AOSIS

The adoption of talent retention strategies in Industry 4.0 automotive organisations: Employees' perspective

CrossMark
← click for updates

Author:
Wayne E. Macpherson[1]

Affiliation:
[1]Department of Human Resource Management, Faculty of Business and Economic Sciences, Nelson Mandela University, Gqeberha, South Africa

Corresponding author:
Wayne Macpherson, wayne.macpherson@mandela.ac.za

Orientation: As the second largest employer in South Africa (SA), the automotive industry has a vital role to play in addressing global talent retention challenges in the era of Industry 4.0.

Research purpose: The aim of this study was to identify talent retention strategies within automotive organisations in SA within the context of Industry 4.0.

Motivation for the study: The United Nations identified 17 goals it needs to address which require the automotive industry to adopt effective talent retention strategies.

Research approach/design and method: This article reports on the quantitative component of a mixed-method study conducted in the South African automotive industry where data were collected from human resource (HR) and operational employees in automotive organisations through convenience sampling.

Main findings: The talent retention strategies need to be more effective to retain Industry 4.0 talent as a 'one-size-fits-all' approach is not ideal.

Practical/managerial implications: Addressing the sustainable development goals in Industry 4.0 will require the upskilling and reskilling of current employees by means of target interventions. Ensuring the development and maintenance of a talent pool is formidable for ensuring talent sustainability in the automotive industry.

Contribution/value-add: This study is a prima facie case that focusses on talent retention strategies in the context of automotive organisations in South Africa and, specifically, HR and operational employees. Also, based on the databases searched, little research was found that focussed on Industry 4.0 talent retention strategies from the perspective of the automotive industry.

Keywords: automotive industry; Industry 4.0; Industry 4.0 talent; sustainable development goals; talent strategies.

Introduction

This study was located within the automotive industry in South Africa. The automotive industry in South Africa is not only the largest sector contributor to the gross domestic product (GDP) but has also established itself as a competitive global player, and therefore needs to take the lead in demonstrating commitment to global sustainable development (Barkhuizen & Masale, 2022). This is especially important in a developing country such as South Africa which is plagued by poverty, unemployment and inequality (Kramar, 2022) brought about by historical injustices that prevented especially black people and women from decent employment. As a standout contributor to job creation and wealth in the social and economic sphere, the automotive industry needs to actively pursue the sustainable development of South Africa's economy and prosperity in terms of the broader society. The view is also adopted in South Africa's Automotive Masterplan 2035 (SAAM) (Department Trade, Industry & Competition, 2018), as reflected in the vision of 'being a globally competitive and transformed industry that actively contributes to the sustainable development of South Africa's productive economy, creating prosperity for industry stakeholders and broader society'. The master plan endorses increased employment, as well as employee education and skill development, in collaboration with the government and social partners.

Given the rise of emerging technologies associated with Industry 4.0, the 'war' for talent is continuing as the value of talent evolves alongside technology (Stuss, 2020). As a leader in driving change, the South African automotive industry is required to carefully devise strategies to secure

and retain top talent for competitive advantage (Phillips, 2018). In general, organisations continue to struggle with the retention of employees. On this note, Gallup (2024) reports that an unprecedentedly high percentage (42%) of employees who voluntarily left their organisation in 2023 claimed that their manager or/and the organisation were in a good position to have prevented them from leaving their organisations but failed to do so. In a dynamic changing world of work, talent is key, but many talented South African employees leave the country in search of greener pastures (Keywell, 2017). For example, 43% of the South Africans who moved to Australia by 2021 had a bachelor's degree or higher, 36% were professionals and 15% were managers (The Outlier, 2024). Therefore, adopting suitable talent management strategies implies responsiveness to the greater vision of the United Nations (UN).

In 2015, the UN adopted 17 sustainable development goals (SDGs) as part of the 2030 Agenda for Sustainable Development. This agenda is a plan of action towards globally eliminating poverty, enhancing environmental health, promoting individual well-being, and promoting peace and prosperity (Brewster & Brookes, 2024; Lee & Szkudlarek, 2021). In 2024, a midpoint was reached between the conception of the SDGs and its envisaged date for realisation. There is thus pressure on nations and organisations, including those in the automotive sector, to commit with renewed resolve to these goals to make them a reality.

One way in which organisations contribute to the sustainable development goals (SDGs) is through providing sustainable employment to employees. Brewster and Brookes (2024) state that many of the United Nations' SDGs apply directly to human resources management (HRM) and this is based on the notion that, by true definition, human resources (HR) should be value-based, serve the common good through a broad range of long-term objectives and take an ethical stance in serving a broader range of stakeholders. Human resources, as pathfinders in organisations, need to elevate the role of organisations as transformative agents of communities and assume a higher-order role in addressing societal issues in alignment with the SDGs (Ghauri & Cooke, 2022). As such, it is reasoned that HR departments as the custodians of human resources within organisations have a responsibility in preventing job loss in the face of technological change and devise adequate retention strategies to protect employees and their families from poverty (SDG1), enhance their health and well-being (SDG2), provide decent work and economic growth (SDG8) and reduce inequalities (SDG10).

Having the right talent is a driver of productivity and global competitiveness within the context of Industry 4.0 (Schwab, 2018). Being part of the success story of South Africa's democracy, the South African automotive industry is expected to set trends in terms of employment, innovation, foreign direct investment and economic growth. The automotive industry is thus associated with the adoption of collaborative robots (Cobots) which require employees to adjust to an environment of human–machine interaction (Calitz et al., 2017). With increased human-robot collaboration (HRC) in an interdisciplinary, interconnected and dynamic work environment, the need for highly talented employees increases (Prifti et al., 2017). The implication of this is that currently, the jobs of many employees in automotive organisations in South Africa may be at risk if suitable talent strategies are not adopted to upskill, reskill and retain employees. South Africa has a reputation of struggling to recruit and retain talent stretching over many decades, especially in terms of black people and women, in part also because of historical segregation and inadequate education. It was reported that the country only had about 16% of the talent required for Industry 4.0 (Macpherson et al., 2023). Not being able to secure and retain talent would compromise the ability of the automotive sector to meaningfully contribute to social sustainability goals. Conducting a study within the automotive industry on talent retention within the context of Industry 4.0 could thus sensitise the industry to potential social consequences if talent strategies were not adequate to prevent job loss among employees.

Research purpose and objectives

Various studies, including Mzezewa (2019), revealed a lack of empirical studies on talent retention in the South African automotive industry. A study by Chigbu and Nekhwevha (2020) focussed on the extent of job automation in the automobile sector without addressing talent retention, while a chapter authored by Laseinde and Kanakana (2018) adapts an educational perspective and focusses on national institutions providing formal education opportunities using a global comparative approach. This study focusses specifically on talent retention strategies used within automotive organisations in South Africa. This article reports on the second phase of a larger mixed-method study conducted in the South African automotive organisation. In the first phase of the study, data mining of job advertisements, and interviews with HR and operational managers in automotive organisations, were employed to identify emerging and disappearing job categories in the automotive industry, and competencies required of employees in the context of Industry 4.0. The findings of the job advertisements confirmed the prediction that in Industry 4.0, job requirements are changing and so are the skills for such jobs. In the second phase of the study, a quantitative study was conducted to test the relevance of a hybrid skill set for employees in the automotive industry and to determine the extent to which organisations adopted appropriate talent management strategies to attract, develop and retain employees. The quantitative evidence suggests that indeed employees need to possess a hybrid skill set and with the war of talent ongoing organisations need to adopt an integrated approach to retrain talented individuals.

The primary objective of this article is to report on talent retention strategies within organisations in the automotive

industry in South Africa, and within the context of Industry 4.0. More specifically, the objective was to determine whether perceptions of HR practitioners and operational and/or production employees on talent retention practices within their organisations differed based on selected demographic and organisational factors, including organisational size, nature of the organisation, employment function, level of employment, level of automation and types of robots adopted. The results obtained from the study could give insight into the extent to which the retention of employees was seen to be a priority in automotive organisations within the context of Industry 4.0 and within the broader context of social sustainability. Based on the results, managerial implications could be identified and recommendations made.

Literature review

Talent management in context

The emergence of Industry 4.0 leads to an increase in the amount and the intensity of change in the business environment requiring organisations to possess the necessary talent to remain competitive and succeed (Schwab, 2018; Bussin, 2014). Organisational sustainability within Industry 4.0 enables organisations to meet both short- and long-term goals. Talented employees display the desired work-related attitudes and values, think critically, and are more productive and competent, giving organisations a competitive edge (Bersin et al., 2010). The three-component framework of talent management, consisting of talent attraction, talent development and talent retention, which also describes an organisation's commitment to its talent management ideology and processes (Bussin, 2014) is considered in this study. However, this study focusses mainly on talent retention, the reason being that in Industry 4.0 talent is a driving force of competitiveness but there is globally a critical concern regarding a skills shortage (Allen & Vardaman, 2021).

Key functions linked to talent retention

In Industry 4.0, organisations' ability to retain key talent is a key differentiator, which leads to talent retention receiving much attention among researchers (Amushila & Bussin, 2021). Talent retention can assist organisations with increasing productivity, saving costs, preserving organisational knowledge, reducing employee turnover and enhancing organisational culture which, in turn, increases organisational efficiency (Bersin et al., 2010; McLean-Conner, 2015). In addition, a talent retention strategy is vital in times of economic uncertainty. Therefore, investing in the development of a talent pipeline is crucial for ensuring organisational success (Tansley & Tietze, 2013). While employees are regarded as talent (Mitchell, 2023), employees with long tenure are more familiar with organisational processes and show higher levels of commitment and engagement fostering continuity and cohesion within organisations. Consequently, adopting multiple strategies to

mitigate voluntary turnover is a requirement in Industry 4.0 where the 'war' for talent is persisting. Various researchers, including Bussin (2014), identified various strategies for talent retention. For this study, the components of a talent retention strategy are perceived to include organisational culture, performance management, training and development, compensation and decent work (Tansley & Tietze, 2013), and these are discussed.

Organisational culture

Employees' perceptions of the beliefs, values, expectations and reputation of an organisation directly impact their decision to stay; therefore, creating a unique organisational culture is paramount (Warnich et al., 2015). A positive and inclusive organisational culture not only promotes inclusivity, collaboration and transparency but also ensures the alignment of organisational and employee values which leads to greater employee morale. According to Schwab (2018), high morale is a trend that will undoubtedly continue to define the modern workplace as it increases productivity, employee engagement, innovation and creativity. The emergence of Industry 4.0 poses many challenges regarding talent retention; therefore, proactive talent retention conversations are non-negotiable in an attempt to nurture employee satisfaction and loyalty (Boonbumroongsuk & Rungruang, 2022). In line with the UN's SDG agenda, the automotive industry should emphasise a culture of equity, diversity and inclusivity not only as a social responsibility but also as an investment in employees (Pedulla, 2020).

Performance management

Performance management is an indispensable component of talent management as effectively managing the performance of employees brings operational and structural benefits to organisations (Bersin et al., 2010; Seabi, 2020). Traditionally, organisations use performance management to retain employees, but in Industry 4.0, this practice has become vital as employees tend to link their personal goals to organisational objectives (Mitchell, 2023). An important consideration in contemporary performance management practices is the inclusion of values and competencies in the process of improving performance, employee engagement and ultimately, organisational competitiveness (Abane & Brenya, 2021). Performance management is not only a valuable tool for ensuring organisational objectives are met on a continuous basis but also for enhancing retention intentions. Often performance management is only linked to assessments and rewards; however, to achieve the 2035 sustainability vision of SAAM (DTIC, 2018) in alignment with the 2030 UN SDG agenda, performance management should be a priority in the automotive industry (Brewster & Brookes, 2024). Bussin (2014) stresses the importance of involving employees in performance management, which will result in a sense of accountability and, in turn, can result in higher retention rates. As such, in Industry 4.0 performance management cannot just be an afterthought.

Training and development

Training and development are two interchangeable but distinct concepts with training concerned with addressing present or future competency shortfalls while development is concerned with improving work performance (Debebe, 2023). However, both these concepts are aimed at assisting employees in obtaining required competencies through predicting, reviewing and modifying existing competency sets (Caplan, 2014). With claims of a lack of Industry 4.0 competencies globally, the automotive industry needs to prioritise training and development initiatives as it can result in positive employee work behaviours and a positive employee experience, supporting employee intentions to stay at an organisation (Grobler et al., 2012). Training and development can be a powerful tool for enhancing employee retention as it provides employees with the opportunity to upskill their competencies and improve their sense of capability, job satisfaction and engagement (Schwab, 2018). In addition, Barhate and Dirani (2022) indicate that employees are more likely to remain within organisations that are committed to their professional growth and development. In this respect, the retention of employees secures the organisation's intellectual capital. Therefore, in a highly competitive world of work, training and development initiatives should be prioritised as employees view it as an investment in their worth and a powerful incentive to remain in an organisation. In an attempt to retain talented employees, organisations need to move away from the traditional one-size-fits-all training and development to more career trajectory targeted interventions consisting of opportunities for continuous learning, mentoring and coaching initiatives, and other development resources (Al-Dalahmeh, 2020).

Compensation

Compensation encompasses the concepts of reward and recognition which is an indication of what employees receive in return for their contributions to an organisation (Grobler et al., 2012). Compensation can be both monetary and non-monetary and includes both intrinsic and extrinsic rewards (Bussin, 2014; Bersin et al., 2010). With employees seeking the best return on investment to remain in an organisation, compensation needs to be fair, equal, competitive and consistent as measured by employees as their perceived worth to an organisation (Schlechter et al., 2014). With the automotive industry competing globally for talent and compensation being adjusted to the highest bidders, reviewing total compensation packages is crucial for rewarding loyal employees for remaining within an organisation (Al-Dalahmeh, 2020).

In addition, compensation is a vital consideration when deciding whether or not to take up employment; therefore, if talented employees are not fully satisfied, they will consider better opportunities. Therefore, offering employees an attractive compensation package that meets their expectations contributes to retention. Barhate and Dirani (2022) suggests that compensation packages should include competitive salaries, health benefits, performance-based bonuses, retirement plans and other valuable perks. In doing so, the automotive industry contributes to the UN's 2030 goals of equality and social justice.

Decent work

Decent work is one of the goals of the UN's 2030 agenda, which in Industry 4.0 is an important aspect for employees. Decent work, according to Mokgojwa (2019), refers to work that is challenging, impactful and interesting, enhances the sense of accountability and allows for variation, autonomy and timely feedback. According to Mitchell (2023), all employees strive to have work that gives meaning; however, traditionally, employees in an automotive environment performed less complex and repetitive tasks that were often demotivating (Calitz et al., 2017). Talented employees regard work as decent when they have a sense of autonomy, feel that they make a difference, possess the required competencies, participate in decision-making and feel empowered to be creative. Consequently, if an organisation is unable to provide employees with decent work, it would be difficult for them to retain talent. Therefore, the automotive industry should create a decent work architecture to retain talented employees (Schwab, 2018; Shingenge & Saurombe, 2022).

Human resources management and the United Nations' 2030 agenda

Sustainable development is required globally and, as such, countries across the globe have joined up to protect the wellbeing of the current and subsequent generations by crafting the UN's 2030 agenda (Chams & García-Blandón, 2019). From a strategic perspective, automotive organisations operating within the global context need to comprehend the implications of the UN SDGs for HRM practices (Brewster & Brookes, 2024; Warnich et al., 2015). In addition, the SDGs are focussed on addressing global challenges facing South Africa as well; therefore, raising awareness and requesting compliance regarding sustainable development across economic, political, social and environmental spheres is vital (Biermann et al., 2022). Although the SDGs are set globally, they cannot be achieved without the involvement of businesses that are the main drivers of the economy, and in South Africa, also of the national mandate for transformation in line with the constitution.

By focussing on a variety of SDGs, organisations emphasise their commitment to addressing the world's most pressing challenges which, on an organisational level, is a crucial aspect of the role of HRM (Kramar, 2022). Consequently, although HR practitioners often feel powerless because of the perception that they are unable to shift the focus or the targets of their organisation, they need to be reminded of their social responsibility and their actions for the common good

(Minbaeva, 2021). According to Brewster and Brookes (2024), HRM needs to acknowledge its vital role in contributing towards societal progress in achieving the SDGs and take the lead in driving organisational efforts towards meeting these goals as well as rewarding value-adding contributions. As such, HR practitioners need to involve both managers and employees in sustainable initiatives not only to boost employee morale but also to align the workforce with organisational sustainability goals. In addition, when employees are recognised, they easily take the lead to act as ambassadors for the organisational SDG targets (Chams & García-Blandón, 2019).

Industry 4.0 and the automotive industry

The emergence of Industry 4.0 and its associated technologies is significantly reshaping the world of work creating workspaces that are more interconnected, optimising, transparent, agile and proactive (Marwala, 2018). The adoption of Industry 4.0 technologies extends existing business models to include digitally driven services with the aim of reducing operating costs while increasing the quality and efficiency of production (Laugsand, 2017). However, the pace of the evolution of Industry 4.0 has created a significant gap between the capabilities of existing employees and the talent requirements for Industry 4.0 (Schwab, 2018). In addition, South Africa is facing two vital challenges in embracing Industry 4.0, these being a lack of Industry 4.0 competencies and a competency mismatch.

It was estimated that the emergence of Industry 4.0 would globally result in the loss of 4 million skilled manual jobs of which 2.5 million would be the result of productivity improvements because of digitalisation, 2.7 million because of job transfer to competitive regions, while 2.9 million jobs would be lost because of investment in emerging technologies (Rajnai & Kocsis, 2017). As the second largest employer in South Africa, the automotive industry plays a significant role in the economy of the country in terms of changing and adopting new technologies while creating jobs. The automotive industry predominantly invests in 3D printing, artificial intelligence, the Internet of things, cloud computing and collaborative robots (Cobots) in addition to the continued use of traditional robots on the production line (Calitz et al., 2017). Consequently, there is a big shift in the competency set requirements for employees especially for employees traditionally performing labour-intensive and repetitive tasks as well as those who will be collaborating with new technologies to perform tasks (Macpherson, 2021). As such, with a present national unemployment rate of 32.9% (Le Guern, 2017), to ensure talent sustainability and avoid major job losses, the automotive industry, in collaboration with government and educational institutions, needs to prioritise developing an Industry 4.0 talent pipeline. In doing so, the industry will be able to contribute to the UN's agenda in achieving various SDGs, especially those related to decent work, well-being, social justice and prosperity.

Research methodology
Design

This was a quantitative study conducted from a positivistic research paradigm. This study was aimed at exploring employee perceptions of talent strategies used in the automotive industry in South Africa. A non-probability sampling method namely convenience sampling was used to target potential respondents (Saunders & Lewis, 2018). In compliance with the conditions for ethics clearance, voluntary participation, anonymity of responses, full disclosure and no harm to participants were considered (Cassim, 2011). A link to a self-administered online survey administered from the QuestionPro platform was distributed among potential respondents via WhatsApp, e-mail and LinkedIn. A cover letter emphasising the purpose and nature of the study, that no identifying information was requested, the issue of voluntary participation, as well as anonymity and the right to opt out from the study, accompanied the survey. The benefit of administering the survey from the QuestionPro platform was that the collected data was automatically captured on a web-based Excel spreadsheet (Hammond & Wellington, 2013).

Measuring instrument

The scales in the measuring instrument relevant to this article included a section on demographical and organisational factors, presented in Table 1, and a section that elicited responses on talent management strategies in the automotive industry. A 5-point Likert scale ranging from 'strongly disagree' (1) to 'strongly agree' (5) measured respondents' perceptions of the talent management strategies utilised in their organisation. The Talent Management Scale was based on the work of Schwab (2018), Ncube (2018), Babshet (2017), Phillips (2018), Spiesshofer (2017), Le Guern (2017) and Bersin et al. (2010) and consists of 16 items and includes six items covering talent retention strategies. Talent retention was operationalised as the organisation possessing talent required for Industry 4.0, mapping Industry 4.0-related competencies available within the organisation, encouraging employees to remain within the organisation, being able to secure talent for the future, carefully planning to have the correct talent available and using incentives to retain talented employees within the organisation. The questionnaire used in the study was structured in a manner that gave respondents insight into robotics and emerging Industry 4.0 competencies, which provided context to the questions on talent retention strategies.

Content and face validity were confirmed by selected experts in the fields of HRM and operational and/or production, as well as a statistician while an initial pilot study was conducted among six potential participants. The scale achieved an excellent Cronbach alpha score of 0.93. The 'attracting' dimension received a score of 0.79, while the 'developing and retaining talent' dimension achieved a score of 0.89 (Gravetter & Wallnau, 2009). Statistical Package for Social Sciences (SPSS) was employed for the processing and analysis of data.

Research respondents

The target population comprised employees in HRM and operational and/or production functions in automotive organisations in South Africa. The questionnaire was viewed by 526 potential respondents, and 137 completed questionnaires were received, representing a 26% response rate. Table 1 presents the demographic and organisational profile of the sample. In addition, most of the 137 respondents (91%) were from the Eastern Cape province, with 43% working for large organisations (employing more than 1000 employees) and 47% working for motor vehicle assemblers. The respondents were drawn from HRM and production and/or operations with the highest representation (60%) in production and/or operations. Of the respondents, 61% indicated that they were leaders, while 64% indicated that the operations within their organisations were automated to some extent.

Ethical considerations

In line with guidelines in the Belmont Report (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979), prior to conducting the research, ethical clearance (H19-BES-HRM-010) to conduct this study was obtained from the Faculty of Business and Economic Sciences' Research Ethics Committee at the Nelson Mandela University (reference no.: REC-042508-025). In compliance with Nelson Mandela University's ethical clearance process, participation was

voluntary, and no participants were persuaded or paid to participate. This was achieved by providing the prospective participants with an informed consent document, which they had to complete and sign before participating in the interview. The research overview, expectations from the participants as well as the handling and use of the data collected, were stated in the informed consent document. Participants were offered the opportunity to withdraw from the study at any given stage during the interview. The researcher adhered to the statements contained in the informed consent document at all stages of the study.

Results

Factor analysis

Exploratory factor analysis (EFA) assisted in identifying underlying relationships among the items that measured talent strategies to determine a factor structure (Cassim, 2011). As evident in Table 2, all six statements measuring talent retention strategies loaded onto one factor with the loadings ranging between 0.618 and 0.873. Because of the significant factor loadings (minimum significant loading = 0.474) and a 65% total variance explained, the statements used to test talent retention strategies were regarded as valid and could remain as is.

Descriptive statistics, correlations and hypothesis testing

Table 3 presents a summary of the descriptive statistics and the one-sample T-test for talent retention strategies. The mean score for talent retention strategies (3.26) slants towards 'agree' responses with a standard deviation (SD) of 0.93 suggesting consistency in the responses while the Cronbach alpha coefficient score confirmed the reliability of the items used to test talent retention strategies (0.89).

A one-sample T-test was conducted to determine if significant differences existed in the responses obtained for talent retention (Table 3). No significant statistical or practical differences were found (SD – 0.93, p – 0.088, d – n/a) while Cohen's d was below 0.20 which confirms that the responses came from a relatively homogeneous sample and the results could be reported to the broader population (Cassim, 2011).

Differences in the responses to talent retention strategies based on demographic and organisational factors were probed, with the results presented in Table 4. To interpret the level of agreement with the items in the Talent

TABLE 1: Demographic and organisational profile of respondents.

Demographic and organisational profile of respondents	n	%
Organisational size		
0–500	46	34
501–999	31	23
1000+	59	43
Total	**136**	**100**
Employment function		
Human resources management	29	21
Productions and operations	82	60
Other	26	19
Total	**137**	**100**
Extent of automation		
Almost fully/extensively automated	25	18
Automated to some extent	88	64
Not at all automated	24	18
Total	**137**	**100**
Nature of the organisation		
Motor vehicle automotive and assembly	63	47
Components supply	51	38
Other	19	14
Total	**133**	**100**
Level of employment		
Senior/middle manager	38	29
Not a manager	52	39
Supervisor/team leader	43	32
Total	**133**	**100**
Type of automation		
Industrial robots	75	58
Collaborative robots (Cobots)	30	23
None of the above	25	19
Total	**130**	**100**

TABLE 2: Exploratory factor analysis eigenvalues for talent retention (N = 137).

Factor	Eigenvalue	Total variance %	Factor 1
1	3.93	65.5	0.87
2	0.84	14.1	0.85
3	0.39	6.5	0.85
4	0.33	5.5	0.82
5	0.33	5.4	0.81
6	0.18	3.0	0.62

Note: Minimum significant loading = 0.47. Total % of variance explained = 65.5%.

TABLE 3a: Descriptive statistics and one sample T-test results for talent retention.

Talent retention	Mean	SD	Minimum	Quartile 1	Median	Quartile 3	Maximum	Cronbach alpha
Descriptive statistics for talent retention	3.26	0.93	1.00	2.67	3.33	3.83	5.00	0.89

SD, standard deviation.

TABLE 3b: Descriptive statistics and one sample T-test results for talent retention.

Talent retention	SD	t	Scheffé p	Cohen's d	Significant
One sample T-test results for talent retention	0.93	-1.72	0.09	n/a	No

SD, standard deviation.

TABLE 4: Descriptive statistics for talent retention strategies based on demographic and organisational factors.

Factor	Category	Number	%	Mean	Standard deviation
Organisational size	0–500	42	34	3.02	0.96
	501–999	28	23	3.05	0.75
	1000+	52	43	3.53	0.88
Organisation nature	Motor vehicle manufacturing and assembly	58	48	3.46	0.90
	Components supply	47	39	3.06	0.88
	Other	17	14	3.02	0.89
Employment function	Human resources management	27	22	3.62	0.78
	Productions and operations	71	58	3.14	0.86
	Other	24	20	3.12	1.08
Employment level	Senior/middle manager	33	27	3.11	0.67
	Not a manager	51	42	3.33	1.04
	Supervisor/team leader	38	31	3.24	0.89
Extent of automation	Almost fully/extensively automated	22	18	3.67	0.76
	Automated to some extent	81	66	3.21	0.86
	Not at all automated	19	16	2.89	1.09
Type of robot predominantly adopted	Industrial robots	69	57	3.29	0.81
	Collaborative robots (Cobots)	30	25	3.38	0.89
	None of the above	23	19	2.93	1.14
Result of robot introduction	Moderate/major job loss	25	20	3.50	0.85
	Minor/no job loss and minor job creation	76	62	3.01	0.88
	Moderate/major job creation	21	17	3.77	0.76
Total	-	**122**	**100**	**3.24**	**0.91**

Retention Strategies Scale, based on demographic and organisational factors, the following scoring key was used: less than 1.5 (very low), between 1.5 and 2.5 (low), between 2.5 and 3.5 (moderate), between 3.5 and 4.5 (high), and above 4.5 (very high), as per Creswell (2015).

The overall mean score for talent retention strategies is 3.24 (SD = 0.91) which is suggestive of neutrality or moderate responses. The respondents neither disagreed nor agreed that their organisations adopted appropriate talent retention strategies for Industry 4.0. Responses based on 'moderate/major job creation due to the introduction of robots' obtained the highest mean score (3.77).

Mean scores for the adoption of talent retention strategies ranged between 2.89 for organisations 'Not at all automated' and 3.77 for organisations with 'Moderate/major job creation due to the introduction of robots', reflecting neutrality and moderate responses. Agreement for the adoption of Talent Management Strategies was obtained for responses from organisations employing more than 1000 employees (3.53), from HRM employee respondents (3.62) and from organisations almost fully or extensively automated (3.67). The standard deviations for these three sub-categories ranged between 0.88 and 0.76, showing relative consistency in the responses received.

Correlation analysis

To investigate associations for responses to talent retention strategies based on demographic and organisational factors, Chi-square tests were performed (Cassim, 2011). For the Chi-square to be used effectively, no cell should have an expected frequency less than 1, and no more than 20% of the cells should have expected values less than 5. Such cases should be interpreted with caution (Saunders & Lewis, 2018). If a statistically significant association is found between variables, Cramér's V is used to determine the strength of the relationship. If Chi-square $p < 0.05$ and Cramér's V is Small, Medium or Large, then the relationship between the variables in the table is significant. The results of the Chi-square tests are reported in Table 5 and Table 6. In these tables, Q1 and Q3 are quartile 1 and quartile 3, respectively.

The results in Table 5 indicate associations between organisational size and talent retention strategies, organisational nature and talent retention strategies, and automation and talent retention strategies. Organisational size ($p = 0.026$, V = 0.20 Small), organisational nature ($p = 0.005$; V = 0.24 Medium) and the extent of automation ($p = 0.033$; V = 0.20 Small) are significantly associated with the adoption of talent retention strategies. Respondents from larger organisations (1000+ employees) reported higher

TABLE 5: Chi-square test results for talent retention strategies based on organisational size, organisational nature and extent of automation.

Talent retention	Lower < Q1		Middle Q1–Q3		Higher > Q3		Total	
	n	%	n	%	n	%	n	%
Organisational size								
0–500	18	39	20	43	8	17	46	100
501–999	7	23	20	65	4	13	31	100
1000+	11	19	28	47	20	34	59	100
Total	**36**	**26**	**68**	**50**	**32**	**24**	**136**	**100**
Organisational nature								
Motor vehicle manufacturing and assembly	13	21	26	41	24	38	63	100
Components supply	17	33	29	57	5	10	51	100
Other	6	32	11	58	2	11	19	100
Total	**36**	**27**	**66**	**50**	**31**	**23**	**133**	**100**
Extent of automation								
Almost fully/extensively automated	4	16	10	40	11	44	25	100
Automated to some extent	23	26	49	56	16	18	88	100
Not at all automated	10	42	9	38	5	21	24	100
Total	**37**	**27**	**68**	**50**	**32**	**23**	**137**	**100**

Note: Organisational size, Chi²(df = 4, n = 136) = 11.02, p = 0.026, V = 0.20 **Small**; Organisational nature, Chi²(df = 4, n = 133) = 14.76, p = 0.005; V = 0.24 **Medium**; Extent of automation, Chi²(df = 4, n = 137) = 10.52, p = 0.033, V = 0.20 **Small**.

TABLE 6: Chi-square test results for employment function, level of employment and types of robots adopted related to talent retention.

Talent retention	Lower < Q1		Middle Q1–Q3		Higher > Q3		Total	
	n	%	n	%	n	%	n	%
Employment function								
Human resources management	4	14	14	48	11	38	29	100
Productions and operations	25	30	41	50	16	20	82	100
Other	8	31	13	50	5	19	26	100
Total	**37**	**27**	**68**	**50**	**32**	**23**	**137**	**100**
Level of employment								
Senior/middle manager	11	29	23	61	4	11	38	100
Not a manager	15	29	21	40	16	31	52	100
Supervisor/team leader	11	26	22	51	10	23	43	100
Total	**37**	**28**	**66**	**50**	**30**	**23**	**133**	**100**
Types of robots adopted								
Industrial robots	19	25	39	25	17	23	75	100
Collaborative robots (Cobots)	4	13	17	57	9	30	30	100
None of the above	11	44	10	40	4	16	25	100
Total	**34**	**26**	**66**	**51**	**30**	**23**	**130**	**100**

Note: Employment function, Chi²(df = 4, n = 137) = 5.74, p = 0.220; Level of employment, Chi²(df = 4, n = 133) = 5.94, p = 0.204; Types of robots adopted, Chi²(df = 4, n = 130) = 6.92, p = 0.140.

levels of talent retention strategies as compared to respondents from smaller (< 501 employees) organisations (17%) and medium-sized (501–999 employees) organisations (13%). It is also evident that respondents from motor vehicle manufacturing and assembling organisations reported higher levels of talent retention strategies (38%) compared to respondents from components supply (10%) and other types of organisations (11%). In terms of the extent of automation, respondents from organisations that were almost fully/extensively automated reported higher levels (44%) of talent retention strategies compared to respondents from organisations that were automated to some extent (18%) or respondents from organisations that were not automated at all (21%). On the other hand, no significant associations were found in response related to talent retention strategies based on employment function, level of employment and types of robots adopted (Table 6).

Testing of hypotheses

The following hypotheses were derived from the factors tested in this study:

H1: There is a significant relationship between talent retention and organisational size in the South African automotive industry.

H2: There is a significant relationship between talent retention and the nature of an organisation in the South African automotive industry.

H3: There is a significant relationship between talent retention and employment functions in the South African automotive industry.

H4: There is a significant relationship between talent retention and employment level in the South African automotive industry.

H5: There is a significant relationship between talent retention and the level of automation in the South African automotive industry.

H6: There is a significant relationship between talent retention and the types of robots adopted in the South African automotive industry.

The descriptive analyses (Table 4) presented responses obtained from employees in HR and operational and/or

production functions based on demographic and organisational factors regarding the adoption of Industry 4.0 talent retention strategies. The correlational analysis tested associations between the responses based on demographic and organisational factors and talent retention strategies. A positive correlation was found between responses based on organisational size and talent retention strategies ($p = 0.026$, $V = 0.20$) and between responses based on the extent of automation and talent retention strategies ($p = 0.033$; $V = 0.20$). A moderately significant correlation was found between responses based on organisational nature ($p = 0.005$; $V = 0.24$) and talent retention strategies (Table 5). Hypotheses 1, 2 and 5 are therefore accepted. On the other hand, it was found that employment function, level of employment and types of robots adopted were not predictors of the adoption of talent retention strategies (Table 6). Hypotheses 3, 4 and 6 are therefore not accepted.

Discussion

The purpose of this study was to analyse the perceptions of employees in HRM and operations and/or production functions in automotive organisations in South Africa of talent retention strategies adopted within their organisation in the context of Industry 4.0, based on selected biographic and organisational factors. This research was motivated by the UN's 2030 agenda that promotes global sustainable social development through the elimination of poverty (SDG1), enhancement of health and well-being (SDG2), decent work and economic growth (SD0G8) and reduced inequalities (SDG10). Industry 4.0 poses a risk to the job security of employees in the automotive industry because of the adoption of robots or cobots, and the automation of operational processes. As such, there is a need for employees to be upskilled and reskilled in the context of Industry 4.0, with the purpose of being retained within their organisations. From the perspective of ethical responsibility to pursue the common good for a broad range of stakeholders, which includes employees, HR needs to lead from the front in terms of organisational initiatives that promote social sustainability in alignment with the UN SDGs (Biermann et al., 2022; Brewster & Brookes, 2024; Chams & García-Blandón, 2019; Minbaeva, 2021).

The emergence of Industry 4.0 and the subsequent focus on machine-man collaborative production approaches uncovered a dire lack of Industry 4.0 competencies and a competency mismatch among employees (Le Guern, 2017; Schwab, 2018; Spiesshofer, 2017). This resultant skills shortage is more pronounced in South Africa, a country that is still in the process of transformation aimed at reducing inequalities in education and employment opportunities. The study therefore aimed at determining the extent to which automotive organisations in South Africa adopted the necessary talent strategies to upskill employees and to retain them within employment in automotive organisations, based on selected demographic and organisational factors. Various authors (Calitz et al., 2017; KPMG, 2018; Phillips, 2018) called for studies on the development of Industry 4.0 skills among

employees to ensure sustainable employment, based on Schwab's (2018) assertion that in the context of Industry 4.0, the 'war' for talent was persisting.

The descriptive results obtained in the study revealed that, based on the perspectives of employees in HR and operational and/or production functions within South African automotive organisations, their organisations did not give talent retention the necessary attention it required. These respondents did not agree that their organisations were adequately planning to retain Industry 4.0 talent (Table 3). These results echo the views of Mzezewa (2019) who claimed that, in light of the 'war' for talent, South African organisations were struggling to retain Industry 4.0 talent. To address this inadequacy, it is suggested that the automotive industry critically re-evaluate the proposition they offer their employees in terms of performance management, competency mapping, development of psychological capital, fair compensation and the development of the necessary Industry 4.0 competencies among employees. Considering the UN's SDGs, it is necessary to build upon a progressive 'one-culture' organisation that reflects the common good and prosperity.

The study further reveals the adoption of talent retention strategies was associated with selected demographic and organisational factors (Table 4). Organisations employing more than 1000 employees and organisations almost fully/extensively automated attracted more positive responses that could be setting the trend with the adoption of Industry 4.0 talent retention strategies. Calitz et al. (2017) and Martin (2022) raise the importance of focussing on retaining talented employees to grant organisations a competitive advantage in an era in which technological advancement, globalisation, demographics and other changes continuously impact the workplace. Further, Bussin (2014) highlights the essential role of HR in securing the necessary talent while advocating the need to adopt Industry 4.0 technologies, while Phillips (2018) emphasises the importance of talented individuals as the drivers of Industry 4.0. Further, the results of the study suggested that employees in HR more so than employees in operations and/or production were under the impression that their organisations adopted talent retention strategies. This result could be interpreted in different ways but suggests that communication between HR and operations and/or production in terms of the development and retention of talent for Industry 4.0 could be improved.

The Chi-square test results confirmed significant statistical and practical associations between the adoption of talent retention strategies and organisational size, organisational nature and the extent of automation (Table 5). Organisations employing more than 1000 employees were indicated as giving more attention to talent retention strategies while surprisingly smaller organisations outclassed medium-sized organisations when it came to retaining talent. Motor vehicle manufacturing and assembling organisations were indicated as giving more attention to talent retention strategies as compared to components supply and other types of

organisations. Organisations that were fully/extensively automated were indicated as giving more attention to the adoption of talent retention strategies as compared to organisations that were automated to some extent and organisations that were not automated at all. These results are consistent findings in the literature that indicated that larger organisations and motor vehicle manufacturing and assembling organisations were not only the leaders in adopting new technologies but also engaged extensively in retaining talent in search of a competitive advantage (Martin, 2022; Ncube, 2018; Phillips, 2018). A link between talent retention strategies and employment function, level of employment and types of robots adopted was not confirmed Chi-square test (Table 6). This highlights that a one-size-fits-all strategy is not always possible when it comes to retaining talent in Industry 4.0 which requires collaboration to ensure sustainability in terms of Industry 4.0 talent. Table 7 presents the hypotheses postulated and whether these are confirmed or alternatively not confirmed.

Management implications

This article has managerial implications for the South African automotive industry that is adopting Industry 4.0 technologies. Because the South African automotive industry is playing an important role in the promotion of the UN 2030 agenda by addressing the SDGs, the article contributes to the body of knowledge related to Industry 4.0 talent retention in the automotive industry. Organisations in South Africa must become more cognisant of their role in creating a sustainable future for a broad range of stakeholders, which is aligned with their role as leaders in transformation in South Africa. The values endorsed by the UN 2030 agenda should guide the adoption of values in organisations, and these values should be reflected in humanising practices in organisations.

Talent retention is of utmost importance in Industry 4.0 as it provides various operational and financial benefits to organisations including increased productivity, cost savings, enhanced organisational culture and knowledge security. As strategists, management needs to strategically develop initiatives for enhancing talent retention strategies by placing

TABLE 7: Hypothesis description and decision.

Hypotheses	Confirmed/not confirmed
1: There is a significant relationship between retaining talent and organisational size in the South African automotive industry	Confirmed
2: There is a significant relationship between retaining talent and the nature of an organisation in the South African automotive industry	Confirmed
3: There is a significant relationship between retaining talent and employment functions in the South African automotive industry	Not confirmed
4: There is a significant relationship between retaining talent and employment level in the South African automotive industry	Not confirmed
5: There is a significant relationship between retaining talent and the level of automation in the South African automotive industry	Confirmed
6: There is a significant relationship between retaining talent and the types of robots adopted in the South African automotive industry	Not confirmed

much emphasis on employees so that they lay the foundation for talent development and retention. By implication, recruiting talented individuals who know what they want and where they want to go creates a more humane work environment with satisfied employees who will remain in the organisation. This will distinguish moral organisations from their competitors and create a positive organisational brand image.

An important aspect of retaining talent in Industry 4.0 is continuous growth and development; therefore, management needs to offer employees opportunities for life-long learning. Therefore, given its importance, organisations could benefit from developing and implementing tailor-made training and development initiatives. To improve the competencies of employees in line with Industry 4.0, training and development initiatives should focussed on acquiring technical and non-technical skills.

Combined with the results of this and other studies, it suggests that compensation should be linked to performance to reward desired behaviours. In line with this, promotions from inside the organisation are vital for retaining talent as it is perceived as the organisation's promise to empowering employees and is strongly related to increased innovation and creativity, organisational citizenship, commitment, and engagement and ultimately intentions to remain in organisations.

Addressing Industry 4.0 requires collaborative efforts from stakeholders including HR practitioners and line managers with the aim of identifying specific training needs and challenges related to the supply of Industry 4.0 talent. This can only be achieved by the development and implementation of an all-inclusive and well-structured talent retention strategy founded on shared talent pools, regular talent audits, securing talent and encouraging knowledgeable employees.

Conclusions

In line with the United Nations' Agenda 2030, whose goals are to improve global sustainability, the purpose of this study was to investigate the adoption of talent retention strategies. The automotive industry plays a vital role in the country's economy; therefore, employing strategies for retaining talent to create a competitive advantage is crucial. Based on the findings from the study, it can be concluded that the size and nature of the organisation and the degree of automation have an influence on an organisation's ability to retain Industry 4.0 talent. With the 'war' for talent continuing, organisations need to ensure that they adopt a distinct talent retention strategy by developing a culture of support for employees, managing their performance effectively, providing timely feedback and offering tailor-made developmental opportunities, rewards and recognition packages that are competitive and fair, and which add value to both employees and the organisation. In doing so, SDG8 (decent work and economic growth) can be effectively addressed.

Limitations and future research

As with most studies, limitations are noted. Firstly, most of the respondents in this study were from the Eastern Cape province in South Africa with less participation from other provinces. However, the automotive sector in the Eastern Cape is the second largest employer in the region, and the region is a hub of the automotive sector in South Africa. Secondly, this research was quantitative, making use of a survey with a questionnaire as a data collecting tool. A qualitative study on challenges experienced in recruiting, developing and retaining talent in the automotive sector could have provided more depth and could be undertaken in the future.

Acknowledgements

Competing interests

The author declares that he has no financial or personal relationship that may have inappropriately influenced him in writing this article.

Authors' contributions

W.E.M. was responsible for data collection, data analysis and preparing the article.

Funding information

Data availability

Data sharing does not apply to this article, as no new data were created or analysed in this study.

Disclaimer

The views and opinions expressed in this article are those of the author and are the product of professional research. This article does not necessarily reflect the official policy or position of any affiliated institution, funder, agency or that of the publisher. The author is responsible for this article's results, findings and content.

References

Abane, J.A., & Brenya, E. (2021). The relationship between organizational environment antecedents and performance management in local government: Evidence from Ghana. *Future Business Journal, 7*(1), 3. https://doi.org/10.1186/s43093-020-00049-2

Al-Dalahmeh, M.L. (2020). Talent management: A systematic review. *Oradea Journal of Business and Economics, 5*, 115–123. https://doi.org/10.47535/1991ojbe102

Allen, D.G., & Vardaman, J.M. (2021). Global talent retention: Understanding employee turnover around the world. In J.M. Vardaman (Ed.), *Global talent retention: Understanding employee turnover around the world* (pp. 1–15). Emerald Publishing Limited.

Amushila, J., & Bussin, M.H. (2021). The effect of talent management practices on employee retention at the Namibia University of Science and Technology: Administration middle-level staff. *SA Journal of Human Resource Management, 19*, 11. https://doi.org/10.4102/sajhrm.v19i0.1485

Babshet, S. (2017). *Huge demand for skills in SA car industry – MIWA*. Retrieved from https://m.wheels24.co.za/News/Industry_News/hugedemand-for-skills-in-sa-car-industry-miwa-20170828

Barhate, B., & Dirani, K.M. (2022). Career aspirations of generation Z: A systematic literature review. *European Journal of Training and Development, 46*(1/2), 139–157. https://doi.org/10.1108/EJTD-07-2020-0124

Barkhuizen, E.N., & Masale, R.L. (2022). Leadership talent mindset as a catalyst for talent management and talent retention: The case of a Botswana local government institution. *SA Journal of Human Resource Management, 20*, 1914. https://doi.org/10.4102/sajhrm.v20i0.1914

Bersin, J., Lamoureux, K., Mallon, D., Laurano, M., & Harris, S. (2010). *Bersin by Deloitte*. Retrieved from http://www.bersin.com/blog/post/2010/05/A-New-Talent-ManagementFramework.aspx

Biermann, F., Hickmann, T., Sénit, C.A., Beisheim, M., Bernstein, S., Chasek, P., Grob, L., Kim, R.E., Kotzé, L.J., Nilsson, M., Llanos, A.O., Okereke, C., Pradhan, P., Raven, R., Sun, Y., Vijge, M.J., Vuuren, D.V., & Wicke, B. (2022). Scientific evidence on the political impact of the Sustainable Development Goals. *Nature Sustainability, 5*(9), 795–800. https://doi.org/10.1038/s41893-022-00909-5

Boonbumroongsuk, B., & Rungruang, P. (2022). Employee perception of talent management practices and turnover intentions: A multiple mediator model. *Employee Relations: The International Journal, 44*(2), 461–476. https://doi.org/10.1108/ER-04-2021-0163

Brewster, C., & Brookes, M. (2024). Sustainable development goals and new approaches to HRM: Why HRM specialists will not reach the sustainable development goals and why it matters. *German Journal of Human Resource Management, 38*(2), 183–201. https://doi.org/10.1177/23970022241229037

Bussin, M. (2014). *Remuneration and Talent Management*. Knowles.

Calitz, A.P., Poisat, P., & Cullen, M. (2017). The future African workplace: The use of collaborative robots in manufacturing. *SA Journal of Human Resource Management, 15*(1). https://doi.org/10.4102/sajhrm.v15i0.901

Caplan, J. (2014). Develop and engage all your people for business success. *Strategic HR Review, 13*(2), 75–80. https://doi.org/10.1108/SHR-11-2013-0105

Cassim, L. (2011). *An overview of research design and methodology. Postgraduate Toolkit [CD]*. Renaissance Network.

Chams, N., & García-Blandón, J. (2019). On the importance of sustainable human resource management for the adoption of sustainable development goals. *Resources, Conservation and Recycling, 141*, 109–122. https://doi.org/10.1016/j.resconrec.2018.10.006

Chigbu, B. I., & Nekhwevha, F.H. (2020). *Academic-faculty environment and graduate employability: Variation of work-readiness perceptions*. Heliyon.

Creswell, J.W. (2015). *A concise introduction to mixed methods research*. Sage.

Debebe, G. (2023). Authentic talent development in sociocultural context: Interdisciplinary perspectives. *European Journal of Training and Development, 47*(3/4), 281–300. https://doi.org/10.1108/EJTD-01-2023-0012

DTIC. (2018). *Industrial policy action plan*. Retrieved from https://www.thedtic.gov.za/wp-content/uploads/publication-IPAP.pdf.

Gallup. (2024). *42% of employee turnover is preventable but often ignored*. Retrieved from https://www.gallup.com/workplace/646538/employee-turnover-preventable-often-ignored.aspx.

Ghauri, P., & Cooke, F.L. (2022) *The role of MNEs in achieving United Nations' Sustainable Development Goals.* In H. Merchant (Ed.) *Handbook of International Business* (pp. 329–344). Springer.

Gravetter, F.J., & Wallnau, L.B. (2009). *Statistics for behavioural sciences* (8th edn.). Wadsworth.

Grobler, P., Bothma, R., Brewster, C., Carey, l., Holland, P., & Warnich, S. (2012). *Contemporarily issues in Human Resource Management* (4th edn.). Oxford University Press Southern Africa.

Hammond, M., & Wellington, J. (2013). *Research methods, the key concepts*. Routledge.

Keywell, B. (2017). *The Fourth Industrial Revolution is about empowering people, not the rise of the machines.* Retrieved from http://www.weforum.org/agenda/2017/06/the-fourth-industrial-revolution-is-about-people-not-just-machines/

KPMG. (2018). *Rebuilding trust, redefining professionalism*. Retrieved from https://assets.kpmg.com/content/dam/kpmg/za/pdf/KPMG%20South%20Africa%20Annual%20Integrated%20Report%202018.pdf

Kramar, R. (2022). Sustainable human resource management: Six defining characteristics. *Asia Pacific Journal of Human Resources, 60*(1), 146–170. https://doi.org/10.1111/1744-7941.12321

Laseinde, O.T., & Kanakana, G. (2018). *Interventions to skills development in the automotive manufacturing sector of South Africa*. Retrieved from https://www.researchgate.net/publication/321388079_Interventions_to_Skills_Development_in_the_Automotive_Manufacturing_Sector_of_South_Africa.

Laugsand, E. (2017). *Industry 4.0: New technologies and potential for increased value creation.* Master's thesis. Retrieved from http://hdl.handle.net/11250/2491330

Lee, E.S., & Szkudlarek, B.A. (2021). The HRM–CSR nexus and stakeholder co-dependency: Investigating refugee employment support programs. *Academy of Management Proceedings, 31*(4), 936–955. https://doi.org/10.5465/AMBPP.2021.94

Le Guern, S. (2017). *Automotive industry key to future of South Africa's manufacturing industry*. Retrieved from www.engineeringnews.co.za/printversion/automotive-industry-key-to-future-of-south-africas-manufacturingindustry-davies-2017-04-06

Macpherson, W.E. (2021). *Emerging job categories and competencies informing talent strategies for Industry 4.0 Automotive Organisations*. PhD thesis, Nelson Mandela University.

Macpherson, W.E., Werner, A., & Mey, M.R. (2023). Talent approaches for the South African automotive industry. *SA Journal of Human Resource Management/SA Tydskrif vir Menslikehulpbronbestuur, 21*, a2224. https://doi.org/10.4102/sajhrm.v21i0.2224

Martin, L.F. (2022). *Bank manager strategies to retain skilled employees beyond 5 Years*. Doctoral dissertation, Walden University.

Marwala, A. (2018). *Auto production in South Africa and components manufacturing in Gauteng province*. Retrieved from https://www.global-labour-university.org

McLean-Conner, P. (2015). *Employee value propositions: A foundation in building a competitive workforce.* Retrieved from http://0-web.a.ebscohost.com.wam.seals.ac.za

Minbaeva, D. (2021). Disrupted HR?. *Human Resource Management Review, 31*(4), 100820. https://doi.org/10.1016/j.hrmr.2020.100820

Mitchell, B. (2023). *How does higher education manage non-faculty professional staff talent? A case study*. thesis. Doctor of Education, University of Georgia.

Mokgojwa, D.M. (2019). *The development of a talent risk management tool for academic staff in South African higher education institutions.* Unpublished Doctoral Thesis, North West University.

Mzezewa, T. (2019). *State of staff turnover and retention in municipalities South Africa.* Unpublished Research Report, LGSETA.

Ncube, S. (2018). *Workplace wellness, organisational commitment and retention in an insurance company in South Africa*. Doctoral thesis, UNISA.

Pedulla, D. (2020). *Making the cut: Hiring decisions, bias, and the consequences of non-standard, mismatched, and precarious employment*. Princeton University Press.

Phillips, R. (2018). SA will lose 5.7 million jobs if not digitally ready in 7 years. *USB News.* Retrieved from https://www.usb.ac.za/usb_news/sa-will-lose-five-million-jobs/

Prifti, L., Knigge, M., Kienegger, H., & Krcmar, H. (2017). A competency model for Industrie 4.0 employees. In *Proceedings der 13. Internationalen Tagung Wirtschaftsinformatik (WI 2017), St. Gallen* (pp. 46–60). Technical University of Munich.

Rajnai, Z., & Kocsis, I. (2017). Labor market risks of Industry 4.0, digitization, robots and AI. In *2017 IEEE 15th international symposium on intelligent systems and informatics (SISY), Subotica, 14–16 September 2017* (pp. 341–346).

Saunders, M.N., & Lewis, P. (2018). *Doing research in business and management: An essential guide to planning your project.* Pearson.

Schlechter, A., Hung, A., & Bussin, M. (2014). Understanding talent attraction: The influence of financial rewards elements on perceived job attractiveness. *SA Journal of Human Resource Management, 12*(1), 13. https://doi.org/10.4102/sajhrm.v12i1.647

Schwab, K. (2018). *The Fourth Industrial Revolution.* Retrieved from https://www.britannica.com/topic/The-Fourth-Industrial-Revolution-2119734

Seabi, M.S.F. (2020). *An analysis of the performance management system of The City of Tshwane Metropolitan Municipality*. Master's thesis, University of Pretoria.

Shingenge, S.N., & Saurombe, M.D. (2022). Leadership mindset regarding talent management practices: A case study of the City of Windhoek Council. *SA Journal of Human Resource Management, 20*, 10. https://doi.org/10.4102/sajhrm.v20i0.1730

Spiesshofer, U. (2017). *CEO of automation company ABB says we shouldn't fear automation*. Retrieved from https://techcrunch.com/2021/02/01/felicis-aydin-senkut-and-guildelines-kevinbusque-will-look-back-on-the-series-b-deal-that-brought-them-together/

Stuss, M.M. (2020). Talent management -war for talents. In *11th Business & Management Conference, Dubai* (pp. 198–212). Jagiellonian University

Tansley, C., & Tietze, S. (2013). Rites of passage through Talent Management progression stages: An identity work perspective. *International Journal of Human Resource Management, 24*(9), 1799–1815. https://doi.org/10.1080/09585192.2013.777542

The Outlier. (2024). *Migration: Where South Africans are moving to*. Retrieved from https://www.theoutlier.co.za/lifestyle/2024-04-15/87059/migration-where-south-africans-are-moving-to.

Warnich, S., Carrrell, M., Elbert, N.F., & Hatfield, R.D. (2015). *Human resource management in South Africa* (5th edn.). Cengage Learning.