





















- Greenlaw, C., & Brown-Welty, S., (2009). A comparison of web-based and paper-based survey methods: testing assumptions of survey mode and response cost". *Evaluation Review*, 33(5):464- 480.
- Hursman, A. (2010). Measure what matters. [online]. *Information management*. Retrieved from: <http://web.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=48&hid=11&sid=a294ed98>. – Accessed October 2017.
- Kang, H.S., Lee, J.Y, Choi, S, Kim, H., Park, J. H., Son, J.Y. & Do Noh, S. (2016). SMART manufacturing: Past research, present findings, and future directions. *International Journal of Precision Engineering and Manufacturing-Green Technology*, 3(1), 111-128.
- Medoh C.N and Telukdarie A., 2018. A Methodology to Integrate Artificial Intelligence with the Design Structure Matrix Approach. In 2018 IEEE International Conference on Industrial Engineering and Engineering Management (IEEM) (pp. 783-787). IEEE.
- Miller, T. (2018). Explanation in artificial intelligence: Insights from the social sciences. *Artificial Intelligence*.
- Ojo, A.S., & Ololade, O.F., (2013). An assessment of the Nigerian manufacturing sector in the era of globalization. *American Journal of Social and Management Sciences*, 5(1), pp.27-32.
- Onuoha, B.C., (2012). The environments of the manufacturing sector in Nigeria: Strategies towards vision 20: 2020. *International Business and Management*, 5(1), pp.67-74.
- Powell, R.R. & Connaway, L.S., (2004). *Basic research methods for librarians*; London: Libraries Unlimited.
- Proshare, (2014). Nigerian Manufacturing sector: [https:// www. proshareng.com /admin /upload /.../ manufacturing sector20102012.pdf](https://www.proshareng.com/admin/upload/.../manufacturing-sector20102012.pdf). Adapted online December 2017.
- Reja, U., Manfreda, K.L., Hlebec, V., Vehovar, V., (2003). Open-ended vs. close-ended questions in web questionnaires. *Developments in applied statistics*; 19(1):159-77.
- Roblek, V., Meško, M., & Krapež, A. 2016. A complex view of industry 4.0. *SAGE Open*, 6(2), 2158244016653987.
- Schlechtendahl, J., Keinert, M., Kretschmer, F., Lechler, A., & Verl, A., (2015). Making existing production systems Industry 4.0-ready. *Production Engineering*, 9, 143-148. doi:10.1007/s11740-014-0586-3.
- Simons, H. (2009). *Case study research in practice*, Los Angeles, Sage.
- Siniscalco, M.T., & Auriat, N., (2005). Questionnaire design. *Quantitative research methods in educational planning*, pp.1-92.
- Sola, O., Obamuyi, T.M., Adekunjo, F.O., & Ogunleye, E.O. (2013). Manufacturing performance in Nigeria: Implication for sustainable development". *Asian Economic and Financial Review*, 3(9), p.1195.
- Stangor, C., (2011). *Research Methods for the Behavioural Sciences 4th Edition*, Belmont: Wadsworth, Cengage Learning.
- Telukdarie, A. (2016). Rapid deployment Toolset for Manufacturing Systems Enablement. *International Association for Management of Technology, IAMOT 2016, Conference Proceedings*.
- Wang, S, Wan, J, Li, D., & Zhang, C. (2016). Implementing SMART factory of industry 4.0: an outlook. *International Journal of Distributed Sensor Networks*, 12(1), 3159805.
- Yannakakis, G. N., and Togelius, J. (2018). *Artificial intelligence and games (Vol. 2)*. New York: Springer.

### **Citations:**

to this paper should be made as follows: Medoh, C.N and Telukdarie, A. (201...) 'An evaluation of the fourth industrial revolution adoption in manufacturing industries: An African context', *Proceedings of the international conference on Industrial Engineering and Operations Management*, Vol. ...., No. ...., pp ....Toronto, Canada, October 23-25, 2019.

### **Biographies**

**Arnesh Telukdarie** holds a Doctorate in Chemical Engineering from the Durban University of Technology, South Africa. Prof. Telukdarie is currently an associate professor in the School of Engineering Management at the University of Johannesburg and a Professional Consulting Engineer. Prof. Telukdarie has over 20 years of industrial experience, research interest includes Manufacturing and Corporate Systems.

**Chuks Medoh** holds a master degree in Engineering management from the University of Johannesburg, South Africa. Chuks Medoh is currently a Ph.D. candidate in the postgraduate school of Engineering management at the University of Johannesburg and a Professional Business Analyst. Current research work focuses on the development of a sustainable business process decision-making model.