



**Strathmore**  
UNIVERSITY

**PRICING AN INSURANCE PRODUCT FOR THE KENYA SCHOOL OF LAW  
TUITION AND BAR EXAM FEE.**

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## ABSTRACT

Education insurance is one of the risk mitigation mechanisms adopted by parents and guardians to secure their dependents' future. This approach largely helps guardians against the risk of being unable to pay for the dependents' education due to several financial shortfalls. Traditionally, several insurance companies have come up with this kind of product targeting the parents and guardians. The product has worked effectively in the market for a good number of years.

However, the need to save for professionalism and the performance of students in the professional field has led to questions around the insurance industry. This study has taken a different turn and developed a whole new product based on the behavior and outcome of major professional trainings and qualifications. The study developed a savings plan for the Kenya School of Law tuition fees for the advocates. It was realized that by paying a premium of KSH 4,542 for 4 years while still in campus, the students can be able to comfortably go through the KSL training without financial difficulties. In addition, the study also developed an insurance cover that caters for retakes and resist in case of a failure in some of the bar exams. Buy paying a single premium of KSL 8,750, the students are in a position to redo a number of papers that they fail.

## CHAPTER ONE: BACKGROUND TO THE STUDY

### 1.1 INTRODUCTION TO THE STUDY.

The education system is constantly springing surprises in Kenya from high levels of exam irregularities in the 2015 KCSE exam to the Dr. Matiang'i surprising the 2016 lot with state-of-the-art examination conditions which resulted to a significant drop in performance in the top schools in Kenya. Now a trend that had already been in existence but was identified later in the recent years is the failure rate in the professional exams. According to the International Financial Reporting Team (IFRT), on average only 40% to 50% of the candidates who sit for the Association of Chartered Certified Accountants (ACCA) exams successfully pass their examinations (Hatfield, 2018). The institute and faculty of actuaries (IFOA) exams for actuaries also have a similar trend but the Kenya School of law has had the biggest problem. The bar exams have been on the limelight for the better part of the last half decade. This was majorly attributed by the negative performance of the students who sat for the bar exams. According to the standard newspaper, at least 78 per cent of students who sat the November 2016 series bar examination did not qualify for admission as advocates of the High Court. (Oduor, 2017). The results released on January 26, 2017 indicated that only 445 (22 per cent) of the 1,991 students who wrote their examinations at the Kenya School of Law attained the required 40 percent pass mark in all the nine subjects they were tested in. A report by a task force chaired by lawyer Fred Ojiambo released in 2017 shows that from 2009 to 2016 only 7,530 out of 16,086 students passed the bar exams while 8,549 failed. That is a failure rate of 53 per cent. A proper breakdown of the performance as per the report ordered by Kenyan High Court Judge John Mativo is demonstrated in figure 1.

Year	2015	2016	2017	2018
Pass rate	19%	9%	22%	9%

FIGURE 1 KSL BAR EXAM PASS RATE OVER THE LAST FOUR YEARS. SOURCE: KENYA SCHOOL OF LAW E-LEARNING.

The latest performance report put Kisii university at the top in terms of qualifying law students, followed closely by Kenyatta University which had 32 out of its 98 registered students passing the exams while Strathmore University came third with 28 of its 86 candidates qualifying. (Obanda, 2019). This is despite the efforts of the school to offer a rigorous training programme with a set curriculum delivered by lecturers who are lead practitioners in academia, the bar and bench.

While it is the duty of the institute to identify whether a student is fit for the degree or the advocate title, these decisions should be based on valid and reliable assessments of academic performance (van de Watering, 2006). The school is expected to administer a fair test to the student eliminating any conflict of interest in the exercise. The large literature on standard setting in assessment testifies to the importance of high-quality testing. However, a consensus on the best standard setting method is still lacking. (Ben-David, 2000). For the school, several claims have been raised concerning the administration of the exam. A student filing for a petition claimed that the school failed students on purpose. However, Kenya School of Law (KSL) has no role in examinations. "The bar examinations are prescribed by Council of Legal Education (CLE) under section 13 of the Advocates Act cap 16, and not KSL examinations. (legal Education Act, 2012)

Failure in the bar exam means discontinuing in the career path but all institutions of higher education commonly employ a conjunctive standard setting strategy, which requires students to re-sit failed examinations until they pass all tests. For KSL, the students have the option of either resitting for the failed exams or applying for remarks. Re-sitting a paper is US\$100 and re-marking costs US\$150 per paper (Wangari, 2019). While this is viable, the cost might be high for some individuals specially those who do not have a well-off financial background. Moreover, the university world news said that a good number of those individuals who applied for remark ended up passing. This saw them loose their US\$ 150 (Nakweya, 2018). As a result of this, it is now clear that not all those who fail the bar exams deserve the low marks. Some individuals are just unlucky and end up failing. There may be a mismarking, improper preparation of the exam or just tension which brings in exam phobia and a lot of stress. These students could do better on a second attempt and attain their respective honours.

Moreover, the transition rate from the universities to the KSL has also been of concern over the past decade. It is expected of every student who joins a university in pursuit a law degree to join the KSL upon graduation. for the students in public universities, more so those who join via the Joint Admissions Board (JAB), their university fee is greatly subsidised enabling more people from different back grounds to join the profession. However, upon completion of the four-year course, JAB gets out of the picture and the student is entitled to pay for their KSL tuition fee which happens to be more than \$2000 for the two years if they include the exam fee (Gitonga, TukoNews.com, 2019).It is at this point that the transition rate is affected. More than 5000 students every year graduate with a law degree from all the universities in Kenya. Two years later, only a fraction of the students graduate from the KSL as advocates. Among the reasons as to why most don't graduate is the failure rate and the lack of fees specially for those formerly under JAB. After graduation, the graduates find themselves with a task of accumulating funds to take them through the KSL for their next two years. The first year of educational process (term one), they will have to pay the Application fee (payable once), which is \$20. The tuition fee per subject is \$75. As there are five subjects, the total amount that will have to be paid is \$375. They will be also asked to pay the Library fee \$50 which is a payable once. Examination per unit Course costs \$30. As there are five examinations during the first year, the total amount of payment is \$150. This means, that for their first year, term one at KSL they will have to pay around \$525. The first year of educational process (term two): The tuition fee per subject is \$75. As there are five subjects, the total amount that will have to be paid is \$375. Examination per unit Course costs \$30. As there are five examinations during the first year, the total amount of payment is \$150. The first year of educational process (term three): The tuition fee per subject is \$75. As there are five subjects, the total amount that will have to be paid is \$375. Examination per unit Course costs \$30. As there are five examinations during the first year, the total amount of payment is \$150. This means that for the first year at Kenya School of Law they will have to pay \$1350 (Gitonga, TukoNews.com, 2019).

## 1.2 PROBLEM STATEMENT

Every law student in Kenya is expected to join the KSL upon completing their undergraduate studies successfully. These students are bound to incur quite a high cost in pursuit of their qualification as advocates in Kenya. Unfortunately, not all students can afford the fee required to join the KSL. A good number of the graduates curtail their studies in order to accumulate enough money to pay for the fee. This in turn drags their qualification speed and they end up becoming advocates after a longer time than expected.

Moreover, the students are expected to pass all the nine units in order to graduate. Over the last half decade, the KSL has been on the limelight due to the massive failure in the bar exams. Inability to attain the set target points is a setback in an individual's career path.

Need therefore arises to cover the risk of discontinuity of students' career path due to failure in their assessments or inability to pay the tuition fee. The study thus comes in hand to design and price an insurance product for the Kenya School of Law that will pay for the tuition fee required, the exam fee and retakes if any.

## 1.3 RESEARCH OBJECTIVES.

The main objective of this study is:

- (i) To design an insurance product for the KSL tuition fee and exam fee.
- (ii) Price the designed product in order to cater for the policy holders' needs.

## 1.4 RESEARCH QUESTIONS.

1. Can there be an appropriate insurance cover that will mitigate this risk of failure in the Bar exam and the risk of inadequate funds to cater for the tuition fee?
2. How well can the appropriate insurance cover be priced?

### 1.5 SIGNIFICANCE OF THE STUDY.

The development of this new product will give the unfortunate students a second chance to take the bar exams in case they fail to pass on their first attempt. On this ground, the number of advocates qualifying will increase and more students will have certainty of their future as lawyers and advocates.

The product will enable the insured afford the tuition fee required to study in KSL. This will greatly improve the intakes into the KSL by graduates for their post graduate studies.

The product developed will greatly enrich the general business insurance environment enabling the industry grow and spread its tentacles even further into the educational sector. The product can also be twitched or be added as a rider to the already existing educational insurance products hence will create a competitive edge for the respective insurer in the market. With the product in their side, companies are bound to write more business hence increasing their chances of profitability.

This product can be revised, and tailor made for students taking other professional exams that are usually expensive and bring a lot of tension with them. This will be a platform that ensures that the efforts put in by the students do not go to waste.

The study being one among the few that put into practice the professional duties of actuaries in the pricing sector will be of great help to undergraduate students who have a career in pricing or product development. The paper can in future be used as an anchor paper for another individual's research.

## CHAPTER TWO: LITERATURE REVIEW.

### 2.1 INTRODUCTION.

This chapter discusses the survey of different available literature related to the study from contribution of various scholars based on the following fields: the negative performance in major exams, the Kenya School of Law, the insurance industry in Kenya, insurance product development and product pricing. The literature exploration is done on a global and a local perspective with strict focus trying to indicate and acknowledge all professional guidelines put in place. It also reviews trends, acquired knowledge and the law put in place in the areas involving the topic.

### 2.2 PROFESSIONALISM.

For some, being professional might mean dressing smartly at work, or doing a good job. For others, being professional means having advanced degrees or other certifications, framed and hung on the office wall (Porcupile, 2015). As much as this might be true, more is required of individuals in order to be professionals. Professionals are known for their specialized knowledge. They've made a deep personal commitment to develop and improve their skills, and, where appropriate, they have the degrees and certifications that serve as the foundation of this knowledge (Porcupile, 2015). For different careers, there are steps taken in order to recognise the individuals in that field as professionals. For Actuaries, IFOA exams must be done in order to be a fellow, ACCA exams are taken by accountants in order to be certified as accountants and for the Lawyers, they must take the bar exams in order to be recognised as advocates.

The number of qualified professionals in different areas has been low thus increasing their demand all over world. For the case of actuaries, the number of fellows in east Africa is very low compared to the demand for them in the same market. This is majorly contributed by the studies involved being hard and the examinations being expensive for the average income earners. Apart from federal, state and institutional aid, low-income families rarely are in a financial position to draw from savings or borrow against assets, and are unlikely to have enough to pay for college out of current income (Choy & Bobbitt, 2000). Even to those who can afford the required fee amounts, the studies required have over the past proved difficult to many and failure rates on the rise. A good number qualifies after several attempts specially on the exams.

### 2.3 FACTORS AFFECTING STUDENT PERFORMANCE IN EXAMS.

Good performance in any given field is always the best report that the stake holders want to portray to the masses. As for students, top performance is their priorities. Academic achievement is one of the major factors considered by employers in hiring workers especially for the fresh graduates. Thus, students must put the greatest effort in their study to obtain good grades and to prepare themselves for future opportunities in their career at the same time to full fill the employer's demand. (Also, Caranto, Juan & David, 2015). Different factors come into play when performance is at stake. There will always be some factors that contribute to good performance whereas others will bring the performance down. With respect to student performance, several factors affect their school performance. In this section, the different factors will be discussed. In addition to this, students with good study habits are always successful in their desired career (Marquez, 2009).

#### 2.3.1 Positive factors.

According to (Minnesota, 2007) the higher education performance is dependent on the academic performance of graduate students. The aggregate grades reflected while a student was gradating lays a good forecasting ground on how the student will perform in the future studies once they join the next level. This statement was also backed by Staffolani and Bratti (2002) who observed that "the measurement of students previous educational outcomes are the most important indicators of students future achievement; this refers that the higher the previous appearance, the better will the student's academic performance in future endeavours be. Mays (1946) greatly emphasized the importance of having qualified teachers in the field of teaching and said that success of any program is conditioned by the ability of the teacher to teach. If there is any failure of their part, there would be poor implementation, selection, preparation, and supervision of education and the whole system is bound to crush. Dayad (2000) mentioned that good teachers are constantly on the alert for methods and instructional materials that will make learning meaningful. They always invoke different methods in content delivery ensuring students understand the concept and can put it into application whenever required. Over and above the scholarly establishments, hardworking students and the focused individuals always

perform well in class. Paying attention during lectures, completing assignments and on time and being obedient to teaches are just but a few of the things that every parent instructs the students to do in order to pass.

### 2.3.2 Negative effects.

Several researchers have investigated the reason as to why students fail in their academics and to qualify especially for the professional papers. There are several factors that may cause failure to a student. While some of the factors are internal and can be controlled, others cannot be controlled. Marquez (2009) pointed out that a student who is successful in his desired career has good study habits. Everyday day reading habits of a student highly influences their studying skills and their academic performance (Issa, Aliyu, Akangbe & Adedeji, 2012). No student who takes their work seriously, attends classes and reads relevant material at the right time is bound to fail. In situations where students do not take their work seriously, are truants or masters of procrastination, failure is assured. Frequent alcohol and other substance intoxication are also a high contributor to low performance. Alcohol intoxication seems to foster low performance in two ways: playing truant increases intoxication, but intoxication also increases the risk for further truancy, which in turn increases the risk of poor performance. (Wichstrom, 1998). This are but some of the few aspects that an individual brings failure upon himself. However, there are several factors that are of nature and we as humans have no control over.

A student may not know how to study productively. Reading is the process of thinking, evaluation, judging, imaging reasoning and problem solving (Deavers, 2000). The habit of reading increases skill in reading strategies and facilitates massive knowledge transfer. This is where a clear line is drawn between working hard and working smart. Studying is not just a mere reading words from their lesson. It entails concentrating, reading and understanding the content of their work. Secondly, improper and mis-directed preparation for the exam is a highway to failure. This is a major problem among students. Preparation for exams must be initiated right from day one of the sessions including attending lectures, studying by themselves, creating study notes and selecting good books. There is a moral aspect to this factor in the essence that if one misses class, their failure is their fault. Many students who fail in their exams also fail to understand the nature of the question and end

up answering what they were not asked. This is an unfortunate incident which could only be resolved by proper reading of the questions. Thinking skills primarily affect student's learning faculties if they do not learn what they need to learn. If teachers do not know how to catch the attention of a student, the more the student cannot make himself attentive to that subject. This in turn renders the subject boring to the student and less of a priority (Ali, Haiber, Munir, Khan, & Awais, 2013). It is as a result of this that the student pays less attention to it and ends up performing poorly. The Commission on Higher Education (CHED) has identified problems that run simultaneously with the present tertiary school curriculum in the country (see seameo- innotech, 2003). Among the school- related factors found are unqualified and poorly trained teachers, inadequate facilities, and dilapidated instructional materials. Non-school factors include poverty, low educational attainment and illiteracy of parents and poor health and nutrition (Gato et. al 2014). Graetz (1995) conducted a study on socio-economic status of the parents of students and concluded that the socio-economic background has a great impact on student's academic performance, main source of educational imbalance among students and student's academic success contingent very strongly on parent's socio-economic standard. Considine and Zappala (2002) also having the same views as Graetz (1995), in their study on the influence of social and economic disadvantage in the academic performance of school students noticed, where the parents or guardians have social, educational and economical advantage definitely strengthen the higher-level success in future. But it is also noted that these parents make available enough psychological and emotional shore up to their children by providing good educational and learning environment that produce confidence and the improvement of skills needed for success.

#### 2.4 MOTIVATION AS A FORM OF IMPROVING PERFORMANCE.

It is in human nature to work best once there is a price at the end of the activity. Compensation i.e. benefits that employee receives in the form of a pay, wages and some rewards like monetary exchange for the employee's, help increase their performance (Holt, 1993). Highly motivated employees build advantages for their organisation in its objectives. The contribution brought to the organisation is directly proportional to their own growth in skills and output capability in general. It is in working hard that individuals become experts in their respective fields.

Human beings are motivated by sources both from inside and outside the human body (Festinger & Carlsmiths, 1959). These are extrinsic and intrinsic motivations, with extrinsic being the act of completing a task in order to receive a reward (Baranek, 1996). Motivation can be in different ways from rewards, except for financial compensation. Student compensation affects every aspect of school life from attendance to academic performance (Baranek, 1996). Invoking the same concept in the education sector, the results do not vary from the expected. High student performance comes from motivated students (Baranek, 1996). Students will work hard in class in order to receive the best price, attend classes in order to attain the extra marks and answer questions to attain participation marks.

However good motivation is to students, several researchers have coined the negatives that come with it. To start with, rewards can undermine intrinsic interests in learning and deter one from going back to the same topic once they have passed (Deci, 1971), (Festinger & Carlsmiths, 1959). Rewards have also been found to increase laziness among students in their search of knowledge and in challenging their mental capabilities. Maehr and Stallings (1972) found that students consistently choose easier problems to complete when being graded by the teachers. This type of behaviour does not describe a well-motivated student.

## 2.5 THE INSURANCE INDUSTRY IN THE EDUCATION SECTOR.

The general insurance in Kenya has had its good share in the education sector. Several insurance companies have designed insurance products for the education sector covering different risks (insurer's, 2014). Britam insurance for instance has its Elimu Bora educational plan. This is a combination of insurance protection and savings that allows a policy holder to prepare for the cost of education of their children. The plan has been specifically designed to provide funds for their children's fees while in secondary school and a lump sum amount for joining university. UAP insurance company gives Elimika education policy to Kenyan parents and guardians. Through this plan, they can save for their children education in the future. Bima ya Karo from Madison Insurance company also enables people to save for the education of their children in the future. This among

other insurance companies all offer insurance that ensures that the school fees for dependants will never run out in case of a financial incident of the parent/guardian. Old mutual insurance provides education policy with a lump sum benefit in three different packages;

- Rafiki Halisi Education plan- The premium ranges between kes1000 and kes65000 and saving period ranges between 10 years and 20 years.
- Max Education Plan- premiums range between kes7000 and kes100000 and the saving duration should be between 10 and 20 years.
- Lengo Education plan- premiums range between kes3000 and kes7000 and the saving duration should be above 10 years. Lengo education plan has the following features; access to savings, Choice of premiums, life cover and savings security

Most Commercial Banks have an insurance desk, or a complete subsidiary named 'ban assurances which provide insurance solutions to the lender's clients. Banks that have given education policies in Kenya include; CBA Group, Equity Group, Barclay's bank, Standard Chartered bank and Cfc Group (unknown, 2019).

Different Product companies have different insurance products which cover almost the same risks if analysed carefully. It is easy to realise that AXA insurance in Hong Kong and Jubilee insurance in Kenya both have private motor vehicle insurance cover or medical cover yet the two similar covers cost differently. The difference between these two products is their design. Product design is the process by which actuaries come up with new non-existing insurance products or re-package already existing products with the aim of selling the products in the market. The process is always triggered by a market gap i.e. a need or inadequate in the environment. According to AXA insurance, products can also be designed in order to remain relevant and meet the customers' specific need. The main objective is always to remain as close as possible to the customers' needs while ensuring profitability of the product.

## 2.6 VARIOUS WORKS IN THE PRICING FIELD.

With reference to the definition of insuring as giving an assurance over an anticipated outcome, the insurance industry is majorly built on probabilities and risks (Heins & Williams, 1924). Most of the policies written by insurance firms protect the policy holders from financial implications of undesirable events. While the term risk seems easy to define by the general mass, the IFOA has its own terms that must be met before quantifying an event as a risk event. According to subject CT6, risk events should be independent, able to be pooled, have an ultimate liability and able to detach from more hazard (Actuaries, 2013).

Once the insurer is about to take on a business, they come in to measure the risk about to be taken and determine the probability as well as the frequency of the risk occurring (Heins & Williams, 1924). For instance, in a case where a prospective insured is to take a life cover; the actuary can detail the probability of survival from a mortality table, and project a life expectancy for the individual. After this, the actuary is in a better position to calculate premiums for the cover after which they are matched to conceal the liabilities expected to rise from the cover on its initiation to occurrence of the insured event, which is death in this case. They also must put into account that a good product needs to be marketable, profitable, have minimum cost and should be as per the set regulations among other factors.

In other covers like motor vehicle covers, the financial implications of an event will majorly depend on severity of the event. Instances like these require the knowledge of time value of money as is in the Financial Math CT1 by IFOA. This enables the actuary to estimate the net present value of a stream of cash flow at a point in time. For high efficiency and accuracy in the projections, actuaries will always use mathematical models (Heins & Williams, 1924). The models are also used in pricing insurance products, solvency, and testing the ability of an insurer to withstand a range of adverse scenarios.

## 2.7 PREMIUM CALCULATION

From the distribution channels set out by firms, the sales force of any other party involved goes out and sells policies. The price of this cover is the monetary value for which the two parties agree to exchange risk and certainty (laeven & Marc, 2001). A contract is drawn upon agreement between the insurer and the prospective insured on the amount of premiums to be paid periodically and the kind of benefits to expect, the terms of payment and the methods of payment.

The premium can be defined as the price per unit of protection received, whereas the rate the insurer charges would be the price for each unit of loss exposure they cover under the contract. Actuaries are expected to price insurance products: financial arrangement in which an insurer states its guarantee to pay a policy holder on over events, new insurance product: insurance products to be introduced in the market and has not been previously sold, and repackaged products: an existing insurance product that has been enhanced or varied. (IRA, 2013). Skewing towards new products, actuaries are often heavily involved in the pricing process. They develop assumptions for the various cost factors considering the design of the product, the experience of the insurer and the future expectations. An actuary's first goals to come up with a pure premium; premium equal to the expected value of the loss to many policy holders with no profit/loss opportunity. Loading, a process of adjusting the pure premiums to consider all the costs of administration and profit to the insurer, is done.

## CHAPTER THREE: METHODOLOGY

The study was conducted to examine student behaviour, their performance, the proportion of success as per university and any emerging trends or associations in the studied variables. The study also incorporated the transfer rate of law students from their universities to KSL after graduation. The different variables used were chosen due to their effect on students' examination performance.

### 3.1 DATA COLLECTION.

Two sets of data were used in the study. Primary data collected through several surveys done by KSL students. The data contained in it the respective university that a student graduated from and the honours the graduated with i.e. first class, second upper or second lower. Secondary data concerning the past performance of KSL students in the bar exam was then downloaded from the KSL website and performance as per universities was obtained from the Standard media group website. More data was acquired from different sources regarding the students joining KSL and the student's graduation at the end of two years.

### 3.2 VARIABLES DEVELOPMENT.

The variables to be used in pricing were developed in two phases. In the first phase, a correlation matrix was developed to establish correlation between different variables and mitigate it. A regression analysis on the primary data was then done to develop a linear model in the form:

$$performance = \beta_0 + \beta_1 university + \beta_2 honours$$

For the purpose of the cover design, the data was classified into three groups I.e. individuals with marks more than 5 papers failed and those with fewer papers.

### 3.3 PRICING METHODOLOGY.

The second phase of the study involves the analysis of the secondary data. The data on the number of success per university also came in hand in identifying the probability of failure for students from different universities.

The average cost of claim (ACC) being a constant amount in case of a retake and a resit was set as per the KSL website. The incident rate was then calculated as:

$$IR = \frac{\text{count if } x < X}{POPULATION}$$

Where  $x$  is the mark obtained by the individual and  $X$  is the pass mark.

Risk premium was then calculated using the basic formula applied in the insurance industry i.e.

$$\text{risk premium} = ACC \times IR.$$

The obtained risk premium is then to be divided by the target Loss Ratio (LR) to obtain the office premium (OP).

$$OP = \frac{ACC \times IR}{LR}$$

**NB:** The target loss ratio is pre-determined by the insurer. E.g. 65%

### 3.4 THE TUITION FEE COVER.

Individuals are expected to pay their contributions while still in campus. The rate will be dependent on the period to which the cover was purchased. The premium will be calculated through:

$$A = p \left[ \frac{1 - (1 + r)^{-n}}{r} \right]$$

A is the amount to be claimed at the end of the two years.

P is the periodic payment i.e. period to graduation.

r is rate per payment

n is number of periods

### 3.5 ADDITIONAL IMPROVEMENTS.

Due to different identified risk factors, there is need to invoke a Generalised Linear model in adjusting the premiums to match risk levels. The risk factors selected carefully avoiding correlation are University attended and graduation GPA. From this, the premium will be:

$$PREMIUM = OP(1 + \beta_{university})(1 + \beta_{honours})$$

### 3.6 PRODUCT DESIGN

The insurance product is set to cover the law students taking the bar exam against the risk of failure. Should the students fail their exam, they are titled to a full exam fee or retake fee payment upon claim. However, due to the concept of fortuity and the difference in cost of retake and resits, the freedom of choice on whether the student claims for a retake or a resit depends on their points attained in the unit. the claim function will be:

$$f(B_s) = \begin{cases} y\% \sum \text{premiums} & \text{if } x = 0 \\ 15000x & \text{if } 0 < x < 3 \\ 10000x & \text{if } 3 < x < 5 \end{cases}$$

Where:  $A_s$  is the sum assured.

Y is a defined percentage.

X is the number of papers failed.

Cover type	Benefits
Basic cover	exam cover up to \$ 750
Premium cover	Fees up to \$ 2000
Executive cover	$A_s + f(B_s)$ (fees cover inclusive of exam cover)

FIGURE 2- TYPES OF COVERS SUMMARY.

## CHAPTER 4: PRICING

### 4.1 PRICING DATA

The data used in the pricing process was obtained directly from the Kenya School Of law. however, due to the sensitivity of the data, the school only offered half of the data and concealed the identity of the students. The data acquired was for commonly underperformed units for the year 2017 and 2018.

A quick study of the data showed variations in performances as per universities with Kisii university and Strathmore university graduates performing better while Moi university graduates performing dismally as shown in the table below.

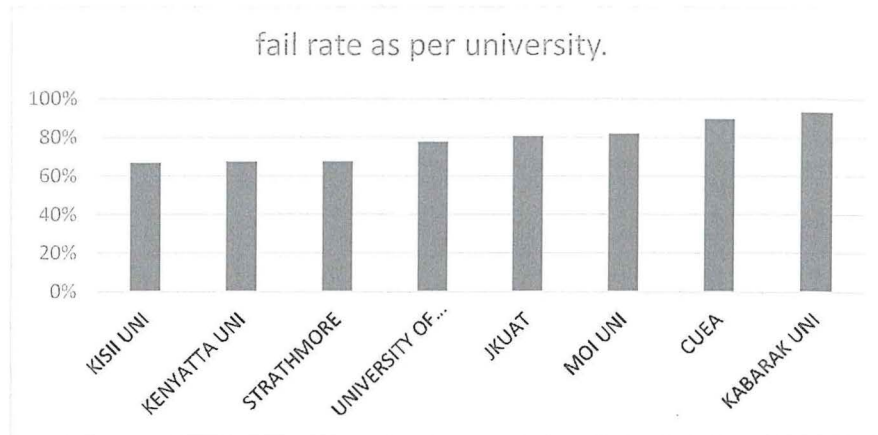


FIGURE 3 UNIVERSITY PERFORMANCE AS PER THE 2018 BAR EXAM RESULTS.

A further study of the data showed that more individuals would fail on the first trial of the bar exam and still fail on the second trial i.e. the resit of the bar exam in the following week. The rate of failure for years 2017-2018 showed an increase in failure rate from year 2017 to year 2018. The results are as shown in figure 3.

	1st trials	retakes	OVERALL RATE
2017	6%	37%	21%
2018	9%	56%	33%

FIGURE 4 THE FAILURE INCIDENCE RATE FOR YEARS 2017 AND 2018

## 4.2 THE INSURANCE PRODUCTS.

### 4.2.1 ASSUMPTIONS.

From the reliable sources (Gitonga, Kenya School of Law fee structure and contacts, 2019), the cover assumes:

- The writing cost and profit margin of the trustee is 35% of the total premiums paid.
- The total tuition fee for KSL is \$2850.
- risk-free rate used for discounting is 14% as per the central bank of Kenya.
- The students start saving for their tuition fee two years in advance in order to claim a full tuition fee upon graduation. the logic behind this assumption is that by year three in university, most if not all students have already chosen their career path.
- The KRA levy stays constant i.e. it is currently 0.45% of the premium.
- A one-off expense of 10% of a single premium.
- Students are expected to contribute either monthly or a single premium to the cover.

### 4.3 THE BASIC COVER.

This is the insurance cover designed compensate for the failure of exams. The cover will pay for a remark or a resit if a policy holder fails a unit. for moral hazard purposes, the cover pays for up to \$500. The premium structure is calculated as follows:

Benefits	AMOUNT
FEES	
EXAMS	KES 8,712
BOTH	
Total Basic Premiums	KES 8,712
Levies (0.45)	KES 39
Stamp	KES 40
Grand Total	KES 8,791

FIGURE 5 THE PREMIUM TO BE PAID FOR THE BASIC EXAM COVER.

The benefits under the scheme are:

BENEFITS	AMOUNT	condition
REMARK	UPTO KES 45000	less than 3 fails
RESITS	UPTO KES 50000	more than 3 but less than 5 fails

FIGURE 6. BENEFITS UNDER THE BASIC COVER.

A refund of 65% of the total premiums paid will be paid to any policy holder who successfully finishes their training without a fail.

#### 4.4 THE PREMIUM COVER

This is a savings plan that policy holders take to enable them save up for the KSL tuition fee. The policy is split into two where the defined contributions are either monthly or a one-off payment annuity with the annuities being:

THE BASIC COVER	
SINGLE PREMIUM	KES 129,104.05
MONTHLY PREMIUMS	KES 4,541.59

FIGURE 7. THE TWO OPTIONS FOR THE BASIC COVER INDICATE PREMIUMS COVERING THE TUITION FEE.

The benefits for the cover are:

BENEFITS	SEMESTER 1 AMOUNT	SEMESTER 2 AMOUNT
EXAM TUITION FEE	KES 135000	KES 150000

FIGURE 8. THE PREMIUM COVER BENEFITS.

#### 4.5 THE EXECUTIVE COVER

The final cover takes up a combination of the two products above. i.e. the basic and the premium cover. Policy holders will get to save for their tuition fee and exam cover in the event they accumulate a retake or two. The premium for this cover will depend on whether the policy holder decides to pay a one-off premium or a monthly contribution.

Benefits	AMOUNT
<b>SINGLE PREMIUM</b>	
FEES	76,440
EXAMS	8,712
BOTH	
<b>Total Basic Premiums</b>	<b>85,152</b>
Levies(0.45)	383
Stamp	40
<b>Grand Total</b>	<b>85,575</b>

FIGURE 9. THE PREMIUM AMOUNT FOR A ONE-OFF PAYMENT ON AN EXECUTIVE POLICY.

Benefits	AMOUNT
<b>MONTHLY PREMIUMS</b>	
FEES	4,542
EXAMS	8,712
BOTH	
<b>Total Basic Premiums</b>	<b>13,253</b>
Levies (0.45)	60
Stamp	40
<b>Grand Total</b>	<b>13,353</b>

FIGURE 10. THE PREMIUM AMOUNT FOR A MONTHLY PAYMENT ON AN EXECUTIVE POLICY.

The benefits under this policy are:

BENEFITS	SEMESTER 1 AMOUNT	SEMESTER 2 AMOUNT
EXAM TUITION FEE	KES 135000	KES 150000
RESITS	from 3 up-to and including 5 fails	from 3 up-to and including 5 fails

FIGURE 11. THE BENEFITS UNDER THE EXECUTIVE COVER.

#### 4.6 MEMBERSHIP ELIGIBILITY.

- **Age definition:** Individuals above the age of 18 already admitted in a university can join the policy.
- **Parents joining the cover on behalf of their dependants** must do it once the dependant(s) joins a university.
- **Potential policy holders need to be students taking law degree** in their respective universities.

#### 4.7 WITHDRAWAL STRATEGY

Individuals withdrawing from the basic cover will receive their premiums contributed less the cost of writing and trustees profit margin. There will also be a withdrawal charge on the benefits received which will be determined by the respective trustee.

Individuals withdrawing from the executive cover will receive their savings as at time of withdrawal less the cost of writing and the trustee's profit margin. In addition, a withdrawal charge is to be levied on the withdrawal benefits.

For the premium product, policy holders who withdraw will lose part of the benefits equivalent to the examination fee.

## CHAPTER 5: CONCLUSION AND RECOMMENDATION.

From the study, I found out that there is an insurance market that has not been tapped in the professionalism field is an area where there is vast risk and the insurance industry can tap into this area and thus increase its penetration.

In this study, I developed the KSL educational cover and exam insurance product. I priced the product using data tapped from the KSL eLearning and administration office.

The product can be revised and tailor made to suit other fields of professionalism. The Actuarial papers, the CFA, KASNEB among other professional exams are quite expensive and their pass rates are also relatively low. The product could work well after a few modifications.

For the already existing educational policies, part of the product i.e. the premium product can be incorporated as a rider in other educational funds.

### 5.1 CHALLENGES

The biggest challenge during the development of this product was the unavailability of data due to its sensitiveness. The absence of an already existing similar product made the assumption setting process also difficult.

## REFERENCES

- Actuaries, I. a. (2013). *Core Technical 6*. London: IFOA.
- Ali, S., Haiber, Z., Munir, F., Khan, H., & Awais, A. (2013). Factors Contributing to the Students Academic Performance: A Case Study of Islamia University SubCampus. *American Journal of Educational Research*.
- Alos, B. S., Caranto, c. L., Juan, J., & David, T. (2015). *Factors affecting the academic performance of the nurses of BSU*.
- Baranek, L. K. (1996). The Effect of Rewards and Motivation on Student Achievement.
- Ben-David, F. (2000). AMEE guides. *Standard setting in student assessment*, 18.
- Choy, S., & Bobbitt, L. (2000). Low-Income Students: Who They Are and How They Pay for Their Education. *Department of Education. National Center for Education Statistics: Washington DC*.
- DEAVERS, R. (2000). The effects of instructions on early non-word reading strategies. *Journal of research in reading*, 267-289.
- Deci, L. E. (1971). Effects of externally mediated rewards on intrinsic Motivation. *Journal of Personality and Social Psychology*, 8.
- Festinger, L., & Carlsmiths, J. M. (1959). Cognitive consequence of forced compliance. *Journal of Abnormal and Social Psychology*, 58, 203.
- Gitonga, j. (2019, february 9). Kenya School of Law fee structure and contacts. *Tuko News*.
- Gitonga, j. (2019, february 2). *TukoNews.com*. Retrieved from <https://www.tuko.co.ke/263608-kenya-school-law-fee-structure-contacts-official-website-location.html#263608>
- Graetz, B. (1995). Economic status in the education research and policy. *Social-economic status and School education*.
- Hatfield, A. (2018). *ACCA announces pass rates for the December 2018 exam sitting*.
- Heins, R. M., & Williams, A. J. (1924). Risk Management And Insurance.
- Holt, D. H. (1993). *Management: Concept and Practice*.
- insurer's, A. o. (2014). Association of Kenya insurer's gude book. pp. 16-30.
- IRA. (2013, February). GUIDELINE TO THE INSURANCE INDUSTRY ON THE ACTUARIAL FUNCTION . *GUIDELINE ON ACTUARIAL FUNCTION FOR INSURANCE AND REINSURANCE COMPANIES*, pp. 4-7.
- Issa, A. J., Aliyu, M. B., Akngbe, R. B., & Adedeji, A. F. (2012). Reading interests and habits of the federal polytechnic student. *International Journal of Learning and Development*.

- laeven, R., & Marc, G. (2001). Premium Calculation and Insurance Pricing . *Journal of insurance pricing*.
- Marqueze, M. (2009). Modern Teacher. *Ways f encouragement for succesful student habits.*, 13.
- Nakweya, G. (2018, March 9). Ongoing reform calls despite improved bar exam results. *University World News African Edition*.
- Obanda, J. (2019, june 20). Big Debate as nearly all students fail bar exams. . *The Daily Nation*.
- Oduor, A. (2017, July 8). Shock over massive failure of students at law school. *The Standart*.
- Porcupile, D. W. (2015). What is PROFESSIONALISM? What does Professionalism mean to you? 1.
- reporting, N. c. (2012). The Kenyan Constitution. *Legal Education Act*, pp. 5,9-36.
- unknown. (2019, 04 29). Top 10 Best Education Insurance Policies In Kenya. *The flex times*, p. 1.
- van de Watering, j. d. (2016). Teachers And Students' perceptions of assessments. *A review and study into the ability and accuracy of estimating the difficulty levels of assessment items*.
- Wangari, S. (2019, January 8). KSL students' massive exam failure sparks probe. *Kenyan.co.ke*.
- Wichsrom, L. (1998). Alcohol intoxication and school dropout.
- zappala, G., & Considine , G. (2002). Influence of social and economic disadvantages in the academic performance of school students in Australia. *Journal of Sociology*, 38,129-148.

## Appendix

[https://1drv.ms/x/s!AhXtiJVVoTo5gdNf\\_ATIy9oSp0T07Q?e=aUb3YK](https://1drv.ms/x/s!AhXtiJVVoTo5gdNf_ATIy9oSp0T07Q?e=aUb3YK)

the link above will direct scorers to the data and pricing worksheet.