknowledges the difference in preparation inputs that are generally not acknowledged under the existing model. The revised model makes it imperative to allocate staff hours wisely, with more experienced and/or qualified faculty being allocated activities in the higher, rather than early years of a program. More experienced academic staff would take on more mentorship roles, for example, having a mix of staff in studio sessions with qualified academics, overseeing and mentoring junior faculty. It could also support the initiating of recent graduates and graduate students as part of the teaching faculty, particularly for workshops and tutorials, which under the existing system was not possible due to the standard means of remunerations.

Adoul (2001) suggests that the cost relationship between the different faculty levels – lecturer, senior lecturer and professor – should be in the ratio 3:4:6, a ratio commiserate with remuneration models used in Australian universities (University of Adelaide, and Flinders University of South Australia among others) and useful in the allocation of teaching duties within faculties. An additional benefit is the ability to use this understanding of cost, along with the appreciation of teaching inputs, to allocate staff where their inputs are best needed, as well as to ensure that the

workload of staff is evenly spread; staff giving lectures could be allocated less contact hours, while those taking tutorials or studios could take up more contact hours. As such, faculty only engaged in giving lectures could only be allocated a maximum of ten hours per week, while on the other hand, if they were only engaged in tutorials, this could go up to fifteen hours, or twenty hours for studio sessions. The allocation model does enable both an equitable distribution of workload, as well as for equitable remuneration between full-time and part-time/sessional staff.

Discussion and Conclusion

Putting these factors together to get a working structure is critical in getting this proposal operational. While it is still in the process of being formulated, the importance of identifying areas that could be rationalized and where it was possible to cut costs without compromising quality was an important step in the process. Key to enabling these findings to be implemented successfully, as part of the process of transforming the faculty, would be to have a reporting and remuneration structure that is easily be understood by faculty and to ensure that staff take ownership of it.

The faculty will be working with an existing structure that allows for the implementation of this model. All courses have course coordinators, who are responsible for the administrative duties associated with the particular courses, including programming appropriate instructors, arranging field trips, etc. Using this existing mechanism, it is possible to determine the different inputs for each course (lectures, tutorials, workshops or studio sessions) and therefore be able to determine the cost for each course unit. This was achieved using a standard spreadsheet format as presented at the end of this paper.

While it was not the objective of this paper to discuss the entire cost structure of the faculty, it is necessary to touch on some other aspects that affect the cost of operating a university faculty. Although teaching is generally the most visible of the cost centers for higher education and therefore where most attention is spent, a number of other costs are evident in determining the unit cost of delivering higher education. These are often neglected, yet they have a direct impact on the quality of the education provided. They include administrative costs of the university, costs associated with infrastructure, and space in the university – neglected as they are operating in existing spaces, or funded from external sources to the university. Nevertheless, there is a cost to the university, particularly in terms of maintenance and running. Infrastructure costs include any physical plant and equipment necessary for undertaking teaching and research, including but not limited to computer

hardware and software, stationery, other consumables and all other non human resources needed to accomplish the academic objectives of the faculty. For the FoBE, additional costs relate to the operation of the Building Materials Testing Laboratory as well as for building environmental research (acoustics, thermal comfort and lighting in particular) can be substantial and need to be factored in to the course structure of the various courses. Other cost centers include research and internal transfers between faculties and departments, particularly for accessory teaching, etc.

Taking these additional aspects into consideration, the study found that the cost of delivering professional architecture education, based on the old expenditure model, was about UGX 9,527,500 per student per annum (UGX 47,637,500 for the five-year program). Under the revised model, this is reduced by approximately eight percent to 8,780,500 per student per annum (UGX 43,902,500 for the five year program). This does not take into account the difference between the undergraduate and the graduate programs. Certainly, the reduction in staff costs is an important factor to consider in the overall financial viability of the faculty. The proposed revision to the remuneration structure would be a step in this direction, however, there would need to be further assessment of the viability of implementing this model, not to mention the need to invest in appropriate teaching aids to ensure this approach is not only realized, but is sustainable. Key to this is to ensure that the remuneration is competitive and as such able to attract academics of the caliber desired by a progressive faculty. Evident also is the fact that the current tuition fees charged are only about fifty percent of what it actually costs to run the programs, which is likely to be the same across other programs in other universities.

As part of the investigation process, a number of bottlenecks were discovered. For example, any talk of finances was unsettling, as it was perceived to be confidential information. As such, deriving information was rather arduous. Further, the persistence of the myth that education in private universities in Uganda is already expensive is a continuing problem. However, it is evident that this is being viewed from the perspective of the public university tuition model and not from the viewpoint of the actual cost of providing the education. It is however evident that the ability to charge fees that are commensurate with the full cost of running a program in the context of Africa is difficult, and therefore, there is a need to ensure that additional income sources are found. There is also a need to balance the social wishes of a faculty or university with the needs to offer quality education, to attract the best students and academic faculty, and to ensure its own existence. Without knowledge of the true cost of the service it is not possible to plan within this context. In the United States, where the cost of private education is probably more accurately

known, the income from tuition and fees constitute about two-thirds of the total budget of universities (College Board 2006). As such, with the current model for private university funding, it is likely that the minimum additional funding required from external sources to ensure the operation of private universities is thirty percent of the overall budget. These targets are also stipulated in the Uganda Universities and other Tertiary Institutions Regulations 2005.

This paper has deliberately concerned itself with expenditure, given that raising income for teaching is generally the role of the university finance office and not the faculty units. This is the case with most private universities in Uganda, where tuition fees are completely outside the control of the faculties. Understanding and appreciating the cost implications of the various teaching inputs has been particularly useful for the Faculty of the Built Environment, as it has helped to ensure the faculty meets the standards of quality it set out to achieve under the 'boutique model' of private education, and necessary for it to maintain its validation status.

Undertaking this PAP has been extremely useful in determining a formula for not only the financial management of the faculty, but also as a means of determining an effective means of running the faculty itself, ranging from the recruitment and allocation of staff to the ability to monitor expenditure, therefore planning for the future. The methodology could certainly be extended to other programs and faculties, and one would hope that this is undertaken in order to dispel the myths associated with the cost of higher education in Uganda. While the task is ongoing, as the full implementation of the outcomes is currently underway, the full impact will not be evident for at least one or two years into the future.

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