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| **Department** | Operations Management | | |
| **Discipline** | Operations Management, Quality Management | | |
| **Broad Research Focus Area** | Leadership Ethics, Quality Management, Integrated Quality Management, Quality 4.0 | | |
| **Total 2025 RFA Capacity** | Total: 1 Master Supervision, 1 Master Co-Supervision | | |
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| **Supervision Team details:** | **Academic Profile** | | **Capacity** |
| **SUPERVISOR INFORMATION**  **Mr Feizel Ally**  Office: Nkoana Simon Radipere Building, 4-49, Main Campus, Pretoria  Email: [allyf@unisa.ac.za](mailto:allyf@unisa.ac.za)  Orchid ID [https://orcid.org/0000-0002-6414-8747](https://eur06.safelinks.protection.outlook.com/?url=https%3A%2F%2Fprotect.checkpoint.com%2Fv2%2F___https%3A%2F%2Forcid.org%2F0000-0002-6414-8747%3Flang%3Den___.YzJlOnVuaXNhbW9iaWxlOmM6bzpiYTA2YTMwNmE2OTk5OGY1NzgxZjQxYzhiMWQ0YzNkYjo2OjlhMTk6Mjg2YTQ0NjdjZDkxY2VjNTVjYzRhYjBhZjA2NWM4NWQ4M2E5Zjg2YjNiY2Q1MzY1N2MyY2UxMmM4MjAzN2JhMDpoOlQ&data=05%7C02%7Callyf%40unisa.ac.za%7C41347e231d8e4710314508dc2a547cb2%7Cca9a8b8c3ea34799a43e5510398e7a3b%7C0%7C0%7C638431789557976617%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C0%7C%7C%7C&sdata=C4%2FVqya9DYeB%2FvVWbRBoNc3vDoyGhsHszkxuV80nNgc%3D&reserved=0) | Lecturer in the Department of Operations Management in the Quality Management Section. Qualifications are Associate Diploma (PMI), Advanced Business Management (Wits Technicon), MBA University of Johannesburg. Current studies Doctor of Business Leadership (SBL). Published 1 Conference proceeding. Review articles for JTSCM (Journal of Transport and Supply Chain Management). Conduct training presentations at the Innovation Hub. Quality champion for Department of Operations Management. Southern African Society (SASQ) Stakeholder Engagement Board Director. | | 1 master’s Student expected.  **Supervision**  1 master’s Student expected.  **Co-Supervision** |
| **CO-SUPERVISOR (S) INFORMATION** |  | |  |
| **Model of supervision** | Allocated candidates will be Supervised with the support of the Co-supervisor. A project plan will be set with the candidate. Timelines and regular two-week appointments to report on progress, improvements, and allocation of further work to be completed and presented by the candidate.  The candidate must present his/her work to a panel of academics at colloquium. | | |
| **Selection criteria: Master’s/Doctorate** | The Selection of a master’s degree will be agreed with the Research Committee. This is dependent on whether the candidate qualifications meet the criteria. | | |
| **Selection Procedure** | A candidate is selected from a list provided by the research committee. Based on the title and proposal the candidate will be selected. | | |
| **Research scope** | **Scope of research** is based on Leadership Ethics., Quality management, Integrated Quality Management Systems, Quality 4.0.  **Leadership Ethics**  leadership navigates complex challenges, drives innovation, and fosters a positive organisational culture. Leadership characteristics: visionary thinking, Emotional intelligence, Adaptability, Communication, Decision-making. Leadership styles: Transformational, Servant leadership, Transactional leadership, and Situational leadership. Leadership Opportunities: Globalisation, Technological Advancements, Remote working, and Ethical leadership. Performance leadership: employee engagement, Innovation and creativity and Organisational culture. Leadership Contributions: Development, effectiveness, skills development, diversity, innovation, performance driven, crisis, resilience, recovery, emotional intelligence, behaviours. Research efforts to understand effective leadership practices, address emerging challenges, and drive innovation to develop and implement sustainable leadership.  **Quality Management**  Quality management focus is on organisational performance: continuous improvement, customer satisfaction, process efficiency, high-quality products and services by optimising resources and meeting regulatory requirements.  Quality tools, Statistical Process Control, Ishikawa fishbone, Quality Function Deployment. Quality Philosophers, Quality Frameworks.Total Quality Management (TQM), Quality standards: ISO 9001, are used to maintain consistency and excellence in meeting customer expectations. Process improvement: Kaizen, DMAIC (Define, Measure, Analyse, Improve, Control), PDCA, (Plan Do Check Act), Six Sigma, Lean Management. Quality culture: teamwork, accountability, and innovation. Global supply chains: consistency and traceability. Digital transformation: AI, IoT, and data analytics to monitor, predictive maintenance and decision support.  Regulatory compliance: adhere to regulations and standards.  Research areas: Innovative strategies, Collaborative efforts: Improving organisational performance and competitiveness. Advancing quality management to increase organisational competitiveness.  **Integrated Quality Management Systems**  Integrated Quality Management Systems (IQMS) a comprehensive approach to manage quality across all aspects of an organisation. IQMS integrates various quality-related functions, processes, and systems to ensure consistency, efficiency, and continuous improvement in delivering products or services that meet or exceed customer expectations.  Research areas: IQMS effectiveness, Comparative analysis, Case studies and Stakeholder perspectives.  **Quality 4.0**  The integration of advanced digital technologies, data analytics, and automation into traditional quality management practices within manufacturing industries. It emphasises leveraging Industry 4.0 technologies to enhance quality control, process efficiency, and overall performance.    Research areas: The Impact of Quality 4.0 on Manufacturing Performance, The Adoption and implementation of Quality 4.0. Analysing organisations that successfully implemented Quality 4.0 | | |
| **Reading:**  **Subject Field** | **This is a selection of articles and/or recent books in this research focus area. ‎Further reading over and above these is essential:**   1. Ali, K.; Johl, S.K. Impact of total quality management on industry 4.0 readiness and practices: Does firm size matter? International. Journal of Computer Integrated Manufacturung, 2022, 1–23. 2. Alzahrani, B.; Bahaitham, H.; Andejany, M.; Elshennawy, A. How Ready Is Higher Education for Quality 4.0 Transformation according to the LNS Research Framework? Sustainability 2021, 13, 5169. <https://doi.org/10.3390/su13095169> 3. Antonino, P.O, Capilla, R, Pelliccione, P, Schnicke, F, Espen, D, Kuhn,T, Schmid, K, Pablo, A Quality 4.0 Model for architecting industry 4.0 systems. Advanced Engineering Informatics. 2022, 54, <https://doi.org/10.1016/j.aei.2022.101801> 4. Antony, J., McDermott, O. and Sony, M, Quality 4.0 conceptualization and theoretical understanding: a global exploratory qualitative study, The TQM Journal, 2022 34,(5), 1169-1188 5. Babatude, O K, Mapping the implications and competencies for Industry 4.0 to hard and soft total quality management, The TQM Journal (4), 2021, 896-914. <https://doi.org/10.1108/TQM-07-2020-0158> 6. Bi,Z; Zhang, W-J; Wu, C, Luo, C4 and Xu, L, Generic Design Methodology for Smart Manufacturing Systems from a Practical Perspective, Part I—Digital Triad Concept and Its Application as a System Reference Model. Machines, 2021. <https://doi.org/10.3390/machines9100207> 7. Bisio, I., Garibotto, C., Grattarola, A., Lavagetto, F., & Sciarrone, A. (2018). Exploiting context-aware capabilities over the internet of things for industry 4.0 applications. IEEE Network, 32(3), 108–114. <https://doi.org/10.1109/MNET.2018.1700355> 8. Blog: Quality 4.0: The Future of Quality? Available online: <https://www.juran.com/blog/quality-4-0-the-future-of-quality> 9. Broday, S., Advancements in Statistical Quality Control: Shewhart's Contribution. Quality Engineering, 2022, 14(3), 231-245. 10. Broday, E.E, The evolution of quality: from inspection to quality 4.0, International Journal of Quality and Service Sciences, 2022, (14) 3, 368-382. <https://doi.org/10.1108/IJQSS-09-2021-0121> 11. Chiarini, A.; Kumar, M. What Is Quality 4.0? An Exploratory Sequential Mixed Methods Study of Italian Manufacturing Companies. Int. J. Prod. Res. **2021**, 60, 4890–4910. 12. Cisco, 2017, Time-Sensitive Networking: A Technical Introduction 13. Dias, A.M.; Carvalho, A.M.; Sampaio, P. Quality 4.0: Literature Review Analysis, Definition and Impacts of the Digital Transformation Process on Quality. Int. J. Qual. Reliab. Manag. **2021**. 14. Efimova, A, Briš, P, Quality 4.0 for Processes and Customers, 2021, Quality Innovation Prosperity/Kvalita Inovacia Prosperita (25) 3. <https://doi.org/10.12776/QIP.V25I3.1609> 15. .Engelstädter, H , Hell, R, Quality Management 4.0 Digitization, automation, and AI-based testing as game-changing technologies, 2020, Oliver Wyman. 16. Fonseca, L. Amaral, A; Oliveira, J., Quality 4.0: The EFQM 2020 Model and Industry 4.0 Relationships and Implications. Sustainability **2021**, 13, 3107. <https://doi.org/10.3390/su13063107>. 17. Ford, H., My Life and Work. Doubleday, Page & Company, (1922). 18. Grant, E. Big data-driven innovation, deep learning-assisted smart process planning, and product decision-making information systems in sustainable Industry 4.0. Econ. Manag. Financ. Mark. **2021**, 16, 9–19. 19. Gremyr, I., Lenning, J., Elg, M. and Martin, J, Increasing the value of quality management systems, International Journal of Quality and Service Sciences, 2021, 13 (3), 381-394. 20. Haleem, A. and Javaid, M, “Additive manufacturing applications in industry 4.0: a review”, Journal of Industrial Integration and Management, 2019, (4), 4, 1-23. 21. Hayes, A, Vertical Integration Explained: How it works, with types and examples, Corporate Finance, M&A, 2023. 22. Huang, Z, Shahzadi, A, Khan,Y. D, “Unfolding the Impact of Quality 4.0 Practices on Industry 4.0 and Circular Economy Practices: A Hybrid SEM-ANN Approach.” 2022, Journal MDPI, Sustainability, (14) 23. Javaid, M, Haleem, A, Singh, R. P, Suman, R, Significance of Quality 4.0 towards comprehensive enhancement in manufacturing sector, 2021, Sensors, International 2, <https://doi.org/10.1016/J.sintl.2021.100109>. 24. Jha, A., Sharma, R.R.K., Kumar, V. and Verma, P., “Designing supply chain performance system: a strategic study on Indian manufacturing sector”, 2022, Supply Chain Management: An International Journal, 27 (1), 66-88. 25. Karmakar, A., Dey, N., Baral, T., Chowdhury, M., & Rehan, M., Industrial internet of things: A review, 2019 International Conference on Opto-Electronics and Applied Optics, Optronix 2019, 1–6. <https://doi.org/10.1109/OPTRONIX.2019.8862436>. 26. Klein, M, Leadership Characteristics in the era of digital transformation, 2020, Business & Management Studies: An International Journal, 8 (I), 883-902. 27. <http://dx.doi.org/10.15295/bmij.v8i1.1441> 28. Kumar,R.R, Ganesh, L.S. and Rajendran,C. Quality 4.0 – a review of and framework for quality management in the digital era, International Journal of Quality & Reliability Management, (39), 6, 2022, 1385-1411. <https://doi.org/10.1108/IJQRM-05-2021-0150>. 29. Lahmine, S and Bennouna F, Towards a better understanding of Quality 4.0, 2022 Innovative Technologies Laboratories, SMBA University, Fez, Morocco. 30. Maganga, D.P.; Taifa, I.W. Quality 4.0 Transition Framework for Tanzanian Manufacturing Industries. 2022, TQM Journal. 31. Maganga, D.P, Taifa, W.R, Quality 4.0 conceptualisation: an emerging quality management concept for manufacturing industries, The TQM Journal, (35), 2, 2023. <https://doi.org/10.1108/TQM-11-2021-0328> 32. Mckindrick, J, Industry 4.0 Success Requires Collaboration, 8 July 2021 33. Mittal, A, Kumar, V, Verma, P, Singh, A, Evaluation of organizational variables of quality 4.0 in digital transformation: the study of an Indian manufacturing company, 2022, The TQM Journal 1754-2731. <https://doi.org/10.1108/TQM-07-2022-0236> 34. Montgomery, D. C., Introduction to Statistical Quality Control, 2020, John Wiley & Sons. 35. Mrugalska, B, and Ahmed, J, Organizational Agility in Industry 4.0: A Systematic Literature Review, Sustainability **2021**, 13, 8272. <https://doi.org/10.3390/su13158272> 36. Mtotywa, M.M. Developing a Quality 4.0 Maturity Index for Improved Business Operational Efficiency and Performance. Quality Innovation. Prosper. **2022**, 26, 101–127. 37. Murugesan, V. What Is Quality 4.0? And What It Isn’t. Available online: blog.lnsresearch.com/what-is-quality-4.0-and-what-itisnt, 2022 38. Nguyena, T.V, Phamb, H. T, Hacand, H. M, Tran, T. T. T, An integrated model of supply chain quality management,Industry 3.5 and innovation to improve manufacturers’performance–a case study of Vietnam, International Journal of Logistics: Research and Applications, (27), 2, 261–283, 2024. <https://doi.org/10.1080/13675567.2022.2059457> 39. Nyman, J., Revisiting Scientific Management Theories: Insights for Contemporary Organizations. Journal of Management Studies, (2023). 40(3), 301-319. 40. Pivoto, D.G.S, De Almeida, L.F.F, Da Rosa Righi, R, Rodrigues, J.P.C., Lugli, A, B, Alberti, A.M, Cyber-physical systems architectures for industrial internet of things applications in Industry 4.0: A literature review, The Society of Manufacturing Engineers, 2020. <https://doi.org/10.1016/j.jmsy.2020.11.017>. 41. Prashar, A, Quality management in industry 4.0 environment: a morphological analysis and research agenda, 2023, International Journal of Quality & Reliability Management, 40 (3), 863-885, https//doi.org/10.1108/IJQRM-10-2021-0348 42. Sader, S., Husti, I. and Daroczi, M. A review of quality 4.0: definitions, features, technologies, applications, and challenges, Total Quality Management and Business Excellence, 2022, 33 9/10, 1164-1182. 43. Sariyer, G., Mangla, S.K., Kazancoglu, Y., Ocal Tasar, C. and Luthra, S. 2021, “Data analytics for quality management in Industry 4.0 from a MSME perspective”, Annals of Operations Research, pp. 1-29, <https://doi.org/10.1007/s10479-021-04215-9>. 44. Romero, D., Gaiardelli, P., Powell, D., Wuest, T. and Thürer, M. “Digital lean cyber-physical production systems: the emergence of digital lean manufacturing and the significance of digital waste”, Part I, IFIP AICT, 2018, 535, 11-20. 45. Sony, M., Antony, J. and Douglas, J.A., Essential ingredients for the implementation of Quality 4.0: a narrative review of literature and future directions for research, The TQM Journal, 2020, 32, (4), 779-793. 46. Sony, M.; Naik, S. Industry 4.0 integration with socio-technical systems theory: A systematic review and proposed theoretical model. Technology. Society. 2020, 61, 101248. 47. Taylor, F. W., Principles of Scientific Management. Harper & Brothers, (1911). 48. Thekkoote, R. Enabler toward Successful Implementation of Quality 4.0 In digital Transformation Era: A comprehensive Review and future research Agenda. International, Journal. Quality Reliability. Management. **2022**, 49. Van Assen, M,F, Empowering leadership and contextual ambidexterity-The mediating role of committed leadership for continuous improvement (2020) ScienceDirect European Management Journal, 38, 435-449, <https://doi.org/10.1016/j.emj.2019.12.002> 50. Verma, P., Kumar, V., Mittal, A., Gupta, P. and Hsu, S.C., “Addressing strategic human resource management practices for TQM: the case of an Indian tyre manufacturing company”, 51. The TQM Journal, (2022a), 71 (2), 445-476. 52. Virmani, N., Upadhya. M, Luthra, Singh, & Upadhyay. A., Total Quality Control: A Paradigm Shift in Quality Management., (2023). International Journal of Quality & Reliability Management, 40(5), 601-619. 53. Virmani. N, Upadhya. M, Luthra. S, Singh, S, Upadhyay. A, Assessing solutions to overcome Quality 4.0 barriers: a decision-making framework. TQM Journal, 2023, 1754-2731. <https://doi.org/10.1108/TQM-06-2023-0170>. 54. Yadav, N., Shankar, R. and Singh, S.P, “Critical success factors for lean six sigma in quality 4.0”, International Journal of Quality and Service Sciences, 2021, 13, (1), pp. 123-156. 55. Yamamoto, K., Milstead, J. L., & Lloyd, J. W. Henry Ford's Insights on Waste Management: Lessons for Modern Organizations. Journal of Business Ethics, (2019), 120(2), 253-267. 56. Yurin, D, Deniskina, A, Boytsov, Karpovich, M, Quality 4.0. Time of revolutionary changes in the QMS. E3S Web of Conferences **244**, 11010 (2021), <https://doi.org/10.1051/e3sconf/202124411010> 57. Zonnenshain, A.; Kenett, R.S. Quality 4.0 - The Challenging Future of Quality Engineering. Qual. Eng. **2020**, 32, 614–626. 58. Zulqarnain, A.; Wasif, M.; Iqbal, S.A. Developing a Quality 4.0 Implementation Framework and Evaluating the Maturity Levels of Industries in Developing Countries. Sustainability 2022, 14, 11298. <https://doi.org/10.3390/su141811298> | | |
| **Reading:**  **Research Methodology** | **This is a selection books on methodology. Further reading over and above these is essential:**   1. Cooper, D.R. & Schindler, P.S. 2014. Business research methods. 12th edition. McGraw-Hill: New York. 2. Creswell, J.W. 2014. Research design: qualitative, quantitative and mixed methods approaches. 4th edition. Sage Publications: Thousand Oaks, California. 3. Hofstee, H. 2006. Constructing a Good Dissertation. EPE: Johannesburg, South Africa. 4. Howitt, D. & Cramer, D. 2014. Introduction to Research Methods in Psychology. Pearson Education Limited: Edinburgh Gate. 5. Leedy, P.D. & Ormrod, J.E. 2015. Practical research. Planning and Design. 11th edition. Pearson Education: Edinburgh Gate, Harlow, UK. 6. Salkind, N.J. 2012. Exploring research. 8th edition. Pearson Education: Upper Saddle River, NJ 7. Saunders M., Lewis P. & Thornhill A. 2016. Research methods for business students. 7th edition. Pearson Education: Edinburgh Gate, Harlow, UK. 8. Denicolo, P. & Becker, L. (2012). *Developing research proposals.* SAGE: London. 9. Hair, [J. F. Jr.](https://www.amazon.com/s/ref=dp_byline_sr_book_1?ie=UTF8&text=Joe+F.+Hair+Jr.&search-alias=books&field-author=Joe+F.+Hair+Jr.&sort=relevancerank), [Celsi](https://www.amazon.com/s/ref=dp_byline_sr_book_2?ie=UTF8&text=Mary+Celsi&search-alias=books&field-author=Mary+Celsi&sort=relevancerank), M., [Money](https://www.amazon.com/s/ref=dp_byline_sr_book_3?ie=UTF8&text=Arthur+Money&search-alias=books&field-author=Arthur+Money&sort=relevancerank), A.,  [Samouel](https://www.amazon.com/s/ref=dp_byline_sr_book_4?ie=UTF8&text=Phillip+Samouel&search-alias=books&field-author=Phillip+Samouel&sort=relevancerank), P., &   [Page](https://www.amazon.com/s/ref=dp_byline_sr_book_5?ie=UTF8&text=Michael+Page&search-alias=books&field-author=Michael+Page&sort=relevancerank)  M. (2016). *The Essentials of Business Research Methods.* 3rd Edition. Routledge: New York, New York. 10. Henning, E., Gravett, S., & Van Rensburg, W. (2005). *Finding your way in academic writing*. 2nd ed. Van Schaik: Pretoria. 11. Mouton, J. (2001). *How to succeed in your master's and doctoral studies: A South African guide and resource book*. Van Schaik: Pretoria. 12. Layder, D. (2012). *Doing excellent small-scale research*. Sage: Thousand Oaks, Ca. | | |
| **Resources: Scholar community** | Taylor & Francis, Elsevier, Emerald, Springer, Sustainability (MDPI), Pearsons,  Wileys, Routledge, Prentice Hall, Sage, Van Schaik. | | |
| **Potential M&D research focus area for M&D research projects** | | | |
| **Unit of Analysis** | | **Research Focus** | |
| **Quality Management in general** | | Manufacturing industries, Education, Healthcare, Service industries, State Owned Entities, Mining Sector, SME’s | |
| **The delineation as a fundamental of quality management to be considered.** | | Quality Management, Leadership Ethics, Industry 4.0, Quality 4.0, Integrated Quality Management Systems, Supply Chain 4.0. Logistics 4.0, Customer Relationship Management 4.0 | |