DAFTAR PUSTAKA

Aghabozorgi, S., Shirkhorshidi, A. S. dan Wah, T.Y. (2015). Time-series Clustering: A Decade Review, *Information Systems,* **53**, 16–38

Alonso, A. M., Barrendero, J. R., Hernandez, A. dan Justel, A. (2006). Time Series Clustering Based on Forecast Densities, *Computational Satistics & Data Analysis*, **53**, 762–776.

Anderberg, M. (1973). *Cluster Aalysis for Applications*, New York, Academic Press.

Anton, H., Rorres, C. (2005). *Elementary Linear Algebra*, 9th Edition, John Wiley and Sons, Inc.

Backer, E. dan Jain, A. (1981). A Clustering Performance Measure Based on Fuzzy Set Decomposition, *IEEE Transactions on Pattern Analysis and Machine Intelligence*, PAMI-3 (1): 66 –75.

Bain, L. J. dan Engelhardt, M. (1992). *Introduction to Probability and Mathematical Statistics*. California: Duxbury Press.

Bazaraa, M. S., Sherali, H. D. dan Shetty, C. M. (2006). *Nonlinear Programming: Theory and Algorithms*, (3rd Edition). John Wiley & Sons, Inc., New Jersey.

Ben-Tal, A. dan Nemirovski, A. (1998). Robust Convex Optimization. *Mathematics of Operations Research*, **23**, 1769-805.

Ben-Tal, A. dan Nemirovski, A. (1999). Robust Solutions to Uncertain Linear Programs. *Operation Research Letters*, **25**, 1-13.

Ben-Tal, A. dan Nemirovski, A. (2000). Robust Solutions of Linear Programming Problems Contaminated with Uncertain Data. *Mathematical Programming*. **88**, 411-424.

Ben-Tal, A. dan Nemirovski, A. (2002). Robust Optimization: Methodology and Applications. *Mathematical Programming*, **92**(3, Ser. B), 453-480.

Bengtsson, C. (2004). *The Impact of Estimation Error on Portfolio Selection for Investor with Constant Relative Risk Aversion*. Working Paper. Department of Economics. Lund University.

Best, M. J. dan Grauer, R. R. (1991). On the Sensitivity of Mean-Variance Efficient Portfolios to Changes in Asset Means: Some Snalytical and Computational Results. *Review of Financial Studies*, **4**(2), 315-342.

Broadie, M. (1993). Computing Efficient Frontiers Using Estimated Parameters. *Annals of Operations Research*, **45**, 21-58.

Ceria, S. dan Stubbs, R. A. (2006). Incorporating Estimation Errors into Portfolio Selection: Robust Portfolio Construction. *Journal of Asset Management*, **7**(2), 109-127.

Chaerani, D. (2006). *Modelling Robust Design Problems via Conic Optimization*. Dissertation. Technische Universiteit Delft.

Chen, L. H. dan Huang, L. (2009). Portfolio Optimization of Equity Mutual Funds With Fuzzy Return Rates and Risks, *Expert Systems with Applications*, **36**, 3720-3727.

Chong, E. D. P. dan Zak, S.H. (2001) *An Introduction to Optimization*. Second Edition. John Wiley and Sons, Inc.

Chopra, V. K. dan Ziemba, W. T. (1993). The Effects of Errors in Means, Variances, and Covariances on Optimal Portfolio Choice. *Journal of Portfolio Management*, **19**(2), 6-11.

Cuesta-Albertos J. A., Gordaliza A. dan Matrán C. (1997), Trimmed *k*-means: An attempt to robustify quantizers, *Annals of Statistics,* **25**, 553–576.

Danilov, M. (2010). *Robust Estimation of Multivariate Scatter in Non-affine Equivariant Scenarios*. Dissertation. The University of British Columbia.

Davies, P. (1987). Asymptotic Behavior of S-estimators of Multivariate Location Parameters and Dispersion Matrices. *The Annals of Statistics*, **15**, 1269 1292.

DeMiguel, V. and Nogales, F. J. (2008). Portfolio Selection with Robust Estimation. *Journal of Operation Research*, **57**, 560 - 577.

Duda, R., Hart, P. dan Stork, D. (2001). *Pattern classification,* 2nd edition, New York, NY: John Wiley & Sons.

Elton, E. J. dan Gruber, M. J. (2014). *Modern Portfolio Theory and Investment Analysis*, 9th Edition, John Wiley and Sons, Inc., New York.

Engels. M. (2004). *Portfolio Optimization: Beyond Markowitz.* Thesis. Universiteit Leiden.

Everitt, B. (1980). *Cluster Analysis,* 2nd edition, London: Social Science Research Council.

Everitt, B., Landau, S. dan Leese, M. (2011). *Cluster Analysis,* 5th edition, London: Arnold

Fabozzi, F. J., Kolm, P. N., Pachamanova, D. A. dan Focardi, F.M. (2007). *Robust Portfolio Optimization and Management*. John Wiley and Sons, Inc., New Jersey.

Fabozzi, F.J., Huang, D. dan Zhou, G. (2010). Robust Portfolios: Contributions from Operations Research and Finance. *The Journal of Operation Research*, **176**, 191-220.

Fang, K. T., Kotz, S., Wang, Ng, K. W. (2018), Symmetric Multivariate and Related Distributions, Taylor & Francis Group, USA.

Filzmoser, P., Garrett, R. G. dan Reimann, C. (2005). Multivariate Outlier Detection in Exploration Geochemistry. *Computers & Geosciences*, **31**, 579–587

Fonsesca. R. J., Wiesemann. W. dan Rustem B. (2010). *Robust International Portfolio Managemen*. Working Paper. Departemen of Computing. Imperial College of Science, Technology and Medicine. London. UK.

Forgy, E. (1965), Cluster Analysis of Multivariate Data: Efficiency Versus Interpretability of Classifications. *Biometrics*, **21**:768.

Foss, A. H. dan Markatou, M. (2018). kamila: Clustering Mixed-Type Data in R and Hadoop. *Journal of Statistical Software*, **83**(13), 1 – 44.

Foss, A. H., Markatou, M., Ray, B. dan Heching, A., 2016. A Semiparametric Method for Clustering Mixed Data. *Machine Learning*, **105**, 419-458.

Fritz, H., Garcia-Escudero, L.A., dan Mayo-Iscar, (2012), tclust: An R Package For a Trimming Approach to Cluster Analysis, *Journal of Statistical Software*, **47**(12), 1–26.

García-Escudero L.A., Gordaliza A. dan Matran, C. (2003), Trimming Tools in Exploratory Data Analysis, *Journal of Computational and Graphical Statistics,* **12**, 434–449.

García-Escudero, L.A., Gordaliza, A., Matran, C. dan Mayo-Iscar, A. (2010), A Review of Robust Clustering Methods, *Advances in Data Analysis and Classification*, **4**, 89–109.

Garlappi, L., Uppal, R., dan Wang, T. (2004). Portfolio Selection with Parameter and Model Uncertainty: a multi-prior approach. *Review of Financial Studies*, **20**(1), 41-81.

Gentil, C. P. dan Feser, M. P. V. (2004). *Robust Mean Variance Portfolio Selection*. Working Paper 140, FAME-International Center for Financial Asset Management Engineering, University of Geneva.

Ghahtarani, A., Sheikhmohammady, M. dan Najafi, A. B. (2018), Development of Robust Random Variable for Portfolio Selection Problem, *Industrial Engineering & Management Systems*, **17**(4), 632–641.

Goldfarb, D., dan Iyengar, G. (2003). Robust Portfolio Selection Problems. *Mathematicsof Operations Research*, **28**, 1-38.

Gordaliza, A. (1991). Best Approximations to Random Variables Based on Trimming Procedures, *Journal of Approximation Theory*, **64**, 162–180.

Gramacki, A. (2018). *Nonparametric Kernel Density Estimation and Its Computational Aspects*, Springer International Publishing, Switzerland.

Guan, H. S. dan Jiang, Q. S. (2007). Cluster Financial Time Series for Portfolio, in *Int. Conf. on Wavelet Analysis and Pattern Recognition*, ICWAPR, Beijing, China, **2**, 851–856.

Gubu, L., Rosadi, D. dan Abdurakhman. (2019). Classical Portfolio Selection with Cluster Analysis: Comparison Between Hierarchical Complete Linkage and Ward Algorithm, in The 8th SEAMS-UGM International Conference on Mathematics and Its Applications, *AIP Conference Proceedings 2192*, 090004-1–090004-7.

Gubu, L., Rosadi, D. dan Abdurakhman. (2020a). Portfolio Selection Using Cluster Analysis and Fast Minimum Covariance Determinant Estimation Method, *Proceedings of The 62nd International Statistical Institute World Statistics Congress, ISI WSC 2019*, 281–290.

Gubu, L., Rosadi, D. dan Abdurrakhman. (2020b). Robust Mean-Variance Portfolio Selection with Ward and Complete Linkage Clustering Algorithm, *Economic Computation and Economic Cybernetics Studies and Research*, **54**(3), 111–127.

Gubu, L., Rosadi, D. dan Abdurrakhman. (2020c). Robust Mean-Variance Portfolio Selection Using Cluster Analysis: A Comparison Between KAMILA and Weighted k-mean Clustering, *Asian Economic and Financial Review,* **10**(10), 1169–1186.

Gubu, L., Rosadi, D. dan Abdurakhman. (2021a). Robust Mean-Variance Portfolio Selection with Time Series Clustering, in International Conference on Mathematics, Computational Sciences and Statistics 2020, *AIP Conference Proceedings 2329*, 060027-1–060027-11.

Gubu, L., Rosadi, D. dan Abdurrakhman. (2021b). Robust Portfolio Selection with Clustering Based on Business Sector of Stocks, *Media Statistika*, **14**(1), 33–43.

Gubu, L., Rosadi, D. dan Abdurrakhman. (2021c). New Approach for Robust Mean-Variance Portfolio Selection Using Trimmed *k*-means Clustering, *Industrial Engineering & Management Systems*, (**accepted**).

Gubu, L., Rosadi, D. dan Abdurakhman. (2021d). Time Series Clustering for Robust Mean-Variance Portfolio Selection: Comparison of Several Dissimilarity Measures, Journal of Physics: Conference Series, **2123**, 012021.

Hampel, F. R., Rousseeuw, P. J., Ronchetti E. dan Stahel, W. A., (1986). *Robust Statistics: The Approach Based on the Influence Function*, Wiley, New York.

Hansen, P. dan Jaumard, B. (1997). Cluster Analysis and Mathematical Programming, *Mathematical Programming*, **79**, 191-215

Hardin, J. S. (2000). *Multivariate Outlier Detection and Robust Clustering with Minimum Covariance Determinant Estimation and S-Estimation*. Dissertation. University of California.

Hardle, W. (1991). *Smoothing Techniques with Implementation in S*, Springer-Verlag, New York.

Hogg, R. V., Tanis, E. A. and Zimmerman, D. L. (2015). *Probability and Statistical Inference*, 9 edition. Pearson Education Inc.

Hu. J. (2012). *An Empirical Comparison of Different Approaches in Portfolio Selection*. Project Report 2012, 7. Uppsala Universitet.

Huber, R. J. (1981). *Robust Statistics*. New York: Wiley.

Hubert, M., dan Debyurne, M. (2010). Minimum Covariance Determinant. *Advanced Review*. WIREs Comp Stat. **2**, 36 - 43. John Wiley & Sons.

Hunt, L. dan Jorgensen, M. (2011). Clustering Mixed Data. *WIREs Data Mining and Knowledge Discovery*, **1**(4), 352–361

Husnan, S. (1994). *Dasar-dasar Teori Portofolio dan Analisis Sekuritas*. Unit Penerbitan dan Percetakan AMP YKPN.

Jain, A. dan Dubes, R. (1988). *Algorithms for Clustering Data*, Englewood Cliffs, NJ: Prentice Hall

Johnson, R. A. dan Wichern, D.W. (2007). *Applied Multivariate Statistical Analysis*. Sixth edition. Prentice Hall.

Kaszuba, B. (2012). Empirical Comparison of Robust Portfolios Investment Effects. *The Review of Finance and Banking*, **5**(1), 046 - 061.

Kaufman, L. dan Rousseeuw, P. (1990). *Finding Groups in Data: An Introduction to Cluster Analysis*. New York, NY: John Wiley & Sons.

Kent, J. T. dan Tyler, D. E. (1991). Redescending M-Estimates of Multivariate Location and Scatter. *The Annals of Statistic*, **19**(4), 2002-2019.

Kent, J. T. dan Tyler, D. E. (1996). Constrained M- Estimation for Multivariate Location and Scatter. *Journal Annals of Statistic*, 24(3), 1346-1370.

Kerdprasop, K., Kerdprasop, N., Sattayatham, P. 2005. *Weighted k-means for Density-Biased Clustering*, Lecture Notes in Computer Science, 488–497.

Kotz, S., Balakrishnan, N. dan Johnson, N.L. (2000). *Continuous Multivariate Distributions: Models and Applications*, volume 1 of *Continuous Multivariate Distributions*. 2nd edition. John Wiley & Sons.

Kusch, P. (2012). *Commodities or Not Commodities. Portfolio Optimization with Robust Mean-Variance and Mean-Conditional Value at Risk Strategies*. Project Report. Umea University Department of Economics.

Lance, G. dan Williams, W. (1967). A General Theory of Classification Sorting Strategies: Hierarchical Systems. *Computer Journal*, **9**, 373-380.

Lauprete. (2001). *Portfolio Risk Minimization under Departures from Normality*. Disertation. Massachusetts Institue of Technology.

Li, K., Sarkar, A. dan Wang, Z. (2003). Diversification Benefits of Emerging Markets Subject to Portfolio Constraints, *Journal of Empirical Finance*, **10**, 57-80.

133

Long, N. C., Wisitponghan, N. dan Meesad, P. (2014). Clustering Stock Data for Multi-Objective Portfolio Optimization, *International Journal of Computational Intelligence and Applications*, **13**(2), 1-13

Lopuhaa, H. P. (1989). On the Relation Between S-Estimators and M-Estimators of Multivariate Location and Covariance. *The Annals of Statistics*. **17**, 1662 - 1683.

Lopuhaa, H. P. dan Rousseeuw, J. P. (1991). Breakdown Point of Affine Equivariant Estimators of Multivariate Location and Covariance Matrix. *The Annals of Statistics*. **19**(1), 229 - 248.

Lu, Z. (2011). A Computational Study on Robust Portfolio Selection Based on a Joint Ellipsoidal Uncertainty Set. *Mathematical Programming*, 126, 193-201.

Lutgens, F. dan Schotman, P. (2006). *Robust Portfolio Optimization with Multiple Experts*. Working paper. University of Maastricht.

Maharaj, E. A. (2000). Clusters of Time Series. *Journal of Classification*, **17**(2), 297 - 314.

Marona, R.A. (1976). Robust M-Estimators of Multivariate Location and Scatter. *The Annals of Statistics*, **4**(1), 51-67.

Marona, R.A., Martin R.D. dan Yohai, V. J. (2006). *Robust Statistics*: Theory and Methods. John Wiley and Sons.

Markowitz, H. M. (1952). Portfolio Selection. *Journal of Finance*, **7**, 77-91.

Michaud, R. (1989). The Markowitz Optimization Enigma: Is Optimized Optimal? *Financial Analysts Journal*, **45**(1), 31 - 42.

Modha, D. S. dan Spangler, W. S. (2003). Feature Weighting in k-means Clustering. *Machine Learning,* **52**, 217-237.

Montero, P. dan Vilar, J. A. (2014). TSclust: An R Package for Time Series Clustering, *Journal of Statistical Software*, **62**(1), pp. 1–43, 2014.

Mori, H. (2004). Finite Sample Properties of Estimators for The Optimal Portfolio Weight. *Journal of the Japan Statistical Society*, **34**(1), 27-46.

Nanda, R., Mahanty, B. dan Tiwari, M.K. (2010). Clustering Indian Stock Market Data for Portfolio Management, *Expert Syst. Appl.* **37**(12), 8793–8798.

Niedermayer, D. (2008). *Portfolio Optimization under Parameter Uncertainty*. Working Paper. Tinbergen Research Institute. University of Basel.

Rai, P. dan Singh, S. (2010). A Survey of Clustering Techniques. *International Journal of Computer Applications*, **7**(12), 1-5.

Recchia, R. dan Scutella, M.G. (2009). *Robust Portfolio Asset Allocation: Models and Algorithmic Approach*. Technical Report (TR-09-01), University of Pisa, Italy.

Reilly, F. K. dan Brown, K. C. (2012). *Investment Analysis and Portfolio Management*. 10 th Edition, Thomson South-Western. USA.

Rencher, A. C. (2002). *Method of Multivariate Analysis,* 2 nd Edition, John Wiley & Sons, Inc., USA.

Rousseeuw, P. J. (1985). Multivariate Estimation with High Breakdown Point. *Mathematical Statistics and Applications*, Vol. B, 283-97.

Rousseeuw, P. dan Yohai, V. (1984). Robust Regression by Means of S-estimators. In Robust and Nonlinear Time Series Analysis. *Lecture Notes in Statistics*, **26**, 256 - 272. Springer, New York.

Rousseeuw P. J. dan Van Driessen K. (1999). A Fast Algorithm for The Minimum Covariance Determinant Estimator. *Technometrics*, **41**, 212 - 223.

Rupert., D. (2004). *Statistics and Finance: An Introduction*. Springer-Verlag. New York.

Scott, D. W. 1992. *Multivariate Density Estimation*. John Wiley & Sons Inc.

Searle, S.R. (1982). *Matrix Algebra. Useful for Statistics*. John Wiley and Sons.

135

Sharpe, W.F. (1994). The Sharpe Ratio. *The Journal of Portfolio Management*, **21**, 49–58.

Sim. M. (2004). *Robust Optimization. Dissertation*. Sloan School of Management. Massachusetts Institute of Technology.

Staudte, R.G. dan Sheather, S. J. (1990). *Robust Estimation and Testing*. John Wiley and Sons Inc.

Supandi, E.D., Rosadi. D., dan Abdurakhman (2017b). An Empirical Comparison between Robust Estimation and Robust Optimization to Mean-Variance. *Journal of Modern Applied Statistical Methods*. **16**(1), 589 - 611.

Supandi, E.D., Rosadi, D. dan Abdurakhman. (2017c). Improved Robust Portfolio Optimization. *Malaysian Journal of Mathematical Sciences*. **11**(2), 239 260.

Supandi, E.D. (2017). *Pengembangan Model Portofolio Mean-Variance Melalui Metode Robust dan Optimmasi Robust*. Disertasi. Jurusan Matematika.

Todorov, V., and Filzmoser, P. (2009). An Object Oriented Framework for Robust Multivariate Analysis. *Journal of Statistical Software*, **32**(3), 147.

Tola, V., Lillo, F., Gallegati, M. and Mantegna, R.N. (2008). Cluster Analysis for Portfolio Optimization, *J. Econ. Dyn. Control.* **32**(1), 235–258.

Tutuncu, R. and Koenig, M. (2004). Robust Asset Allocation. *Annals of Operations Research*, **13**, 157-187.

Vaz-de Melo, B., Camara, R. P. (2003). *Robust Multivariate Modelling in Finance.* Coppead Working Paper Series 355, Federal University at Rio de Janeiro, Rio de Janeiro, Brazil.

Victoria-Feser M.P. (2000). *Robust Portfolio Selection*. Research Report. Universite of Geneve.

Ward, J. (1963). Hierarchical Groupings to Optimize an Objective Function. *Journal of the American statistical association*, **58**, 236-244.

Welsh. R.Y. and Zhou. (2007). Application of Robust Statistics to Asset Allocation Models. *Statistical Journal*, **5**(1), 97-114.

Winston, W.L. & Goldberg, J.B. (2004). Operations Research: Applications and Algorithms, Thomson Learning Inc., Fourth edition, Canada.

Xu, R. & Wunsch, D.C. (2009). *Clustering*, John Wiley & Sons Inc., Hoboken, New Jersey.

Zhou, X. (2006). *Application of Robust Statistics to Asset Allocation Models*. Thesis. Massachusetts Institute of Technology.

Zhu, L. (2008). *Optimal Portfolio Selection Under the Estimation Risk in Mean Return*. Thesis. Mathematics in Computer Science Departement. University of Waterloo. Ontario. Canada.

Zymler. S. Rustem. B and Kuhn D. (2009). *Robust Portfolio Optimization with Derivative Insurance Guarantees*. Working Paper. Department of Computing Imperial College of Science, Technology and Medicine, UK.