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| **Department** | Industrial and Organisational Psychology | |
| **Discipline** | Industrial Psychology | |
| **Research Focus Area** | Smart Technology, Artificial Intelligence, Robotics and Algorithms (STARA) in the context of the Fourth Industrial Revolution (4IR) | |
| **Supervision Team** | Prof R M Oosthuizen  Prof O M Ledimo  Prof H von der Ohe  Prof I L Potgieter  Prof N Ferreira  Dr A Deas  Dr Elzabé Nel  Dr L Steyn  Mrs L Tonelli  Ms A Rasivhetshele  Ms BS Mahlangu | |
| Industrial and Organisational Psychology Departmental link: [IOP Research Focus Areas](https://www.unisa.ac.za/sites/corporate/default/Colleges/Economic-and-Management-Sciences/Schools,-departments,-bureau,-centres-&-institutes/School-of-Management-Sciences/Department-of-Industrial-and-Organisational-Psychology/IOP-Research-Focus-Areas) | | |
| **Supervision Team details:** | **Academic Profile** | **Capacity** |
| **Prof R M Oosthuizen**  Office: NSR3-86  Phone: +27124298245  [oosthrm@unisa.ac.za](mailto:oosthrm@unisa.ac.za)  ORCID: <https://orcid.org/0000-0001-6856-3182> | **Academic Profile**  Rudolf M Oosthuizen received a BA degree (Cum Laude) from the University of Pretoria in 1992 and obtained a BA (Honours) in Psychology at the same university in 1993. In 1999 he received a MA degree in Industrial and Personnel Psychology from the Potchefstroom University for Christian Higher Education. The title of his dissertation was: “Coping of firefighters attached to a local authority, a fortigenic approach”. In 1999, he registered as an Industrial Psychologist with the Health Professions Council of South Africa and is also registered since 2014 as a Master HR Professional with the South African Board for People Practices (SABPP). In 2005 he completed a DLitt et Phil in Industrial and Organisational Psychology at the University of South Africa (UNISA). The title of his thesis was: “Job and family stressors amongst firefighters”.  Currently Rudolf is a Professor in the Department of Industrial and Organisational Psychology at UNISA in South Africa and an Adjunct Professor in the School of Psychology and Counselling at the University of Southern Queensland in Australia. Rudolf is the Manager for the MCom IOP programme and is responsible for the lecturing of Honours subjects and the supervision of Master and Doctoral students. Rudolf has presented conference papers at national and international conferences and published extensively in accredited scientific journals and textbooks. Rudolf’s fields of interests are (1) career psychology, career development and management from an individual, group and organisational perspective in the 21st century world of work; (2) positive psychology, with the focus on salutogenesis and well-being, sense of coherence, locus of control, self-efficacy, the hardy personality and learned resourcefulness; (3) employment relations and the improvement of the quality of employment relations in organisations and in society in general; and (4) the Fourth Industrial Revolution (Smart Technology, Artificial Intelligence, Robotics, and Algorithms). | **Capacity**  2 Master’s  1 PhD |
| **Prof O M Ledimo**  Office: NS Radipere 3-120  Email: Manetom@unisa.ac.za  ORCID: | **Academic Profile**  Full Professor, Chair of Department: Department of Industrial and Organisational Psychology. Qualifications DLitt et Phil in Industrial and Organisational Psychology. Ophillia is registered with the Health Professions Council of South Africa (HPCSA) as an Industrial Psychologist. She is also a register Social Worker with South African Council for Social Service Professions (SACSSP). In terms of research, Ophillia has published and presented various national and international journals/conferences. She supervises Master’s and Doctoral students on various research projects focussing on the following areas within the field of IOP: Organisational development, Employee wellness, Leadership, Talent management, Psychological assessment, and Workforce diversity. Ophillia manages a team of academics’ performance in tuition, research and community engagement towards the University, College, School, and Department‘s strategic goals and objectives. She also oversees all academic committees at Departmental level. Prior to joining Unisa, Ophillia worked for Van Schaik bookstores, FORD in the Human Resource Department managing the Employee Assistance Programme. Ophillia is the Director of Manetje Consulting. A consulting firm focussing on psychological assessments, counselling, organisational diagnosis, and leadership development. | 2 Master’s  1 PhD |
| **Prof H. von der Ohe**  Office: NSR 3-87  Email:  [vdoheh@unisa.ac.za](mailto:vdoheh@unisa.ac.za)  ORCID:  <https://orcid.org/0000-0002-6583-5215> | **Academic Profile**  Hartmut von der Ohe is Associate Professor in the Department of Industrial and Organisational Psychology. His teaching focus is on strategic personnel psychology and ergonomics / human factors. Hence, he is not only interested on the impact of evolving technology on the human itself but also on organisational systems such as alternative models of work and the use of mobile / virtual technology in learning and development. From a strategic perspective he is interested in the ethics and validity of algorithms used in organisations. He also supervises students working in the neurosciences if the study links to safety and / or ergonomics or personnel psychology. However, his own research focuses on organisational trust relationships in the context of the industrially developing world (Southern Africa). | 1 Master’s  1 PhD |
| **Prof I L Potgieter**  Office : NS Radipere 3-67  Email : [visseil@unisa.ac.za](mailto:visseil@unisa.ac.za)  ORCID : [0000-0002-0763-7632](http://orcid.org/0000-0002-0763-7632)  Institutional repository link  <http://orcid.org/0000-0002-0763-7632> | **Academic Profile**  Ingrid L. Potgieter(DCom) is a Professor in Human Resource Management at the Department of Human Resource Management at UNISA. She is a registered industrial psychologist at the Health Professions Council of South Africa (HPCSA) since 2009 and a registered human resource practitioner and the South African board for people practices (SABPP). Ingrid Potgieter completed her Mcom degree in Human Resource Management and Industrial Psychology in 2009 at the University of Pretoria. She completed her Dcom Industrial Psychology degree at Unisa in 2012. She is also an author and co-author of several published articles in local and international journals. She presented several papers at national and international conferences. Ingrid Potgieter is a section editor for the South African Journal of Industrial Psychology. Prof Potgieter has published widely on retention, employability and career wellbeing. She is currently busy with several research projects related to the impact of the new world of work (specifically industry 4.0 and post covid-19) on individual and organisational level. | 1 PHD  1 Master’s |
| **Prof N Ferreira**  Office : NS Radipere 3-71  Email : [ferren@unisa.ac.za](mailto:ferren@unisa.ac.za)  ORCID : 0000-0003-0436-9289 | **Academic Profile**  Nadia Ferreira is a Professor in Human Resource Management at the Department of Human Resource Management at UNISA. She is a registered human resource practitioner with the South African Board for People Practices (SABPP). Nadia Ferreira completed her MCom degree in Human Resource Management and Industrial Psychology in 2008 at the University of Pretoria. She completed her DCom Industrial Psychology degree at Unisa in 2012. She is also an author and co-author of several published articles in local and international journals. In addition, she presented several papers at national and international conferences. Nadia Ferreira is a section editor for the South African Journal of Industrial and Organisational Psychology. She is presently embarking on several research projects related to the impact of the new world of work (specifically industry 4.0 and post covid-19) on individual and organisational level. | 1PhD  1 Master’s |
| **Dr A Deas**  Office : NS Radipere 3-60  Email : [deasaj@unisa.ac.za](mailto:deasaj@unisa.ac.za)  ORCID : <https://orcid.org/0000-0002-3034-781X> | **Academic Profile**  Alda Deas is a senior lecturer in the Department of Human Resource Management. She obtained her PhD (Psychology) in 2017 at the University of South Africa with the title *“Constructing a psychological retention profile for diverse generational groups in the higher education environment”*. She has authored and co-authored several articles and chapters in accredited scientific journals and textbooks. She is registered with the South African Board of People Practices (SABPP) as human resource practitioner. Her current research projects include research relating to the impact of Industry 4.0 and the digital era on individual and organisation level, specifically focusing on the psychological contract. | 2 Master’s |
| **Dr Elzabé Nel**  Office: AJH vd Walt 3-73  Email: coetzec1@unisa.ac.za  ORCID: <http://orcid.org/0000-0001-9478-0156> | **Academic Profile**  Elzabé Nel (PhD) is a senior lecturer in the Department of Industrial and Organisational Psychology. In 2018 Dr Nel received her PhD degree from the University of South Africa. The title of her dissertation was: ‘A psychosocial model for buffering workplace bullying in higher education’. In 2010, she registered as an Industrial Psychologist with the Health Professions Council of South Africa (HPCSA). Elzabé has presented several conference papers at national conferences and published in accredited scientific journals and textbooks. Dr Nel has supervised postgraduate students and favours quantitative studies on factors affecting wellbeing. Her fields of interests are (1) employee wellbeing (e.g. flourishing or mental health); (2) workplace bullying and workplace cyberbullying; and (3) stress and/or technostress. | 1 Master’s  1 PhD co-supervised |
| **Dr L Steyn**  Office: NSR3-104  Phone: +27124293794  [steynl3@unisa.ac.za](mailto:steynl3@unisa.ac.za)  ORCID:  <http://orcid.org/0000-0003-4602-7121> | **Academic Profile**  Linda Steyn received a degree in BCom (Personnel Management) from the University of Pretoria in 1992 and completed her BCom (Honours) in Personnel Management in 1993. She received her MCom (Human Resource Management) degree (Cum Laude) in 1996. The title of her dissertation was: “The personality profile of the successful physiotherapy student as a selection tool at the University of Pretoria”. In 1998 Linda registered as an Industrial Psychologist with the Health Professions Council of South Africa (HPCSA). In 2021 she is completed her Doctor of Philosophy (PhD) in Psychology at the University of South Africa (UNISA). The title of her thesis: “The personal transformational value of coaching: Exploring the lived experience of the coachee”. Linda has a career that spanned working as a corporate professional in the financial industry, assessment industry and consulting as an independent practitioner. She is also an Integral Coach and registered with the International Coach Federation (ICF) with Professional Certified Coach (PCC) credentials. She completed her coach training with the Centre for Coaching – University of Cape Town – Graduate School of Business in 2013. Currently Linda is a Lecturer in the Department of Industrial and Organisational Psychology at UNISA in South Africa. She is responsible for lecturing of third year, Honours and Master’s modules and for the career and executive coaching module in the PhD Consulting Psychology degree. Her fields of interests are (1) coaching psychology with the focus on personal transformation; (2) positive psychology; (3) career psychology; and (4) the Fourth Industrial Revolution (Smart Technology, Artificial Intelligence, Robotics, and Algorithms). She co-supervises with various lecturers in the IOP Department. | 1 Master’s |
| **Dr L Tonelli**  Office: AJH3-108  Phone: +27124298226  [leyl@unisa.ac.za](mailto:leyl@unisa.ac.za)  ORCID:0000-0002-6092-6740 | **Academic Profile**  Louise Tonelli is a senior lecturer in the Department of Industrial and Organisational Psychology. Within the field of Industrial and Organisational Psychology she has published and presented at several conferences both nationally and internationally. She has published chapters in books specifically focusing on shame as a health resource in cultural contexts and transforming shame through practical applications in a South African context. Louise is experienced in using the systems psychodynamic approach in research. Qualitative research methods of particular interest to her are Interactive Qualitative Analysis (IQA) and Listening Posts (LP). Louise’s interest (1) 21st century of work. (2) teaching with technology (3) impact of Covid-19 on the world of work. | 1 Master’s |
| **Ms A Rasivhetshele**  Office: NSR 3-50  Phone: +2712 429 6980  Email: [rasivm@unisa.ac.za](mailto:rasivm@unisa.ac.za)  ORCID: 0000-0002-6098-4633 | **Academic Profile**  Ms Aswindine Rasivhetshele obtained Master of Commerce in Labour Relations & Human Resources in 2019 from Nelson Mandela University (NMU), BCom Honours in Human Resource Management in 2005 from University of South Africa (UNISA), and a Bachelor of Commerce Degree in Human Resources and Business Management in 2004 from Damelin Graduate College. Amongst other programmes, she attained an Advanced Short Course in Outcomes-Based Assessment in Higher Education and Open Distance Learning in 2010, and Young Academic Programme in 2017 from UNISA. She is a member of South African Board for People Practices (SABPP) as an HR practitioner and a certified assessor and moderator. To complement her career, Aswindine completed research workshops from UNISA, and Stellenbosch university and she is a research supervisor for MCom students. She has completed a 2-year course in emotional intelligence and psychological counselling in 2017.  Aswindine is a lecturer in Labour Relations Management in the Department of Human Resource Management. The early years of her career were nurtured when she was working in the small businesses sector. From there she moved to the corporate world where she worked as an HR practitioner. Her research focus is on employment relations management, labour relations, unfair labour practices, conflict management and dispute resolution mechanisms, the Fourth Industrial Revolution (Smart Technology, Artificial Intelligence, Robotics, and Algorithms), and how organisations can enhance productivity in the 4th IRR. She has presented locally and internationally in the field of personal development, and small and medium enterprises SMEs. | 1 Master’s supervisor  1 Master’s Co-supervisor |
| **Ms BS Mahlangu**  Office: NSR 3-106  Phone: +2712 429 8242  Email: [mahlabs@unisa.ac.za](mailto:mahlabs@unisa.ac.za)  ORCID: [https://orcid.org/0000-0002-2566-0828](https://eur06.safelinks.protection.outlook.com/?url=https%3A%2F%2Forcid.org%2F0000-0002-2566-0828&data=05%7C02%7COosthrm%40unisa.ac.za%7C4678984cd4f445059d3308dc3ea5f22f%7Cca9a8b8c3ea34799a43e5510398e7a3b%7C0%7C0%7C638454129673356033%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C0%7C%7C%7C&sdata=Z6NXoHnkcijDN0pIwkwbHo60sr%2BY3ddcqdi%2BK4a1Kl4%3D&reserved=0) | **Academic Profile**  Ms Busisiwe Mahlangu, lecturer in Industrial and Organisational Psychology, holds an MPhil in the field. Her academic interests mainly entail investigating the neuroscience underpinnings of organisational behaviour, the effects of the Fourth Industrial Revolution (Smart Technology, Artificial Intelligence, Robotics, and Algorithms) on organizational behaviour, and reflective practice in industrial psychology consulting as a scientist-practitioner. | 2 Master’s Co-supervisor |
| **Model of supervision** | Students will be allocated to a supervisor but will be required to work independently within the requirements of higher degree studies. Additionally students will be guided through online tutoring regarding:   1. Quantitative, qualitative and/or mixed method research methodology 2. Doing a literature review 3. How to write a research proposal 4. Ethics in research 5. APA 7th edition Referencing   As part of the qualification, students will be expected to write and present a full research proposal to a panel of academics for approval, and obtain ethics clearance from the institutional ethics committee, before continuing with the actual research project. | |
| **Application procedure** | Apply for a space in this focus area using the **formal UNISA online application procedure** outlined on <https://www.unisa.ac.za/sites/corporate/default>.  Remember you must first apply for a **student number**. | |
| **Selection criteria: Master’s/Doctorate** | Refer to the UNISA application website for general M&D qualification admission criteria. In addition to the admission criteria contained in the *my*Choice brochure, applicants are required to prepare:  **Masters students:** a research outline (max 5 pages) describing the following:   1. A proposed topic and motivation for the study 2. Research problem and objectives 3. A brief review of relevant literature 4. Research design: Motivation for a quantitative or qualitative study 5. Ethics considerations and access to the research context 6. List of references (use APA 7 edition referencing guidelines)   **Doctorate students:**a research outline (max 20 pages) describing the following:   1. A proposed topic and motivation for the study 2. Problem statement and research aims 3. A brief review of relevant literature 4. Research design: Motivation for:    1. a qualitative/ mixed-method choice of study    2. Research participants: Population and sampling strategy    3. Measuring instruments    4. Research procedure    5. Qualitative data analysis 5. Ethics and access to research context 6. Envisaged contribution of the study 7. List of references (use APA 7 edition referencing guidelines)   E To prepare your research outline as required above, **GO TO** the IO Psychology departmental website to **download a research outline guide**:     * **Masters students**: [Apply: Department of IO Psychology/Masters-degrees](https://www.unisa.ac.za/sites/corporate/default/Colleges/Economic-and-Management-Sciences/Schools,-departments,-bureau,-centres-&-institutes/School-of-Management-Sciences/Department-of-Industrial-and-Organisational-Psychology/Masters-degrees) * **Doctorate students:** [Apply: Department of IO Psychology/Doctoral-degrees](https://www.unisa.ac.za/sites/corporate/default/Colleges/Economic-and-Management-Sciences/Schools,-departments,-bureau,-centres-&-institutes/School-of-Management-Sciences/Department-of-Industrial-and-Organisational-Psychology/Doctoral-degrees)   E On the front page indicate the relevant Research Focus Area (RFA) that you are applying for. It must be clear **HOW** your proposed study aligns with the topic and methodological focus of this RFA. | |
| **Selection procedure** | In addition, minimum academic requirements, the following criteria will be applied to assess your research outline:   1. **Relevance to the Research focus area** 2. **Academic merit of the research topic**: Quality in terms of originality and impact of the topic’s reach and significance toward adults in the African/South African-located work context. Applicants must justify the research problem (in practice and in terms of existing research gaps) and the contribution of the study to advance knowledge in the field. 3. Demonstrate clarity about the **core constructs** and a fair knowledge base of the most recent research. 4. Evidence of **critical thinking**: The candidate’s skills and abilities in analysing, applying, and evaluating information. 5. **Academic writing skills:** The extent to which the research outline convey coherent and well-developed arguments that are supported with relevant evidence; the logically sequence of paragraphs; the use of appropriate diction and sentence structures, and the use of correct grammar, punctuation, spelling and syntax. 6. **Access** to the research context and research participants | |
| **Documents to support application** | 1. **Academic Record** 2. **Proposed research outline** (max 5 pages [masters] or max 20 pages [PhD]) 3. **One-page** abbreviated **CV** including:  * Academic qualification * Work experience * Contact details * Personal motivation for the study * Previous research if any | |
| **Research scope** | Futurists predict that a third of jobs that exist today could be replaced by smart technology, artificial intelligence, robotics, and algorithms (STARA). Robots will handle 52% of current work tasks by 2025, almost twice as many as in 2019. Rapid changes in machines and algorithms or computer processes could create 133 million new roles in place of 75 million that will be displaced between 2019 and 2022 (World Economic Forum, 2018). This research focus area aims to produce new knowledge that extends current perspectives on how organisations and individuals perceive technological innovations (STARA), in the context of 4IR. The research agenda focuses on addressing methodological, practice/policy and theoretical gaps regarding the continuing march of technology, automation and artificial intelligence (AI) on where people work and how people work in the Fourth Industrial Revolution (4IR). The research questions can be asked: Will people need to work at all? What is the place of people in an automated world? Researchers focus on technology and the role that automation is predicted to have on jobs and the workplace. It is believed that the real story is far more complicated. This is less about technological innovation and more about the manner in which humans decide to use that technology. The shape that the workforce of the future takes will be the result of complex, changing and competing forces. Some of these forces are certain, but the speed at which they unfold can be hard to predict. Regulations and laws, the governments that impose them, broad trends in consumer, citizen and worker sentiment will all influence the transition toward an automated workplace in the 4IR. The outcome of this battle will determine the future of work in 2030. When so many complex forces are at play, linear predictions are too simplistic. Governments, organisations, and individuals need to be prepared for a number of possible, even seemingly unlikely, outcomes. | |
| **Reading:**  **Subject Field** | **This is a selection of open access articles in this research focus area that you can access online on Google Scholar. ‎Further reading over and above these** **will be to your advantage:**  Brougham, D., & Haar, J. (2018). Smart Technology, Artificial Intelligence, Robotics, and Algorithms (STARA): Employees’ perceptions of our future workplace. *Journal of Management & Organization, 24*(2), 239–257, doi:10.1017/jmo.2016.55.  Chuang, S., & Graham, C. M. (2018). Embracing the sobering reality of technological influences on jobs, employment and human resource development: A systematic literature review. *European Journal of Training and Development, 42(*7/8), 400–416, https://doi.org/10.1108/EJTD-03-2018-0030.  Durães, D., Carneiro, D., Bajo, J., & Novais, P. (2018). Modelling a smart environment for nonintrusive analysis of attention in the workplace. *Expert Systems, 35*, 1–13, doi: 10.1111/exsy.12275.  Frey, C. B. & Osborne, M. A. (2017). The future of employment: How susceptible are jobs to computerization? *Technological Forecasting and Social Change, 114*, 254–280.  Horton, J. J. (2017). The effects of algorithmic labour market recommendations: Evidence from a field experiment. *Journal of Labour Economics, 35*(2), 345–385.  Mayer, C-H., & Oosthuizen, R.M. (2020). Sense of coherence, compassionate love and coping in international leaders transforming towards the Fourth Industrial Revolution. *International Journal of Environmental Research and Public Health, 17*, 2829; DOI:10.3390/ijerph17082829.  Mayer, C-H., & Oosthuizen, R.M. (2020). Positive transformation towards the Fourth Industrial Revolution: empirical evidence from a technology company. *International Review of Psychiatry*. DIO:10.1080/09540261.2020.1763927.  Mayer, C.H., & Oosthuizen, R.M. (2021). *Transforming shame through love in the workplace? Envisioning positive transcultural leadership in contemporary and future workplaces*. In C.H. Mayer., E. Vanderheiden., & P Wong (Eds.), The meaning of shame in cultures of the 4IR. Springer. https://doi.org/10.1007/978-3-030-59527-2\_2.  Mayer, C.-H., & Oosthuizen, R.M. (2021). Anxiety and excitement in the fourth industrial revolution: A systems- psychodynamic perspective. *SA Journal of Industrial Psychology/SA Tydskrif vir Bedryfsielkunde, 47*(0), a1813. https://doi.org/10.4102/sajip.v47i0.1813.  Mayer, C.-H., & Oosthuizen, R.M. (2022). Sustainability in Industry 4.0 Business Practice: Insights from a Multinational Technology Company. *Frontiers in Sustainability, 3*, 886986. https://doi.org/10.3389/frsus.2022.886986.  Mayer, C.-H., & Oosthuizen, R.M. (2022). Sustainability in Industry 4.0 Business Practice: Insights from a Multinational Technology Company. *Frontiers in Sustainability, 3*, 886986. https://doi.org/10.3389/frsus.2022.886986.  Mayer, C.H., & Oosthuizen, R.M. (2022). A System-Psychodynamic View on Unconscious Dynamics within an Engineering Organization Transforming towards Industry 4.0. F*rontiers in Psychology, 13*, 926245. https://doi.org/10.3389/fpsyg.2022.926245  Oosthuizen, R.M., & Mayer, C-H. (2019). At the edge of the Fourth Industrial Revolution: Employees’ perceptions of employment equity from a CIBART perspective. *SA Journal of Industrial Psychology/SA Tydskrif vir Bedryfsielkunde, 45*(0), a1695. https://doi.org/10.4102/sajip.v45i0.1695.  Oosthuizen, R.M. (2019). *Intelligence, Robotics, and Algorithms (STARA): Employees’ perceptions and well-being of future workplaces*. In I. Potgieter., N. Ferreira., & M. Coetzee (Eds.), Theory, Research and Dynamics of Career Wellbeing Becoming Fit for the future: Stream 1: Critical issues in understanding career wellbeing in the emerging digital workspaces of Industry 4.0. Springer Nature Switzerland. https://doi.org/10.1007/978-3-030-28180-9.  Oosthuizen, R.M. (2020). *Artificial Shame in the 4th Industrial Revolution*. In C.H. Mayer., E. Vanderheiden., & P Wong (Eds.), The meaning of shame in cultures of the 4IR. Springer. https://doi.org/10.1007/978-3-030-59527-2\_25.  Oosthuizen, R.M. (2020). *The Fourth Industrial Revolution. A Resilience-Based Coping Strategy for disruptive change*. In I. Potgieter., N. Ferreira., & M. Coetzee (Eds.), Coping dynamics: Emerging issues for research and practice in a smart digital technological world of work. Springer Nature Switzerland (International) https://doi.org/10.1007/978-3-030-70228-1\_2.  Oosthuizen, R.M. (2022). *The new normal - Managing virtual work from a Human Resources perspective*. In IL Potgieter & N Ferreira (Eds.), Managing Human Resources: The new normal. Springer Nature Switzerland (International). https://doi.org/10.1007/978-3-031-098031\_6.  Oosthuizen, R.M. (2022). The Fourth Industrial Revolution, Smart Technology, Artificial Intelligence, Robotics and Algorithms Industrial Psychologists in Future Workplaces. *Frontiers in Artificial Intelligence, 5*, 913168. https://doi.org/10.3389/frai.2022.913168.  Oosthuizen, R.M. (2023). *Empowerment of Women Leaders in The Fourth Industrial Revolution*. In C-H Meyer, E Vanderheiden, O Braun-Lewensohn, G Chen, K Sueda, B Mangolothi, S Safdar, and S Kim Women Empowerment for a sustainable future - transcultural and positive psychology perspectives https://doi.org/10.1007/978-3-031-25924-1\_23  Putka, D. J., & Dorsey, D. (2018). *Beyond “Moneyball”: I-O psychology and the maturation of AI/ML technology in HR*. Retrieved on 18 January 2019 from http://www.siop.org/article\_view.aspx?article=1847&utm\_source=SIOP&utm\_medium=Website&utm\_campaign=Web%20Article&utm\_content=Web%20Article  Singaram, S., Mayer, C-H., & Oosthuizen, R.M. (2023). Leading higher education into the fourth industrial revolution: an empirical investigation. *Frontiers in Psychology, 14*, 1242835.doi: 10.3389/fpsyg.2023.1242835  Stubbings, C. (2018). *Workforce of the future: The competing forces shaping 2030*. PriceWaterhouse Coopers report. Retrieved on 24 January 2019 from http://www.pwc.com/people | |
| **Reading:**  **Research Methodology** | **This is a selection of articles on relevant methodology in this research focus area that you can access online on Google Scholar. ‎Further reading over and above these is essential:**  Babbie, E., & Mouton, J. (2009). *The practice of social research*. Cape Town: Oxford University.  Creswell, J.W., & Creswell, J.D. (2017). *Research design: Qualitative, quantitative and mixed methods approaches* (5th Edition). Sage Publishing.  Laverty, S. M. (2003). Hermeneutic phenomenology and phenomenology: A comparison of historical and methodological considerations. *International journal of qualitative methods*, *2*(3), 21-35.  Petty, N. J., Thomson, O. P., & Stew, G. (2012). Ready for a paradigm shift? Part 2: Introducing qualitative research methodologies and methods. *Manual therapy*, *17*(5), 378-384.  Probert, A. (2006). Searching for an Appropriate Research Design: A Personal Journey. *Journal of Research Practice*, *2*(1).  Salkind, N.J, (2018). *Exploring research* (9th Edition). Pearson Education Limited.  Schurink, W. J. (2003). Qualitative research in management and organisational studies with reference to recent South African research. *SA Journal of Human Resource Management*, *1*(3), 2-14.  Terre Blanche, M., Durrheim, K., & Painter, D. (2006). *Research in practice: Applied methods for the social sciences* (2nd Edition). University of Cape Town Press.  Zikmund, W.G., Babin, B.J., Carr, J.C., & Griffin, M. (2013). *Business research methods* (9th Edition). Cengage Learning  Web Center for Social Research Methods visit the World Wide Web at: https://socialresearchmethods.net/ | |
| **Other Open Access Resources:** | European Journal of Training and Development: <https://www.emerald.com/insight/publication/issn/2046-9012>  International Journal of Environmental Research and Public Health:  <https://www.mdpi.com/journal/ijerph>  International Review of Psychiatry: <https://www.tandfonline.com/toc/iirp20/current>  Journal of Management & Organization: <https://www.cambridge.org/core/journals/journal-of-management-and-organization>  South African Journal of Human Resources Management: [www.sajhrm.co.za](http://www.sajhrm.co.za)  South African Journal of Industrial Psychology: [www.sajip.co.za](http://www.sajip.co.za) | |
| **Potential M&D research focus areas or research projects**  To be directed by sound literature review, a basic methodological understanding of research as well as availability of research context and participants. | | |
| **Unit of Analysis** | **Research Focus** |
| **Individual, Group & Organisation Phenomena** | Enhancing STARA awareness in South African and African organisations. | |
| Developing knowledge and insight in the 4IR | |
| STARA programs, policies, and frameworks in the context of 4IR | |
| Transformative research on perspectives on how organisations and employees perceive technological innovations (STARA) regarding careers, and well-being in future workplaces. | |
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