Development of Ultimate Education Support Plan (UESP) Excel Model

MASTERS OF financial insurance

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Abstract

The development of the Ultimate Education Support Plan (UESP) Excel model focuses on enhancing the accuracy and reliability of financial projections for education-based insurance policies. This model ensures that policyholders receive consistent and transparent information, fostering long-term customer loyalty and business growth. By addressing complex insurance scenarios, the UESP model contributes to maintaining the financial integrity and competitiveness of Prudential Life Insurance Ghana..

Objectives

The primary objectives of this model are:

- To develop an Excel-based model for the Ultimate Education Support Plan (UESP) that accurately calculates risk premiums and total premiums for various policy scenarios.
- To ensure alignment and consistency between the UESP Excel model and the IT system by reconciling data and enhancing model precision.
- To provide policyholders with clear and reliable financial information, thereby enhancing customer satisfaction and retention.

Methods

Formula for calculating risk premium is given by:

$$\textbf{Risk Premium (RP)} = \text{LS} \quad \text{RP} + \text{WoP} \quad \text{RP} \qquad (1)$$

$$\textbf{LS} = \left(\frac{\text{sum Assured (SA)}}{1000}\right) \times \text{Lump Sum Risk Rate} \qquad (2)$$

$$\textbf{WoP} = \left(\frac{\text{Annualized Premium(AP)}}{1000}\right) \times \text{LS Risk Rate} \qquad (3)$$

Where LS is Lump Sum and WoP is Waiver of Premium.

The annual, semi-annual, quarterly, and monthly risk rates for LS and WoP have been successfully incorporated into the Excel model development.

Results

SCENARIO 1 (BASE SUM ASSURED WITH SPOUSE RIDER + CHILD COVER)

POLICY DETAILS

	Main life	Spouse (100% cover)	Child Cover
Age	34	37	
Term	10 years	10 years	10 years
Frequency	Monthly	Monthly	Monthly
Investment Premium Selected	180		
Sum assured	180 x 12 x 10 = 21,600 WoP & Lump Sum	21,600 Lump Sum	TPD Cover Only= 50% x 21,600 = 10,800
Standard loading (Death)	0%	0%	
Standard loading (TPD)	0%	0%	
Rates table			Child premium embedded in rates (Max of 4)

RISK PREMIUM CALCULATION

Main-life

WoP & Lump Sum Risk rate = 0.5170

Cover Premium	Computation (Risk rate per 1000 SA)	Value
WoP & Lump sum risk premium	(0.5170/ 1000) x 21,600	11.1672
Total Risk Premium		11.1672

Spouse

Lump Sum Risk rate = 0.3018

Cover Premium	Computation (Risk rate per 1000 SA)	Value
Lump sum risk premium	(0.3018/ 1000) x 21,600	6.5189
Total Risk Premium		6.5189

Grand Total of Risk Premium = 11.1672 + 6.5189 = 17.6861

SCENARIO 2 (SUM ASSURED INCREASE OPTION)

POLICY DETAILS

	Main life	Spouse (100% cover)	Child Cover
Age	34	37	
Term	10 years	10 years	10 years
Frequency	Quarterly	Quarterly	Quarterly
Investment Premium Selected	350		
Sum assured	350 x 4 x 14 = 19,600 WoP & Lump Sum	19,600 Lump Sum	TPD Cover Only= 50% x 19,600 = 9,800 per child
Standard loading (Death)	0%	0%	
Standard loading (TPD)	0%	0%	
Rates table			Child premium embedded in rates (Max of 4)

Results

RISK PREMIUM CALCULATION

Main-life

WoP & Lump Sum Risk rate = 1.5088

Cover Premium	Computation (Risk rate per 1000 SA)	Value
WoP & Lump Sum Risk premium	(1.5088/ 1000) x 19,600	29.5725
Total Risk Premium		29.5725

Spouse

Lump Sum Risk rate = 0.8807

Cover Premium	Computation (Risk rate per 1000 SA)	Value
Lump sum risk premium	(0.8807/ 1000) x 19,600	17.2617
Total Risk Premium		17.2617

Grand Total of Risk Premium = 29.5725 + 17.2617 = 46.8342

Total premium to be paid = 350.00 + 46.8342 + 0.50 = 397.33

The Excel model has been developed to handle the following scenarios.

Conclusion

The development of the UESP Excel model has laid a strong foundation for enhancing the accuracy of financial projections and risk premium calculations. Once deployed, this model is expected to significantly improve policyholder satisfaction and trust. It will serve as a crucial tool in ensuring that Prudential Life Insurance Ghana meets its commitments to clients, thereby supporting sustained business growth and strengthening the company's market reputation.

References

1. PLIG – Prudential Life Insurance, Ghana