Introduction to Actuarial Model
ASSIGNMENT 1

1) Steps to take in the development of the model:

• Planning the modelling process and how the model will be validated.

• Collecting and analysing the necessary data for the model.

•setting parameters and their appropriate values.

• taking feedback on the parameters from experts.

• creating a simulation based on the worst-case scenario available.

• Writing a computer program for the model.

• Debugging the program to make sure it performs the intended operations in the model definition.

• Testing the reasonableness of the output from the model.

• Reviewing and carefully considering the appropriateness of the model in the light of small changes to the input parameters.

• Analysing the output from the model.

• Ensuring that any relevant professional guidance has been complied with.

• Communicating and documenting the results and the model.

2) there are several factors which could cause the probability to be inaccurate, such as:

- The parameters set for the models may be wrong.
- Since this is a stochastic mater the outcome cannot be fully trusted due to its random nature.
- The data entered is in accurate.

3) I will Develop a well-defined set of objectives that need to be met by the modelling process.
Plan the modelling process and how the model will be validated.
Collect and analyse the necessary data for the model.
Define the parameters for the model and consider appropriate parameter values.

4) The communication must be such that it takes account of the knowledge of the target Audience Comprehensive documentation should contain sections on model inputs, calculations, outputs, limitations,
associated business processes, governance practices, application and platform specifics and their viewpoint.

5) Advantages:

- Using the past data to predict the future
- The board of directors can get a rough idea about the future of the company
- Provides a rough idea about the future prospect of the company

Disadvantages:

- There maybe a demographic shift considering that it has been 2 years
- The past data maybe unreliable
- We can’t accurately predict the future based on the past data
- We don’t know if the same age group would prefer scrummy bar in the next 20 years or so.

6) There can be several reasons for the difference in the wo observed results the major reasons are:
The documentation of the model maybe inappropriate and therefore the results come out to be different.
Another significant argument for the same could be that, since it is a stochastic model the input that could be
completely different from the later.

7) Right of the bat I don’t understand the logic behind multiplying current age distribution of the population
to the planned population of the new town. And also considering the fact that national fertility and mortality rates
by age are used to estimate births and deaths it is totally reasonable to assume that the national rates could be far
deviated from the towns rates. And therefore could make an significant impact on the future projection. Thus I
conclude that the model is inappropriate.

8) The various factors that could be considered here are:

- Age and gender of the employees
- Past medical records
- Daily routine/ lifestyle of an average employee
- Fitness level among various age groups of employees
- Work hours
- Stress
- Pollution in the city
- Office environment
- Diet of an average employee.

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