Glossary for Loss Data Analytics

An open text authored by the Actuarial Community

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Contents

Chapter 1

Terms and Descriptions by Chapter

1.1 Chapter 1 Terms

analytics	The process of using data to make decisions. This process involves gathering data, understanding models of uncertainty,making general inferences, and communicating results
business intelligence	May focus on processes of collecting data, often through databases and data warehouses
business analytics	Utilizes tools and methods for statistical analyses of data
data science	Can encompass broader applications in many scientific domains
short-term	Contracts where the insurance coverage is typically provided for six months or a year
property insurance	In the US, policies such as renters and homeowners
casualty insurance	In the US, a policy such as auto that covers medical damages to people
nonlife or general insurance	In the rest of the world, property and casualty insurance are both known as nonlife or general insurance, to distinguish them from life insurance
Underwriting	The process of classifying risks into homogenous categoriesand assigning policyholders to these categories, lies at the core of ratemaking. Policyholders within a class have similar risk profiles and so are charged thesame insurance price
ratemaking	Where analysts seek to determine the right price for the right risk
experience rating or merit rating	Modifying premiums with claims history
claims adjustment	The process of determining coverage, legal liability, and settling claims
claims leakage	Dollars lost through claims management inefficiencies

loss reserving	Setting aside money for unpaid claims
claim	At a fundamental level, insurance companies accept premiums in exchange for promises to indemnify a policyholder upon the uncertain occurrence of an insured event. This indemnification is known as aÂ claim
severity	A positive amount is a key financial expenditure for an insurer. So, knowing only the claim amount summarizes the reimbursement to the policyholder
frequency	How often claims arise
pure premium or loss cost	The total severity divided by the number of claims
rating variables	Externally available variables useful in setting insurance rates and premiums
claim	compensation from insurer to insured upon the occurrence of an insured event

1.2 Chapter 2 Terms

claim	compensation from insurer to insured upon the occurrence of an insured event
Frequency	how often claims arise or how often insured event occurs
Severity	amount of each payment for an insured event
expected cost	expected number of claims (frequency) times expected amount per claim (severity)
binomial distribution	discrete frequency distribution and member of (a, b, 0) class; for number of successes in a fixed number of independent identical trials with binary outcomes
negative binomial distribution	discrete frequency distribution and member of (a, b, 0) class; for number of successes until we observe the r-th failure in independent identical trials with binary outcomes
poisson distribution	discrete frequency distribution and member of (a, b, 0) class; for independent events occuring at a constant rate in a certain time period
likelihood	observed value of mass function
maximum likelihood estimator (mle)	to find parameter values that produce the largest likelihood
risk	a unit covered by insurance
parameter	a numerical characteristic of a population
mixture	mixture of subgroups, each with their own distribution
fitted distribution	distribution used for modeling the data
Pearson chi-square statistic	to check for the goodness of fit of the fitted distribution

Chapter 2

Terms and Chapter First Defined

analytics	1
binomial distribution	2
business analytics	1
business intelligence	1
casualty insurance	1
claim	1
claim	NA
claims adjustment	1
claims leakage	1
data science	1
expected cost	2
experience rating or merit rating	1
fitted distribution	NA
frequency	1
Frequency	2
likelihood	NA
loss reserving	1
maximum likelihood estimator (mle)	2
mixture	NA
negative binomial distribution	NA
nonlife or general insurance	1
parameter	NA
Pearson chi-square statistic	NA
poisson distribution	2
property insurance	1
pure premium or loss cost	1
ratemaking	1
rating variables	1
risk	NA
severity	1
Severity	2
short-term	1
Underwriting	1