

EXAM 6 – CANADA, SPRING 2016

3. (2.0 points)

A Canadian auto insurance regulator in a highly competitive jurisdiction is considering a proposal by a consortium of insurance companies and dental practitioners to use a driver's *number of dental visits in the past 12 months* as an automobile insurance rating variable. The consortium has conducted a multivariate statistical analysis of empirical claims data to justify their proposal. This analysis found the following statistically significant result: each additional visit to the dentist in the past 12 months lowers the expected automobile insurance claims of the driver by 20%, all else equal.

The regulator has recently heard the testimony of Jeff Kucera at the NAIC Public Hearing of Credit-Based Insurance Scores about the use of credit-based insurance scores in rating. The regulator works closely with the NAIC and would like to ensure that *number of dental visits in the past 12 months* is evaluated relative to the arguments presented in this testimony.

a. (0.5 point)

Provide support in favour of using the *number of dental visits in the past 12 months* as a fair and valid automobile insurance rating criterion.

b. (1.0 point)

The regulator elects to approve this rating variable. Five years later, a new study recognizes that a gradual increase in dental fees has led to a 10% overall reduction in annual dental visits across the driving population. Fully defend the regulator's decision to maintain *number of dental visits in the past 12 months* as an approved rating variable in light of this new study.

c. (0.5 point)

The privacy commissioner rules that *number of dental visits in the past 12 months* constitutes personal information under the privacy laws of the jurisdiction and requires informed customer consent to be used in rating and underwriting. Identify two elements that should be included in the consent request to the customer.

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SAMPLE ANSWERS AND EXAMINER'S REPORT

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| QUESTION 3 | |
| TOTAL POINT VALUE: 2 | LEARNING OBJECTIVE: A2 |
| SAMPLE ANSWERS | |
| Part a: 0.5 point | |
| <p>Sample answers:</p> <p>Multivariate statistical analysis shows that it is statistically significant. There is a statistical relationship between insurance claims and # of dental visits. The analysis indicate should use as a rating variable.</p> <p>Another sample answer:</p> <p>The rating variable is statistically significant and highly predictive of differentiating expected claim cost.</p> | |
| Part b: 1 point | |
| <p>Sample answer:</p> <p>Overall shift in # of visiting dentist could increase overall premium but expect total insurance cost should be unchanged</p> <p>-# of visiting is just one of multiple rating factors. Insurers other factors, capping could mitigate the impact of such change in visiting dentist.</p> <p>-Assume total premium is adequate. Insurer can adjust overall premium by off balance factor. If change in # of visits is consistent between people than off-balance adjustment can make sure the individual premium unaffected</p> <p>Other sample answer:</p> <p>The number of visits is reduced across the driving population. Therefore when calculating the rate differential when using new data, the relative proportion will not change. Total aggregate premium will not change because of the reduction. Actuary will regularly review data available and make sure rating calculation is updated accordingly. Off-balance factors will be use to adjust the overall premium level if necessary.</p> | |
| Part c: 0.5 point | |
| <p>Sample answer to get full credits:</p> <ul style="list-style-type: none"> • What personal information will be collected • The circumstances under which personal information may be disclosed to other parties <p>Many other answers received full credits</p> | |
| EXAMINER'S REPORT | |
| <p>This question challenged the candidate to use existing knowledge and to apply it to a hypothetical situation. Most candidates were able to come up with valid answers.</p> | |
| Part a | |
| <ul style="list-style-type: none"> • Candidates are expected to use the knowledge they had to build an answer. Most candidates were able to articulate good answers. • Common reason for not getting full credits was not providing enough information. | |
| Part b | |
| <p>As stated above, this is an application question. Candidates are expected to defend the approved rating variable based on the information provided in the question.</p> | |

SAMPLE ANSWERS AND EXAMINER'S REPORT

Candidates were able to recognize the impact of the distributional shift on overall premium level. Most candidates forgot to discuss the impact on individual rating factors for the number of dentist visit variable.

Part c

Candidates are expected to know the elements in the consent request. Most candidates did great on this part. As long as relevant answers were provided, full credits were awarded. Candidates who did not receive full credits were either not providing enough items or repeating the same item twice.