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HEALTH INCENTIVE PROGRAM FOR SUPERLIFE

SOA CASE STUDY CHALLENGE 2024

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Background & Objectives

We have been asked to develop a health incentive program that SuperLife can pair with its longer-term life insurance products such as its single-premium whole life insurance and 20-year term life insurance. SuperLife are looking to improve its policyholders' expected mortality once the policyholder has purchased an insurance policy. In this report, we propose a health incentive program with three key health incentives, and we provide information on the likely success of the program. The metrics used to measure the success of our proposed program are updated mortality rates, profit and profit margin for 20 years of implementing the program.

In this report we will discuss program design, pricing of SuperLife's policies and results from program implementation, assumptions, risk & risk mitigation, and finally data.

Program Design

Smoking Cessation Program

An incentive designed to encourage current smokers to quit was developed after an initial exploratory data analysis highlighted a significant correlation between smoking and a decrease in expected mortality.

The incentive follows a reward-based scheme that uses progressively increasing cash incentives over a 6-month term. Studies have shown that the likelihood of relapse is very high (75%) within this period, and decreases after 6 months of cessation, dropping down to a 30-40% chance of relapse over the next 8 years (Lee, Kim, Im, & Jang, 2021). As such, the progression-based reward scheme aims to help smokers through the initial 6 months (Berlin, et al., 2021).

The proposed progression scheme provides a cash reward at certain stages aimed at maximising continued participation in the program, for a 6-month total of Č1,500.

	Week			Month		
	1	2	3	1	3	6
Reward (Č)	100	150	200	300	350	400

Studies conducted in Switzerland following a similar progressive reward scheme had participants on average receiving Č1,028 with 87% of participants receiving 1 reward and 48% having completed all 6 months (Etter & Schmid, 2016). A survey among participants revealed that participants in the incentive program were much more likely to have obtained help by themselves over the internet than those that expressed quitting but were not offered the incentive program; the progressive nature of the program resulted in participants becoming more motivated to seek resources to help complete the program.

Surveys suggest that approximately 70-90% of smokers would like to quit and participate in the program (Halpern, et al., 2016). These numbers suggest that approximately 33.6%-43.2% of current smokers will complete the 6-month program, with a 20%-30% probability for long-term cessation. We have assumed a 25% decrease in mortality rates attributable to smoking.

When comparing these numbers against alternative and cheaper incentives such as a single Č800 cash reward for abstinence at 6 months, the overall increase in successful cessation ultimately finds more long-term savings than the initial lower cost of a cheaper program (Halpern, et al., 2016).

In the short term, yearly participation rates and program completion rates must be monitored to ensure that there is enough completion of the program such that the cost savings associated with the theoretical expected decrease in mortality will justify the observed per participant cost. In the long term, given that most SuperLife members are aged in the 40s, we can expect to observe a decrease in mortality within the next 40 years. In the unlikely event that after 40 years the observed mortality decrease is not as large as expected, the pricing of the program will need to be reviewed.

Weight Management Program

A weight management program is applicable to all policyholders. This way, it will affect not only smokers, but non-smokers which make up approximately 94% of SuperLife's policyholders. Approximately one in three cancers are preventable (Wilson, et al., 2018) through lifestyle changes including weight management and diet. Not only will this program reduce policyholders' risk of cancer, but it will also reduce the risk of heart problems, blood clots and arthritis.

Our proposed weight management program will run on an app created specifically for SuperLife policyholders. The SuperLife health incentive program will include:

- Information on dietary changes to improve health, such as a reduction in red and processed meat consumption, a reduction in alcohol consumption, and an increase in the consumption of fruits and vegetables (Lifestyle Choices Can Prevent 1 in 3 Cancers, 2021). Specifically:

FOOD/BEVERAGE	RECOMMENDED INTAKE
RED & PROCESSED MEAT	No more than 1 serve of lean red meat per day, or 2 serves 3-4 times per week.
ALCOHOL	No more than 10 standard drinks per week and no more than 4 standard drinks on any occasion.
FRUITS & VEGETABLES	2 serves of fruit and 5 serves of vegetables every day.

Providing this information straight to members means that members don't have to dedicate time or money to conduct their own research.

Further, SuperLife can provide physical activity incentives, such as:

- Reminding members to take a short walk every thirty minutes. This is particularly helpful for those who have a nine-to-five desk job.
- Recommending members take the stairs instead of the elevator when they can.
- Recommending walking tracks to members. Lumaria is rich in natural landmarks such as the Luminous Lake, Skyreach and Whispering Woods.

Members can stay motivated and keep themselves accountable by tracking their meals and physical activity each day through the app. Participation in the program may be encouraged by providing members with rewards for completing tasks, for example vouchers than can be used in grocery stores.

We expect that mortality will not reduce by more than the effects attributed to the smoking cessation program. For non-smokers, we expect a 5% reduction in mortality from this program.

Cancer Prevention Initiatives

One of the main causes of death for SuperLife's policyholders is cancer, although we are not given information on the type of cancer that causes deaths. Below are general early detection and prevention initiatives for cancer that SuperLife can provide to their policyholders once a year, at relevant times.

- Early detection of cancer:
  - Inform members on how they can check their own body for signs of cancer, such as skin, breast or testicular.
  - Encourage members to undertake cancer screenings, e.g. for bowel cancer.
- When nearing spring & summer, inform members on how to reduce their exposure to solar ultra-violet radiation (Wilson, et al., 2018), such as applying sunscreen regularly, wearing sun safe hats, staying in the shade and wearing polarised sunglasses.

Information will be provided to policyholders through letters sent to the members' home addresses twice per year (one for early detection initiatives and one in the spring for skin cancer prevention).

For smokers, we expect that mortality will not reduce by more than that comes from the smoking cessation program. For non-smokers, there are overlaps in mortality reduction through the weight management program and cancer prevention initiatives. While we expect cancer prevention initiatives to reduce mortality by 5% *independently* of the weight management program, the combined effect of both means our expected *additional* reduction in mortality from cancer prevention initiatives will be 3%.

Pricing & Costs

The smoking cessation program is a one-off cost of Č2,177.50 in the first year of policyholder issue. This is a result from the Č1,500 cost to successful participants and Č677.50 as marketing and setup costs. As the program is short-term, consequent costs are one-off in the short-term. The cost of the weight management program is Č522.50 per program, and the cost of cancer prevention initiatives is Č52.50 per policyholder. We estimate a 5% additional cost per year to maintain these two programs. The costs of the entire program for smokers and non-smokers are in the table below.

Policyholder type	Cost in first year	Cost in subsequent years
Smoker	Č 2,752.50	Č 28.75
Non-smoker	Č 575.00	Č 28.75

Premiums were estimated by guaranteeing an 8% profit margin for SuperLife (before program implementation). We found it was not necessary to change (or increase) premium prices after program implementation. 20-year profits before and after program implementation as well as profit margins for each policy type were estimated and are shown in the tables below.

T20	Profit before tax	Profit margin
Before Program	Č 1,097 M	8.00%
After Program	Č 2,516 M	5.61%

SPWL	Profit before tax	Profit margin
Before Program	Č 320 M	8.00%
After Program	Č 2,511 M	83.43%

Total	Profit before tax	Profit margin
Before Program	Č 1,417 M	8.00%
After Program	Č 5,027 M	35.13%

Although the *profit margin* for the 20-year term life insurance decreases under the program, profit margin for SuperLife's single-premium whole life insurance would have increased tenfold. From improved mortality from the program alone, we estimate that total profit for SuperLife in the last 20 years would have increased from Č1.4 billion to Č5.0 billion, with a profit margin of 35%.

Assumptions

Mortality

- Mortality is derived from SuperLife's in-force policyholder dataset.
- Male and female mortality rates are different (only considered when calculating profits for non-smoking policy holders).
- Mortality rates for all smokers (of the same age) are the same, regardless of sex.

Incentive program

- Decrease in mortality from the smoking cessation program is 25%.
- Decrease in mortality from weight management program (WMP) is 5%.
- Decrease in mortality from cancer prevention program (CPP) is 3%.
- Decreases in mortality from different programs are not independent. Thus, we have not taken 5% as decrease in mortality from CPP as we believe some of the decrease in mortality will also arise from the WMP.
- When calculating decrease in mortality we multiplied the original mortality by $0.97 \times 0.95 = 0.9215$, not by 0.92.
    - We have considered the decrease in mortality for CPP dependent on WMP, however, we have considered their effects on mortality independent.
- All smokers participate in CPP and WMP, but they do not affect mortality.

Pricing and Costs of program

- Premiums are priced in 10-year age brackets: 26-35, 36-45, 46-55, 56-65.
    - We have used the 3rd oldest age in each bracket to calculate profits, so that costs are not underestimated.

- All program costs will be paid by SuperLife.
- We have not changed the price ranges of the incentive programs.
- The CPP and WMP combined will incur maintenance costs.
- Commissions:
  - Single Premium Whole life: 5% one-off commission.
  - 20 Year Term: 90% in the first year and 5% for subsequent years.

Interest Rate and Inflation

- Inflation and the risk-free interest rate have been assumed to be constant at 2% p.a. and 2.5% p.a., respectively.
- Using the S&P500 index as a reference for market return and an assumed risk beta of 0.98 (Damodaran, 2024), SuperLife's cost of capital is estimated to be 10.83% p.a.
- As regulators require insurance companies invest in liquid and low-risk assets, SuperLife's estimated return on investment is two percentage points above the risk-free rate, or 4.5% p.a.

Risk and Risk Mitigation Considerations

Key Risks and Mitigation

Risk	Impact	Mitigation
Low Engagement or Effectiveness	Looking at a sensitivity analysis for the projected mortality reduction from smoking, we expect a total profit margin of 12% with a lower mortality reduction from the program, but a 100% profit margin with a higher mortality reduction. Quantitative details are in the Sensitivity Analysis section.	We suggest implementing the program with an initial limited trial to observe data and allow for participant feedback. This will allow us to make necessary adjustments to the program (such as larger incentives) that will ensure a suitable engagement rate is achieved and to meet the projected estimates in terms of expenses and participation. Furthermore, data obtained during this phase can be used for targeted advertising tailored to specific demographic segments to further increase engagement and participation.
Adverse Selection	Results due to the possibility that individuals that are already motivated to lead healthy lifestyles will engage with the program significantly more than those less motivated to lead a healthy lifestyle, leading to a skewed risk pool with a disproportionate number of high-risk individuals. It is very possible that SuperLife	To mitigate this risk, the app will provide personalised services based on the individual policyholder and their condition. There will be various indicators such as BMI, current diet and levels of physical activity which will influence the target physical health levels for that specific policyholder. This will maintain achievable goals and motivation to

Risk	Impact	Mitigation
	could end up providing grocery vouchers to families already eating healthy.	continue making use of the features, thus preventing a skewed risk pool.
Increase in Risky Behaviour	Could occur with customers looking to take advantage of the cash-backed program incentives. With the smoking cessation offering cash rewards of up to Č1500, it is very possible that individuals may begin smoking in an effort to receive an easy cash payout.	To reduce this risk there will be specific criteria introduced to ensure all policyholders are reaching minimum participation levels, for example meeting certain indicators of physical wellbeing or protein intakes to successfully continue reaping all the benefits of the program. These indicators will be monitored by a team to ensure that any suspicious or abnormal behaviour is investigated to prevent any exploitation of the reward system. Furthermore, any abnormally severe changes in health conditions will also be reported to health authorities to ensure policyholder health and wellbeing. This prevention system will act as a deterrent to any policyholder from abusing their health to profit from the program incentives.
Data Security	Collection of sensitive data from the incentives raises legal concerns about the protection of the data, along with the need to meet the regulatory requirements (such as General Data Regulation Protection) to collect and store the data. Any mishandling of the data could lead to severe legal, financial, and reputational risks against the insurer.	To mitigate and remove this risk, the program should be developed in-house with SuperLife's IT team along with the implementation of cybersecurity measures. This ensures that the data is being stored in a secure way that can be completely controlled and maintained by SuperLife, thereby removing any risks associated with external storage and data handling. The program should also be approved by SuperLife's legal department to ensure that all regulatory requirements related to data handling are being met. The program will also implement specific security features such as multiple factor authentication to prevent any physical breaches of privacy from the policyholder's side.
Equity Concerns	The possibility of disproportionately affecting certain demographics with differing amounts of access to resources.	To reduce this concern, SuperLife will proactively create partnerships with a wider range of grocery stores, as well as offer digital vouchers redeemable online to

Risk	Impact	Mitigation
	Vouchers provided to grocery stores that may not have many locations in lower-income areas could result in exacerbating any disparities in healthcare outcomes.	help mitigate access issues and ensure benefits are equally accessible across all demographics.
Regulatory Changes	Changes within the health and life insurance industry, as well as data protection regulations could affect program compliance and operation. New regulations may introduce stricter compliance requirements which would affect program costs, structure, and data management practices. For example, changes in privacy laws could necessitate adjustments in how participant data is collected and used. Modifications in health insurance regulations may affect eligibility criteria, incentive offerings, or program benefits.	To reduce this risk, a team will regularly monitor the regulatory landscapes and implement proactive adjustments to the program to ensure ongoing compliance. Regular compliance audits will be done to evaluate the program's adherence to current health insurance and data protection regulations. This proactive approach facilitates timely adjustments before external audits or regulatory inquiries.
Budget Overruns	Occurs when implementing and maintaining the health incentive program where costs exceeding initial projections due to unforeseen expenses or the need for additional investments in technology and security to ensure the program's success and compliance. These issues could result in a strain on SuperLife's financial resources, impacting its overall profitability and operational efficiency.	To mitigate this risk, a dedicated financial management team will be assigned specifically to prepare budget forecasts and prepare for all potential expenses and circumstances. Furthermore, regular financial audits will be done to monitor and adjust expenditures internally, as well as through third parties.
Model Risk	Our models have used mortality from the in-force dataset and mortality tables provided by SuperLife. However, these mortality values may not account enough for unforeseen events (such as COVID-19). This can lead to inaccurate mortality values thus	To mitigate this risk, sensitivity analysis should be employed. This allows for profit calculations for different mortalities providing a more holistic overview on profits.

Risk	Impact	Mitigation
	inaccurate premium and profit calculations.	

Risk Matrix

Probability \ Severity	High	Medium	Low
High	Financial (low engagement or effectiveness)	Budget Overruns	
Medium	Adverse selection	Data Security	Equity concerns
Low	Regulatory changes	Model Risk	Increase in risky behaviour

Sensitivity Analysis

Mortality Decrease

Rather than a decrease in mortality rates of 25% for smokers and 7.85% for non-smokers under the program, we tested the model under two other situations. The first is that the decrease in mortality rates is less than anticipated. Specifically, mortality rates decrease by just 15% for smokers and 5% for smokers. Results are in the table below.

Total	Profit before tax	Profit margin
Before Program	1,079 M	8.10%
After Program	3,412 M	12.69%

The next table represents SuperLife's profits if mortality reductions are more than anticipated, specifically, mortality reduction for smokers is 50% and mortality reduction for non-smokers is 14.5%.

Total	Profit before tax	Profit margin
Before Program	1,077 M	8.03%
After Program	10,065 M	100.70%

Withdrawal Rates

For the sensitivity analysis, lapse rates were adjusted to be 90% and 110% of the originally assumed lapse rates.

The table below shows results if lapse rates were adjusted to be 90% of the assumed lapse rates.

Total	Profit before tax	Profit margin
Before Program	1,087 M	8.30%
After Program	5,298 M	36.63%

The next table shows results if lapse rates were adjusted to be 110% of the assumed lapse rates.

Total	Profit before tax	Profit margin
Before Program	1,074 M	8.09%
After Program	5,003 M	35.03%

Interest Rates & Inflation

The below table shows profits if the risk-free interest rate were 1.5% p.a. rather than 2.5% p.a.

Total	Profit before tax	Profit margin
Before Program	-539 M	-19.93%
After Program	3,555 M	9.51%

If the risk-free interest rate were instead 5% p.a., SuperLife's estimated profits are:

Total	Profit before tax	Profit margin
Before Program	5,100 M	77.77%
After Program	8,321 M	96.73%

Data and Data Limitations

No external data sources were directly used in this proposal. Data from numerous research papers and data collections were referenced to help establish assumptions regarding interest rates and program design.

Below are the main limitations for the datasets provided by SuperLife.

SuperLife In-force Dataset

- The data provided on the policies are missing some key information on the policyholders, such as their occupation and income. These factors would likely have an influence on their mortality as well as their willingness to participate in specific programs but could not be considered in our analysis.
- Some policyholders in the dataset were listed as dead but did not have a listed cause for death. These policyholders were removed for consistency as the proprtion of these policyholders was insignificant.

Lumaria Mortality Table

- The Lumarian mortality rates given were unisex and universal, which did not allow for this distinction between specific groups and genders. From the in-force data given, it was found that mortality was vastly different between smokers and non-smokers, as well as males and females. This meant that it was necessary to consider these differences in mortality when pricing. Hence, the given mortality rates could not be used in our analysis. An issue with these rates is that they only go up to age 65.

Interventions

- In the information of given interventions, the ranges of the approximate cost and mortality decrease were often very wide, especially for the smoking cessation program, which quoted 'up to 50% reduction in mortality'. This made the information very difficult to use in estimations and projections of prices and additional research was required and many assumptions had to be made.
- Similarly to the mortality data, the mortality decrease given for each intervention was also universal across all age groups and demographics, which did not allow for distinction between each group of policyholders when pricing. Hence, the mortality reduction was applied to all policyholders disregarding age and other factors.

Appendix

Pricing

Premium prices and profits for SuperLife were approximated by underwriting for three main groups: smokers, male non-smokers, and female non-smokers. Within these groups, ratemaking was also performed for 10-year age groups at time of issue. Issue ages ranged from 26 years to 65 years, so there were four age groups. For each of these groups (accounting for the death benefit amount), we set premiums based on the profit margin objective of 8%, which is a generally accepted margin for life insurers. We are describing "profit" to be the present value of the first twenty years of profits from the product, discounted at SuperLife's cost of capital.

Total profit for SuperLife is calculated as the sum of all profits from each type of policy.

Premiums did not change under the program. Profit under the program is calculated the same way as without the program. Under the program, there are revised mortality rates, and additional expenses for SuperLife. These are discussed later in the appendix.

Commissions

For the 20-year term policy, commissions are set at 90% for the first year, and 5% for subsequent years (Mira Health, 2024). As the whole life policy is single premium, there is only one year that SuperLife pays commission. Commission under the single premium whole life policy is 5%.

Expenses

Without the program, expenses for SuperLife to pay out for policyholders are assumed to be zero. Our main concern is the *additional* cost to SuperLife, so if this assumption is false, it does not affect our results.

Expenses under the program are based on the Interventions data. Costs were taken to be the middle of the range of the costs provided. Further, a 5% cost for subsequent years is added to SuperLife's expenses, which is representative of the cost to maintain the health incentive program.

Policy Numbers

The number of policyholders, which is used to calculate total profits for SuperLife, was taken from SuperLife's policyholder data. The number was split by smoking status, sex (if non-smoker), 10-year age group, policy type (20-year term or single-premium whole life) and death benefit amount.

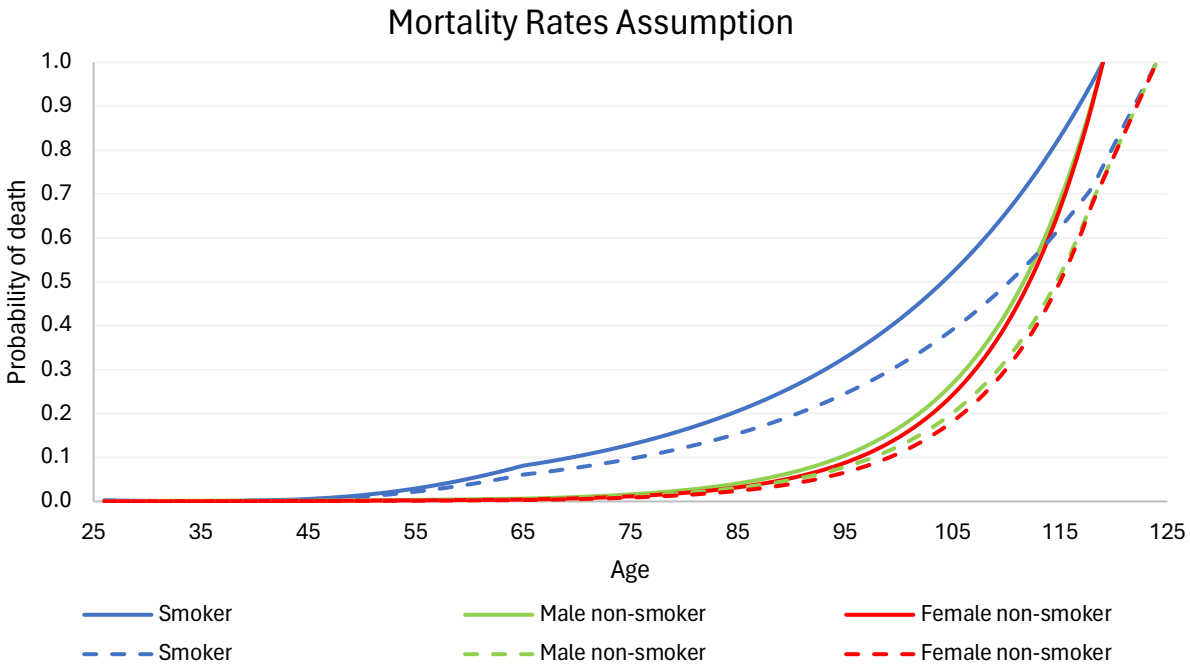
Mortality rates

Mortality rates were derived solely from SuperLife's policyholder dataset. For each group of smokers, male non-smokers and female non-smokers, the probability of death at each age (26 years to 65 years) was obtained. To be conservative (and for simplicity), no mortality improvement over the 20 years was assumed. To estimate mortality rates for ages above 65, we assumed that they increased exponentially up to a probability of 1 at age 120. To do this, we had the natural logarithm of the death rates increase linearly up to 1 at age 120.

The method that we used to modify mortality rates under the program is as follows:

1. Multiply the original mortality rate by the corresponding coefficient. For example, we estimated smokers would have their mortality reduced by 25%, so the mortality rate for smokers is multiplied by 0.75 under the program.
2. As mortality rates are farther from 1 at age 120, assume a linear increase in the death rate from age 120 to age 125, at which point the probability of death at age 125 is 1. In other words, after the implementation of the program, policyholders have *some* chance of living up to age 125, whereas originally they are assumed to only be able to live up to 120 years.

In the graph below, the solid lines represent the mortality rates without the program, and the dashed lines represent the revised mortality rates under the program.



Withdrawal Rates

Single-premium whole life policyholders have no incentive to withdraw from their policy. For that reason, no withdrawal rates were assumed for single-premium whole life policyholders. Withdrawal rates were only taken and assumed for 20-year term policyholders.

Withdrawal rate estimates were taken straight from SuperLife's 20-year term policyholder data. They were taken separately for smokers, male non-smokers, and female non-smokers, and within each of these three groups the withdrawal rate was taken for each policy year.

Withdrawal rates used are in the table below.

Policy year	Smoker	Male non-smoker	Female non-smoker
1	0.86%	0.94%	0.95%
2	0.78%	0.95%	0.96%
3	0.87%	0.98%	0.91%

Policy year	Smoker	Male non-smoker	Female non-smoker
4	0.77%	0.93%	0.93%
5	0.91%	0.92%	0.90%
6	0.93%	0.95%	0.97%
7	0.98%	0.92%	0.93%
8	0.84%	0.95%	0.91%
9	0.96%	0.93%	0.95%
10	0.85%	0.94%	0.89%
11	0.87%	0.90%	0.91%
12	0.79%	0.91%	0.86%
13	0.75%	0.92%	0.87%
14	0.85%	0.90%	0.89%
15	0.78%	0.85%	0.89%
16	0.85%	0.85%	0.84%
17	0.95%	0.76%	0.83%
18	0.77%	0.79%	0.77%
19	75.92%	77.65%	77.30%
20	0.00%	0.00%	0.00%

Withdrawal rates between the three groups are similar.

Mortality Reductions

- Decrease in mortality from the smoking cessation program ranged from 0%-50%. We have chosen the median of the range because it gives us the average decrease in mortality.
- Decrease in mortality from CPP ranged from 5%-10%. We have chosen 5% to overestimate our costs.

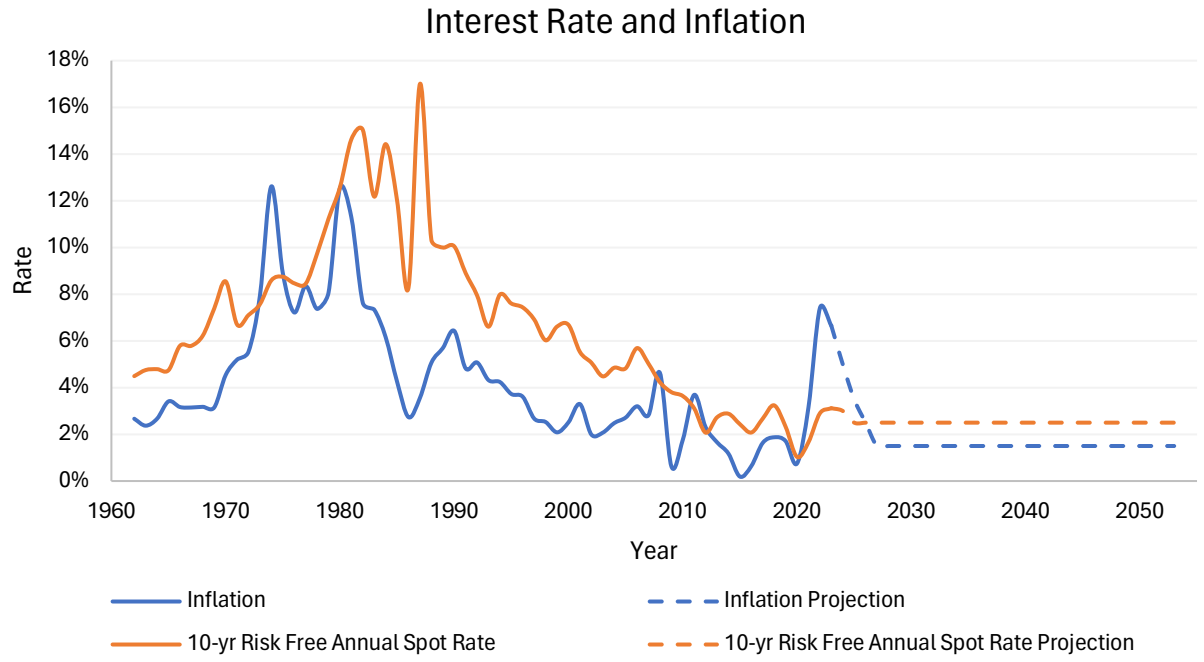
Pricing and Costs

- The median cost of each program has been used for pricing because it provides us with average cost. The ranges were obtained from the interventions dataset.
- We have used age brackets of 10 years from a practical point of view. Despite this age bracket we believe our model still provides useful insights into the application of incentive programs.
- The ongoing cost of Č28.75 for CPP and WMP is 5% of first year costs. It has been added to maintain programs and initiatives implemented.

Inflation & Interest Rates

As SuperLife's policies in question are long-term policies such as 20-year term and whole life policies, we believe it is best to use interest rates for long-term financial products, as we assume SuperLife's investments will correspondingly be long-term. We have used data of the longest

annual spot rate provided dating back to 1962, which is the 10-year risk free annual spot rate in Lumaria, to project future risk-free interest rates on long-term products.



Our projections of inflation and the risk-free interest rate are long-term, although they do not account for the jump in rates in 2020 from the COVID-19 pandemic.

We use the Capital Asset Pricing Model (CAPM) to estimate SuperLife's long-term cost of capital. The equation for cost of capital estimation is as follows:

$$r_{CC} = r_f + \beta(r_m - r_f)$$

Where r_f is the risk-free rate, β (beta) is SuperLife's exposure to market volatility and r_m is the market rate of return. SuperLife's beta was estimated to be 0.98, based on historical data from other life insurance companies in all countries globally Specifically, we based it on the average beta from the last 8 years of data. The market rate of return is estimated to be around 11% p.a., and this is based on historical data of the S&P500 index.

In the end, we obtain SuperLife's estimated cost of capital:

$$r_{CC} = 0.025 + 0.98(0.11 - 0.025) = 10.83\%$$

As SuperLife is a life insurance company, it has to follow certain investment requirements. Specifically, insurance companies are required to invest in highly liquid, low-volatility investments such as cash, corporate bonds and exchange-traded funds (ETFs). This led us to estimate that SuperLife's investment return would be approximately 2% above the risk-free interest rate per annum, or 4.5% p.a.

Sensitivity Analysis

Inflation/Interest Rate

Risk-free interest rate is 1.5%

T20	Profit before tax	Profit margin
Before Program	584 M	5.25%
After Program	2,243 M	3.20%

SPWL	Profit before tax	Profit margin
Before Program	-1,124 M	-61.12%
After Program	1,312 M	19.84%

Total	Profit before tax	Profit margin
Before Program	-539 M	-19.93%
After Program	3,555 M	9.51%

Risk-free interest rate is 5%

T20	Profit before tax	Profit margin
Before Program	1,721 M	15.46%
After Program	3,196 M	11.64%

SPWL	Profit before tax	Profit margin
Before Program	3,379 M	179.74%
After Program	5,126 M	235.97%

Total	Profit before tax	Profit margin
Before Program	5,100 M	77.77%
After Program	8,321 M	96.73%

Mortality Rate Decrease

Lowest Decrease (Smoking Cessation program: 15%, cancer prevention initiatives: 0%)

T20	Profit before tax	Profit margin
Before Program	910 M	8.17%
After Program	1,643 M	-2.30%

SPWL	Profit before tax	Profit margin
Before Program	168 M	8.00%
After Program	1,769 M	37.22%

Total	Profit before tax	Profit margin
Before Program	1,079 M	8.10%
After Program	3,412 M	12.69%

Highest Decrease (Smoking Cessation program: 50%, cancer prevention initiatives: 10%)

T20	Profit before tax	Profit margin
Before Program	909 M	8.05%
After Program	4,772 M	25.46%

SPWL	Profit before tax	Profit margin
Before Program	168 M	8.00%
After Program	5,293 M	223.82%

Total	Profit before tax	Profit margin
Before Program	1,077 M	8.03%
After Program	10,065 M	100.70%

Lapse Rates

Lower Lapse Rates (90% of original)

T20	Profit before tax	Profit margin
Before Program	919 M	8.49%
After Program	2,540 M	5.77%

SPWL	Profit before tax	Profit margin
Before Program	168 M	8.00%
After Program	2,758 M	87.12%

Total	Profit before tax	Profit margin
Before Program	1,087 M	8.30%
After Program	5,298 M	36.63%

Higher Lapse Rates (110% of original)

T20	Profit before tax	Profit margin
Before Program	905 M	8.14%
After Program	2,492 M	5.45%

SPWL	Profit before tax	Profit margin
Before Program	168 M	8.00%
After Program	2,511 M	83.43%

Total	Profit before tax	Profit margin
Before Program	1,074 M	8.09%
After Program	5,003 M	35.03%

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