

Index

When a word or phrase occurs several times in a chapter, the page number of only the first occurrence in that chapter is noted.

- accelerated life test, 312
- AI, 333
- alias, 147
- analysis of variance, 17, 54, 188, 240, 360
- application-oriented, 51
- ARIMA, 78
- ARL, 214
- ARMA, 231
- assignable cause, 18, 187, 211
- assurance, 15, 125, 255, 310
- attributes, 91, 100, 118, 216, 309, 382
- autocorrelat(e) (ed) (ion), 207, 211, 338
- autoregress, 231, 345
- average, 7, 73, 121, 141, 189, 213, 241, 356, 383, 405

- balanced scorecard, 101
- Bayes, 6, 68, 171, 312, 372
- belief, 123, 285, 374, 401
- Black Belt, 34, 38, 65
- block design, experiment, factorial, 145
- block-modelling, 365
- Box, George, 13, 22, 137, 323
- BUGS, 47, 380
- calibration, 92, 240, 338, 375
- case studies, 62, 66, 375, 418

- cause-and-effect (diagram) (relationship), 85, 101, 187, 242
- CEN, 13
- centre point, 144
- chance, 18, 187, 211, 252, 317
- chart, 7, 18, 31, 62, 109, 121, 182, 185, 211, 259, 314, 342
- check sheets, 109
- cluster analysis, 6, 165, 261, 360
- coding, 138, 352, 373
- comment cards, 131
- communication, 20, 33, 82, 111, 176, 328, 401
- complaint management, 131
- computer, 22, 31, 100, 153, 164, 271, 307, 337, 371, 405
- computer experiments, 3
- computer model, 371
- confidence interval, 53, 176, 240, 362, 381, 406
- conflict, 32, 53, 55, 61, 105, 314, 323
- conforming, 113, 186, 216
- confounding, 92, 145
- conjoint analysis, 12, 129
- consultancy, 20, 25, 41, 50, 53, 65, 323
- contrasts, 145

- control chart, 7, 18, 31, 62, 110, 185, 211, 214, 259, 342
- controllable factors, 137
- convergence detection, 388
- cost, 20, 61, 98, 119, 137, 337, 374
- covariance, 154, 224, 227, 282, 304, 338, 345, 359, 369, 387
- craftsmen, 15
- critical incident, 130
- critical quality, 129
- customer, 4, 15, 31, 61, 97, 117, 166, 186, 308, 383, 422
- customer survey, 64, 118
- CUSUM, 216

- data analysis, 6, 17, 31, 62, 103, 164, 208, 315, 337, 405
- data mining, 3, 5, 31, 161, 330
- decision-making, 12, 97, 129, 281, 309, 330
- defining relation, 147
- Deming, W E, 18, 71, 97, 108, 111, 186, 401
- dependent variable, 110, 137, 281
- descriptive, 6, 165, 303
- design of experiments, 2, 4, 26, 50, 70, 122, 137, 241, 260, 273, 341
- design quality, 119
- design region, 143
- design resolution, 148
- detection, 169, 187, 214, 240, 324, 358, 388
- development testing, 307
- DFIT, 307
- diagnostic, 95, 180, 214, 303, 331, 340
- dimension, 20, 35, 86, 124, 139, 178, 257, 337, 379
- discrete event, 372
- discriminant analysis, 78
- distribution (probability), 65, 170, 205, 212, 240, 318, 342
- DMAIC, 25, 34, 64, 94

- DoE, 4, 70, 122
- dynamic model, 128, 345

- economic value, 101, 105
- empathy, 125
- ENBIS, 1, 51, 113, 402, 422
- engineer, 4, 15, 31, 62, 145, 211, 260, 307, 338
- engineering process control, 230
- environment, 4, 122, 308
- erratic behaviour, 187
- error detection, 324
- European Commission, xi, 1, 3, 12, 334, 397
- European Union, 50, 323
- EWMA, 7, 215
- exceptional variation, 187
- expectation, 4, 34, 61, 103, 119, 381
- experimental design, 4, 111, 137, 341, 375
- experimental run, 93, 138
- experimental unit, 140
- exploratory data analysis, 78, 164, 214, 315, 338
- exponentially weighted moving average, 7, 216, 358

- factorial experiment, design, 141, 291
- factorial survey, 129
- failure (rate) (mode), 8, 20, 64, 130, 202, 214, 240, 307, 373
- false alarm, 187, 214
- fault tree, 308
- financ (e) (ial), 44, 98, 117, 178, 372
- finite-element analysis, 308
- flowchart, 64, 110, 121, 313
- FMEA, 307
- Fourier, 347
- fourteen points, 111
- fractional factorial, 146
- fuzzy logic, 31, 324

- gauge, 242, 262
- generator, 147, 377

- Gibbs, 356, 374
 Gosset, William, 17, 22
 graphic (al) (s), 6, 23, 62, 131, 155,
 165, 216, 261, 319, 384,
 404
 Guinness, 17
- hard to change factors, 138
 hazard, 78, 309
 heterogeneity, 117, 169
 histogram, 22, 109, 188, 205, 303,
 388
 history, 11, 15, 108, 240, 333
 homogeneity, 171, 191
 Hotelling T₂, 224, 342
 hypothesis test, 17, 53, 212, 381
- image, 98, 346, 373
 in-control, 212, 343
 independent variable, 110, 129, 137,
 280, 341
 indicators, 12, 93, 98, 133, 342, 387
 individual values, 193
 industrial processing, 337
 industrial statistician, 30
 industrial statistics, 3, 13, 15, 30,
 32, 46, 371
 industry, 15, 29, 47, 62, 147, 163,
 239, 313, 326, 337
 inference, inferential, 17, 121, 156,
 172, 188, 263, 324, 341
 Inseparability, 117
 interaction, 87, 105, 139, 196, 261,
 383
 Ishikawa, 21, 70, 109, 121
 ISO, 13, 23, 24, 111, 112, 113, 239,
 241, 250, 278, 289, 311,
 325, 361, 364
 ISO 9000, 23, 242
- JIT, 21
- kaizen, 20
 kanban, 21
 Kohonen map, 165
- latent (variable) (structure), 338,
 340
 lateral thinking, 308
 Likert scale, 123
 logistic regression, 78, 165
 log-linear, 6, 165
- Mahalanobis distance, 342
 main effects, 139, 242
 manage (rs) (ment), 4, 15, 29, 61,
 97, 117, 166, 186, 239,
 307, 376, 402
 management, 15, 29, 61, 97, 106,
 117, 166, 199, 239, 279,
 307, 315, 322, 376
 management statistics, 11, 97
 manufacturing, 4, 16, 41, 44, 61,
 118, 157, 185, 211, 255,
 312, 375
 market (ing) (research), 5, 19, 47,
 66, 98, 117, 163, 308,
 337, 374
 market analysis, 12, 98, 121
 Markov chain, 47, 171, 374
 mathematical model, 65, 209, 280,
 323, 371
 mathematics, 42, 53
 maximum likelihood, 340, 374
 MBTI, 35
 means chart, 7
 measure (ing) (ment), 6, 16, 34,
 64, 97, 118, 163, 191, 211,
 239, 318, 337, 375, 404
 metrology, 239, 361
 MEWMA, 224
 modelling, 3, 22, 163, 231, 312,
 338, 372, 419
 Monte Carlo, 47, 362, 372
 Motorola, 10, 64
 moving range, 193, 231
 multiscale, 337
 multivariate, 6, 23, 158, 163, 211,
 261, 337
 multivariate chart, 7, 261
 Myers–Briggs Type Indicator, 35

- network website, 12
- neural networks, 31, 165, 330, 333, 360, 395
- noise, 17, 22, 158, 178, 240, 241, 346, 353, 360
- observational unit, 140
- OCAP, 214
- OCR, 372
- out-of-control (action plans), 213, 260
- parameter estimation, 216, 374
- Pareto chart, 22, 95, 109, 121
- PDCA, 19, 108
- penalty, 123, 373
- perception, 17, 36, 91, 99, 119
- performance, 12, 18, 34, 62, 97, 120, 185, 211, 243, 308, 337, 341, 371
- personality, 34, 35
- PHA, 309
- point estimate, 386
- practical statistical efficiency, 65
- precision, 23, 180, 193, 246, 386, 404
- predict (ion) (ive) (able), 6, 59, 62, 98, 140, 165, 187, 263, 311, 340, 371
- presidents of ENBIS, 13
- principal components, 7, 78, 178, 340
- probabilistic models, 333
- process control, 29, 61, 108, 185, 211, 256, 315, 342
- process improvement, 16, 34, 61, 108, 151, 187, 315
- process limit, 194
- process monitoring, 7, 23, 212, 337
- product, 4, 15, 42, 61, 97, 117, 166, 186, 211, 257, 310, 326, 337
- production, 5, 16, 50, 64, 98, 117, 185, 211, 245, 308, 345
- productivity, 4, 16, 19, 26, 50, 61, 186, 321, 328
- Pro-ENBIS, xi, 1, 9, 51, 331, 397
- profitability, 21, 26, 98
- proportional hazards, 78, 312
- PSE, 65
- psychology, 55, 97, 410
- QFD, 310
- quality, 4, 8, 11, 15, 29, 35, 51, 61, 98, 108, 111, 117, 157
- quality assurance, 16, 24, 225, 310, 329
- Quality Award, 24
- quality by design, 61
- quality circles, 19, 111
- quality control, 7, 108, 118, 322, 346
- quality function deployment, 310
- quality improvement, 3, 19, 49, 62, 108, 117, 157, 331
- quality ladder, 61
- quality standards, 24, 120, 239
- questionnaire, 10, 35, 124, 315
- random (ly) (ise) (isation) (errors) (variation) (variable), 17, 42, 78, 137, 171, 201, 225, 240, 339, 373
- random number generator, 377
- range chart, 7, 190
- rating scales, 123
- rational subgroup, 190
- real-life, 48, 51, 65, 130, 330
- regression, 6, 17, 73, 128, 140, 165, 232, 253, 315, 338, 394
- regularities, 163, 338
- reliability, 3, 19, 62, 124, 307, 372
- repeatability, 68, 239
- replicate, 66, 141, 241
- reproducibility, 85, 239, 276
- research, 4, 17, 32, 71, 101, 140, 163, 185, 307, 402
- respondent fatigue, 130
- response surface, 22, 93, 139, 315, 395
- responsiveness, 20, 124, 310

- reward, 30, 106, 123, 322
- robust design, 22, 50, 62
- robustness, 22, 157, 207

- safety, 3, 56, 74, 99, 287, 307, 337
- sampling, 5, 18, 62, 164, 212, 256, 337, 379
- scientific method, 30
- scorecard, 101
- second-order, 139, 171, 231
- sensor, 240, 338
- sequential experiment, 138
- services, 42, 61, 97, 117, 168, 248, 357
- seven quality tools, 70, 121
- Shewhart, Walter, 18, 185, 211
- shift, 17, 202, 215, 245, 356, 377
- signal, 18, 110, 134, 187, 213, 240, 328, 338
- signal processing, 325, 352
- simulation, 7, 8, 47, 62, 129, 257, 307, 311, 371
- Six Sigma, 10, 22, 24, 29, 34, 49, 62, 64, 328
- software, 8, 23, 31, 68, 100, 119, 148, 172, 193, 271, 311, 377
- sparsity-of-effects, 144
- SPC, 7, 18, 108, 185, 321, 342
- specification limits, 184, 199
- split-plot, 138
- SQC, 119
- SQM, 8, 328, 331
- stakeholder, 55, 97
- standard operating procedure, 108, 121
- statistical efficiency, 61, 65
- statistical methods, 1, 17, 30, 61, 109, 118, 164, 211, 239, 271, 312
- statistical toolbox, 113, 121
- statistically stable, 187
- stochastic, 8, 93, 317, 346, 381
- survey, 10, 64, 103, 118, 157, 315
- system identification, 338

- tabulation, 240, 404
- Taguchi, Genichi, 21, 32, 70, 158
- tangibles, 124
- teaching, 2, 8, 43, 47, 114
- testing, 76, 239, 307, 375
- testing and measurement, 239
- three-factor interaction, 143
- three-sigma, 188, 214
- threshold, 180, 199, 221, 354
- time series, 78, 231, 312, 338, 376
- toolbox, 25, 113, 118, 337
- training, 8, 22, 30, 63, 104, 119, 307
- transform, 338
- treatment combination, 138
- trend, 17, 33, 74, 98, 131, 241, 404
- trial control limits, 213
- two-factor interaction, 143
- two-point moving range, 193

- uncertainty, 17, 176, 239, 317, 361, 374, 406
- uncertainty in measurement, 239
- univariate, 211, 386
- URL, 194

- variability, 22, 66, 110, 117, 140, 211, 241, 308, 339, 389, 406
- variance, 7, 17, 54, 140, 188, 217, 240, 346, 379
- variance chart, 7
- Variance reduction, 393
- variation, 4, 18, 64, 107, 153, 185, 216, 241, 313, 339
- vignette, 129

- waiting time, 121, 384
- wavelet, 325, 338
- web (site) (based), 3, 36, 100, 166, 314, 397, 411
- web mining, 167
- WIP, 312
- workflow, 372
- writing, 401

- XmR chart, 193