



Performance Prediction through OEE-Model

CH. Anusha ^{*}, V. Umasankar

Vellore Institute of Technology, School of Mechanical Engineering, Chennai, Tamilnadu, India

References

- [1] M. Crnjac, I. Veža, N. Banduka, "From concept to the introduction of Industry 4.0," *International Journal of Industrial Engineering and Management*, vol. 8, no.1, pp.21-30, March. 2017, UDK: 005.1 658.5.
- [2] Becker, Juan M. Jauregui, Jesper Borst, and Abele van der Veen, "Improving the overall equipment effectiveness in high-mix-low-volume manufacturing environments," *CIRP Annals-Manufacturing Technology*, vol. 64, no.1, pp.419-422, May. 2015, doi:10.1016/j.cirp.2015.04.126.
- [3] Hooi, Lai Wan, and Tat Yuen Leong, "Total productive maintenance and manufacturing performance improvement," *Journal of Quality in Maintenance Engineering*, vol. 23, no. 1 pp. 2-21, March. 2017, doi:10.1108/JQME-07-2015-0033.
- [4] LBSPartners. "TPM and OEE ." [Online]. Available: https://www.lbspartners.ie/wp-content/uploads/2018/12/TPMOEEEBook_LBSPartners.pdf. [Accessed: December -2015].
- [5] Anvari, Farhad, Rodger Edwards, and Andrew Starr, "Evaluation of overall equipment effectiveness based on market," *Journal of Quality in Maintenance Engineering*, vol. 16, no. 3, pp. 256-270, Aug. 2010, doi:10.1108/13552511011072907.
- [6] Fattah, Jamal, Latifa Ezzine, and Abdeslam Lachhab, "Evaluating the Performance of a Production Line by the Overall Equipment Effectiveness: An Approach Based on Best Maintenance Practices," *International Journal of Engineering Research in Africa*, vol. 30, pp. 181-189, Trans Tech Publications Ltd, May.2017, doi:10.4028/www.scientific.net/JERA.30.181.
- [7] Tomić, Miloš, Zdravko Tešić, Bogdan Kuzmanović, and Ivana Tomić, "A Model for Analyzing and Measuring the Performance of Industrial Enterprises," *International Journal of Industrial Engineering and Management*, vol.6, no.1, pp. 21-28, March 2015, UDK: 007:004.
- [8] Relkar, S. Anand, and K. N. Nandurkar, "Optimizing & analysing overall equipment effectiveness (OEE) through design of experiments (DOE)," *Procedia Engineering*, vol. 38, pp. 2973-2980, 5 september 2012, doi:10.1016/j.proeng.2012.06.347.
- [9] Christian B. Madsen, Estelle Cormier, Javier Von Stecher, Kuo Liu, Gennady Voronov, Hans Gu, Ed Wiley. "Python for Analytics and The Role of R." [Online]. Available at: https://www.seagate.com/files/www-content/ti-dm/_shared/images/r-and-python-pv0026-1-1409us.pdf [Accessed September 2014].
- [10] Newgenapps. "Why choose R programming for data science projects?." [Online]. Available: <https://www.newgenapps.com/blog/6-reasons-why-choose-r-programming-for-data-science-projects>. [Accessed: 18-Sep-2017].
- [11] Robert Nau, "Forecasting with moving averages." [Online]. Available at: <http://people.duke.edu/~rnau/forecasting.htm>. [Accessed August 2014].
- [12] Cory Mitchell. "How to Use a Moving Average to Buy Stocks." [Online]. Available at: <https://www.investopedia.com/articles/active-trading/052014/how-use-moving-average-buy-stocks.asp> [Accessed 6 May 2019].
- [13] S. Hansun, "H-WEMA: A New Approach of Double Exponential Smoothing Method," *Telkommika*, vol.14, no.2, pp.772-777, Jun. 2016, doi:10.12928/telkommika.v14i2.3096
- [14] V. V. Lavrov, and N. A. Spirin, "Automated information system for analysis and prediction of production situations in blast furnace plant." In *IOP Conference Series: Materials Science and Engineering* 150, 2016pp. 012010, doi: 10.1088/1757-899X/150/1/012010.
- [15] C.P. Ahire and A.S. Relkar, "Correlating failure mode effect analysis (FMEA) & overall equipment effectiveness (OEE)," *Procedia Engineering*, Vol.38, pp.3482-3486, Jan.2012, doi:10.1016/j.proeng.2012.06.402.
- [16] R. Singh, D.B. Shah, A.M. Gohil, and M.H. Shah, "Overall Equipment Effectiveness (OEE) calculation-Automation through hardware & software development," *Procedia Engineering*, vol.51, pp.579-584, April 2013, doi:10.1016/j.proeng.2013.01.082.
- [17] M. Pospíšil, V. Mates, T. Hruška, and V. Bartík, "Process mining in a manufacturing company for predictions and planning." *International Journal on Advances in Software*, vol. 6, no. 3 & 4, 2013, doi:10.1.1.672.4578&rep=rep1&type=pdf.
- [18] C.L. Huang and C.C. Huang, "Cloud computing-based intelligent manufacturing scheduling system using the quality prediction method," *Transactions of the Canadian Society for Mechanical Engineering*, vol.37, no. 3, pp.981-989, 2013,

doi:10.1139/tcsme-2013-0084.

- [19] R.J.K. Netto, E.A.P. Santos, E.D.F.R. Loures, and R. Pierozan, "Using Overall Equipment Effectiveness (OEE) to predict shut down maintenance," In *Engineering systems and networks.*, Springer, pp. 13-21, Dec. 2016 doi: 10.1007/978-3-319-45748-2_2.
- [20] P.A. Hillberg, S. Sengupta, and R.P. Van Til, "A Comparative Study of the Three Predictive Tools for Forecasting a Transfer Line's Throughput," *International Journal of Industrial Engineering: Theory, Applications, and Practice.*, vol.16, no.1, pp. 32-40,2009,
- [21] A. Azizi, "Evaluation Improvement of Production Productivity Performance using statistical process Control, Overall Equipment Efficiency, and Autonomous Maintenance," *Procedia Manufacturing.*, vol. 2, pp. 186-190, October 2015, doi: 10.1016/j.promfg.2015.07.032.
- [22] M. Lalkiya, and D.K. Kushwaha, "Optimizing &Analyzing Overall Equipment Effectiveness Through TPM Approach: A Case Study In Cement Industry," vol.2, no.5, pp.807-811, May 2015,
- [23] F.K. Wang and W. Lee, "Learning Curve Analysis in Total Productive Maintenance." *The International Journal of Management Science.*, vol.29, no.6, pp.491-499, Dec.2001, doi:10.1016/S0305-0483(01)00039-1.
- [24] H.V. Ravinder, "Forecasting With Exponential Smoothing What's The Right Smoothing Constant?," *Review of Business Information Systems (RBIS)*, vol.17,no.3, pp.117-126,Aug.2013,doi:10.19030/rbis.v17i3.8001.
- [25] P. Muchiri and L. Pintelon, "Performance measurement using overall equipment effectiveness (OEE): literature review and practical application discussion." *International Journal of Production Research.*, vol.46, no.13, pp.3517-3535,Apr.2008, doi:10.1080/00207540601142645.
- [26] B. Dal, P.Tugwell and R. Greatbanks, "Overall equipment effectiveness as a measure of operational improvement-a practical analysis," *International Journal of Operations & Production Management.*, vol.20, no.12, pp.1488-1502, Dec. 2000, doi:10.1108/01443570010355750.
- [27] C.J. Bamber, P.Castka, J. M. Sharp, Y. Motara, "Cross-functional team working for Overall Equipment Effectiveness(OEE)", *Journal of Quality in Maintenance Engineering.*, Vol. 9 No. 3, pp. 223-238, Sep. 2003, doi:10.1108/13552510310493684.