



Implementing a maintenance strategic plan using TPM methodology

G. Pinto ^a, F. J. G. Silva ^{a*}, N. O. Fernandes ^b, R. Casais ^a, A. Baptista ^a, C. Carvalho ^a

^a ISEP - School of Engineering, Polytechnic of Porto, Mechanical Engineering Department, Porto, Portugal

^b Instituto Politécnico de Castelo Branco, Mechanical Engineering Department, Castetelo Branco, Portugal

References

- [1] G. Pinto, F. J. G. Silva, R. D. S. G. Campilho, R. B. Casais, A. J. Fernandes, A. Baptista, "Continuous improvement in maintenance: a case study in the automotive industry involving Lean tools". *Procedia Manuf.*, vol. 38, pp. 1582-1591, 2019, doi: 10.1016/j.promfg.2020.01.127.
- [2] T. Santos, F. J. G. Silva, S. F. Ramos, R. D. S. G. Campilho, L. P. Ferreira, "Asset priority setting for maintenance management in the food industry," *Procedia Manuf.*, vol.38, pp. 1623-1633, 2019, doi: 10.1016/j.promfg.2020.01.122.
- [3] P. Neves, F. J. G. Silva, L. P. Ferreira, T. Pereira, R. M. Gouveia, C. Pimentel, "Implementing lean tools in the manufacturing process of trimming products," *Procedia Manuf.*, vol.17, pp.696-704, 2018, doi: 10.1016/j.promfg.2018.10.119.
- [4] M. D. O. Reis, R. Godina, C. Pimentel, F. J. G. Silva, J. C. O. Matias, "A TPM strategy implementation in an automotive production line through loss reduction," *Procedia Manuf.*, vol. 38, pp. 908-915, 2019, doi: 10.1016/j.promfg.2020.01.173.
- [5] I. M. Ribeiro, R. Godina, C. Pimentel, F. J. G. Silva, J. C. O. Matias, "Implementing TPM supported by 5S to improve the availability of an automotive production line," *Procedia Manuf.*, vol. 38, pp. 1574-1581, 2019, doi: 10.1016/j.promfg.2020.01.128.
- [6] R. Thorat, G. Mahesha, "Improvement in productivity through TPM implementation", *Materials Today: Proceedings*, vol 24, pp. 1508-1517, 2020 doi: 10.1016/j.matpr.2020.04.470.
- [7] A. Sharma, A. Joshi, V. Jurwall, "Performance measurement metrics in TPM: A contextual view to training and development", *Materials Today: Proceedings*, vol 28, pp. 2476-2480, 2020 doi: 10.1016/j.matpr.2020.04.796.
- [8] M. Suryaprakash, M. Prabha, M. Yuvaraja, R. Revanth, "Improvement of overall equipment effectiveness of machining centre using tpm", *Materials Today: Proceedings*, 2020, doi: 10.1016/j.matpr.2020.02.820
- [9] A. Moreira, F. J. G. Silva, A. I. Correia, T. Pereira, L. P. Ferreira, F. Almeida, "Cost reduction and quality improvement in the printing industry," *Procedia Manuf.*, vol. 17, pp. 623-630, 2018, doi: 10.1016/j.promfg.2018.10.107.
- [10] C. Rosa, F. J. G. Silva, L. P. Ferreira, "Improving the quality and productivity of steel wire-rope assembly lines for the automotive industry," *Procedia Manuf.*, vol. 11, pp. 1135-1142, 2017, doi: 10.1016/j.promfg.2017.07.214.
- [11] R. F. L. Santos, F. J. G. Silva, R. M. Gouveia, R. D. S. G. Campilho, M. T. Pereira, L. P. Ferreira, "The improvement of an APEX machine involved in the tire manufacturing process," *Procedia Manuf.*, vol. 17, pp. 571-578, 2018, doi: 10.1016/j.promfg.2018.10.098.
- [12] S. Ferreira, F. J. G. Silva, R. B. Casais, M. T. Pereira, L. P. Ferreira, "KPI development and obsolescence management in industrial maintenance," *Procedia Manuf.*, vol. 38, pp. 1427-1435, 2019, doi: 10.1016/j.promfg.2020.01.145.
- [13] A. Morimoto, Y. Sato, S. Takata, "Continuous Improvement of Criteria for Condition-based Maintenance by Means of Effects Evaluation of Treatments," *Procedia CIRP*, vol. 61, pp. 293-298, 2017, doi:10.1016/j.procir.2016.11.266.
- [14] BS EN 13306:2010 - Maintenance - Maintenance terminology. British Standard Institution, London, UK, 2010.
- [15] Monchy, F. La fonction maintenance : Formation à la gestion de la maintenance industrielle. Elsevier Masson, Paris, pp. 15-77, 1996. ISBN 2-225-85518-8.
- [16] C. Lundgren, A. Skoogh, J. Bokrantz, "Quantifying the effects of maintenance: a literature review of maintenance models," *Procedia CIRP* vol. 72, pp. 1305-1310, 2018, doi: 10.1016/j.procir.2018.03.175.
- [17] J. Coetzee, "A holistic approach to the maintenance "problem", " *Journal of Quality in Maintenance Engineering* vol. 5(3) pp. 276-281, 1999, doi: 10.1108/13552519910282737.
- [18] Courtois A, Pillet M, Martin-Bonnefous C. *Gestão da Produção* (in Portuguese), Lidel - Edições Técnicas, Lda., Lisboa, Portugal, 2006. ISBN: 9789727574698.

- [19] P. Guariente, I. Antonioli, L. P. Ferreira, T. Pereira, F. J. G. Silva, "Implementing autonomous maintenance in an automotive components manufacturer," *Procedia Manuf.*, vol. 13, pp. 1128-1134, 2017, doi: 10.1016/j.promfg.2017.09.174.
- [20] F. L. Cooke, "Implementing TPM in plant maintenance: some organizational barriers," *International Journal of Quality & Reliability Management*, vol. 17 No. 9, pp 1003-1016, 2000, doi: 10.1108/02656710010378789.
- [21] A. H. Bakti, A. R. A. Rahim, N. M. Yusof, R. Ahmad, "Booting Lean production via TPM," *Procedia - Social and Behavioral Sciences*, vol. 65 pp. 485-491, 2012, doi: 10.1016/j.sbspro.2012.11.153.
- [22] K. Antosz, L. Pasko, A. Gola, "The Use of Intelligent Systems to Support the Decision-Making Process in Lean Maintenance Management" *IFAC-PapersOnLine*, vol. 52(10) pp. 148-153, 2019, doi: 10.1016/j.ifacol.2019.10.037.
- [23] P. Ribeiro, J. C. Sá, L. P. Ferreira, F. J. G. Silva, M. T. Pereira, G. Santos, "The Impact of the Application of Lean Tools for Improvement of Process in a Plastic Company: a case study," *Procedia Manuf.*, vol. 38, pp. 765-775, 2018, doi: 10.1016/j.promfg.2020.01.104.
- [24] C. Costa, L. P. Ferreira, J. C. Sá, F. J. G. Silva, "Implementation of 5S methodology in a metalworking company," *DAAAM International Scientific Book*, pp. 001-012, 2018, doi: 10.2507/daaam.scibook.2018.01, ISBN 978-3- 902734-19-8, ISSN 1726-9687
- [25] IATF 16949:2016 - Quality management system requirements for automotive production and relevant service parts organization, IATF - International Automotive Task Force, 2016.
- [26] T. Pombal, L. P. Ferreira, J. C. Sá, M. T. Pereira, F. J. G. Silva, "Implementation of Lean methodologies in the management of consumable materials in the maintenance workshop of an industrial company," *Procedia Manuf.*, vol. 38, pp. 975-982, 2019, doi: 10.1016/j.promfg.2020.01.18.
- [27] P. Dias, F. J. G. Silva, R. D. S. G. Campilho, L. P. Ferreira, T. Santos, "Analysis and Improvement of an Assembly Line in the Automotive Industry," *Procedia Manuf.*, vol. 38, pp. 1444-1452, 2019, doi: 10.1016/j.promfg.2020.01.143.
- [28] E. Sousa, F. J. G. Silva, L. P. Ferreira, M. T. Pereira, R. Gouveia, R. P. Silva, "Applying SMED methodology in cork stoppers production," *Procedia Manuf.*, vol. 17, pp. 611-622, 2018, doi: 10.1016/j.promfg.2018.10.103.