WORKFORCE ATTRITION AND SUSTAINABLE RETENTION STRATEGIES IN MICRO, SMALL AND MEDIUM-SIZED ENTERPRISES: TRENDS AND INSIGHTS FROM THE LITERATURE

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Abstract
Globally, retaining competent and experienced employees has been challenging for all forms of organisations and this has far-reaching implications for both the sustainability of organisations and economic growth. Tackling this issue is an urgent matter that the United Nations (UN) reiterates in their 17 Sustainable Development Goals (SDGs), especially under SDG 8 (decent work and economic growth) and SDG 16 (peace, justice, and strong institutions). This paper therefore adopts an exploratory research design to review workforce attrition and retention strategies in the context of Micro, Small and Medium-scale Enterprises (MSMEs. The aim is to provide synthesise insights from previous studies to identify patterns, trends, and themes to generate a comprehensive understanding of factors influencing employee retention and also applicable retention strategies for MSMEs. The study reveals that workforce turnover increases operational expenses and curtails organisational sustainability, which is particularly daunting for MSME with fewer resources. The findings highlight the increased exposure and vulnerabilities of MSMEs, due to their lack of capacity to deploy real retention strategies thus resulting in disadvantaged competitive positioning in the industries where they operate. Identifying attrition trends and the costs associated with them is critical to achieving sustainable retention, concludes the researchers. The study therefore advocates for the formulation and periodic review of policies by policymakers at all levels, with a particular focus on leveraging data analytics to support MSMEs in building the capacity required to retain a talented pool of manpower and enhance their Human Resource Management practices. Implementing these recommendations will strengthen MSMEs' resilience and also improve their ability to retain skilled and experienced employees, align their practices with global developmental objectives, and ensure holistic and sustainable growth.

Key words: *Workforce Attrition, MSMEs, Retention Strategies, Technological Tools, Organisational Sustainability.*

Introduction

Workforce attrition causes significant challenges for organisations globally, but it is particularly critical for MSMEs, due to their size and the need to leverage strongly on the few skilled human capital in their employ for both survival and sustainable growth. Despite the extensive body of literature on workforce attrition from developed and developing economies, fewer studies review its potentially far-reaching implications for MSMEs' survival, longevity, and broader economic stability. The economic vitality of most developing countries is driven by the entrepreneurial and business activities of Micro, Small, and Medium-sized Enterprises (MSMEs), which make significant contributions to wealth creation and employment generation in these economies (Avordeh et al., 2024). According to the IFC Report (2017), MSMEs are responsible for providing livelihoods for rural communities and improving the well-being of families of over 60% of the population in Least Developed Countries, particularly in sub-Saharan Africa. In Nigeria, the MSME sector contributes over 45% of the country's GDP, while also employing approximately 87% of the country's working-age population, making it a critical sector for understanding workforce retention dynamics in a developing context (SMEDAN/NBS, 2021). However, despite their crucial importance to the economic landscape of most developing economies, MSMEs are often plagued by multidimensional challenges stemming from institutional gaps and inadequate support, which often limits their capabilities and competitiveness. The business environment in developing countries also creates systemic challenges such as inadequate infrastructure and weak policy frameworks thereby worsening the threats to MSMEs' performance and survival in these economies (Ndiaye et al., 2018).

Consequently, the capacity of MSMEs to retain skilled employees is extremely inhibited by their inability to offer competitive salaries, benefits, or opportunities for career growth, which is due to their various challenges and constraints (Madueke & Emerole, 2017). These obstacles make MSMEs particularly susceptible to high employee turnover rates and the attendant costs, thus affecting their long-term survival (Gelencsér, Kömüves, Hollósy-Vadász, & Szabó-Szentgróti, 2024).

Gaps in the Literature on Retention Strategies of MSMEs

Employees are pivotal to the performance and success of all organisations, hence studies on their management and retention has attracted considerable attention in the academic literature. However, there are still gaps in unravelling the fragmented outcomes from empirical studies conducted across diverse organisational and regional contexts due to the multiplicity and complexities of factors shaping employee retention. Hence, there is need for more context-specific studies aimed at understanding organisational and environmental idiosyncrasies. MSMEs are already saddled with a

myriad of resource and systemic constraints exacerbated by the dynamic business environment in developing countries, which compounds their challenges with attracting and retaining a skilled workforce (Ndiaye et al., 2018). However, conversely, MSMEs are also shaped by a bundle of unique resources embedded in their size, structure and governance, which gives them some flexibility advantage above larger enterprises (Gelencsér et al., 2024). These uniqueness enables their significant contribution to the development and stability of developing economies. It is therefore important to explore and uncover approaches that would enable MSMEs navigate the challenging terrain of worker attrition effectively.

This study thus seeks to bridge both knowledge and practice gaps in understanding employee retention strategies within the context of MSMEs by offering insights from trends within the extant literature that can potentially enhance workforce stability and organisational performance. Furthermore, the study's findings aim to offer MSMEs practical strategies grounded in global practices with focus on the changing demands of the global workforce, to enable them cultivate long-term employee loyalty and achieve sustainable growth.

A Brief Review of Employee Retention Costs from across the Globe

Retention of employees has emerged as a significant challenge for organisations globally. Deloitte's *Global Human Capital Trends 2015* report that 87% of business leaders identified employee retention as an important challenge, with 50% deeming to be a very important challenge to their organisations (DUP, 2015). Similarly, PricewaterhouseCoopers' 2016 annual survey revealed that 76% of global CEOs suggest that the most important societal outcome for nations and by extension their organisations is the availability of skilled, educated, and adaptable workforce (PwC, 2016). A survey of selected countries across the globe on turnover rates, carried out by Bebnowski, Bojski, Kiljanczyk and Zhao (2018) revealed that there are geographical differences in employee turnover rates. The highest turnover (19%) was in Russia and lowest in Japan 7%; India 18% and Singapore 17% were identified as having the most rapid employee mobility, while Belgium and Japan with 9% and 7% respectively were reported as counties having the most stable workforce.

U.S. Bureau of Labor Statistics (BLS) showed increasing labour turnover between 2001 and 2016 (Erickson, 2016). BLS revealed that direct costs of replacing an employee who left voluntarily include expenses of sourcing and recruiting a new hire, known as 'cost per hire', as well as costs of their first-year training and orientation. The average cost to hire a new employee was estimated at $3,976, with variations depending on organisation size: $3,139 per hire in larger companies and $5,380 in smaller ones. In

United States, average hiring time in 2014 was 52 days, with costs per hire ranging from $3,139 in large companies to $5,380 in smaller ones, leading to a potential annual cost of $427.7 million for organisations. Similarly, in one European report by ADP Consulting Group, the analyzed data covering years 2016, 2017, and 2018 revealed that Poland recorded highest turnover with 16% turnover rate, closely followed by UK and Switzerland both had 15%. Ireland, has also been battling with costs associated with retention of talented workers (Liang, 2013, & Tiwari, 2015).

In developing African economies, employee retention challenges are often compounded by systemic socio-economic factors and unstable political environments. For example, worsening employee retention situations have affected Egypt. Egypt's statistics agency put inflation rate at 33.1% by February 2017, making it the highest rate since 2003. Labour turnover in Egypt has officially been around 12% to 13% from 2014-2017. Over half of Egypt's population is under thirty years old. For individuals under thirty, labor turnover rate was 30%, and for young women, it was 49.8. Uganda has also faced job retention challenges, leading to a continuous increase in inflation rates, rising from 5% in 2013 to 5.5% in 2014, 5.7% in 2015, and 6.5% in 2016. Similarly, Libya has struggled with retaining skilled workers, resulting in worsening inflation rates: from 2.6% in 2013 to 4.8% in 2014, 8% in 2015, and 9.2% in 2016.

In Nigeria, by way of accumulative figures, National Bureau of Statistics (NBS) reported the number of Nigerians leaving their jobs increased from 8.036 million in the fourth quarter of 2015 to 15.998 million in the third quarter of 2017. National Bureau of Statistics in its report for 2016 revealed that over 3.67 million Nigerians quit their jobs in one year. The current trend needs to be addressed, and doing so requires strategic approaches that is inherent in digital awareness of facts and figures employee retention. Although many organisations are increasingly becoming more technology-driven, appropriate and flexible employee-focused policies are necessary to manage this technology (Anand, 2015; Sheikh, 2017).

MSMEs may also be often perceived as stepping stones to larger organisations, thus resulting in them being saddled with a continuous cycle of recruitment and turnover, which would further drain their limited resources and aggravate their already fragile stability. Global changes in workforce motivation, such as faster promotions and enhanced career opportunities, have become essential strategies for retaining employees. However, many smaller organisations still risk losing top talents due to inadequate adaptation to these shifts (Sheikh, 2017). Moreover, larger organisations may often have the resources to develop comprehensive strategies to counteract high turnover, but MSMEs lack the structural and financial capacity to implement similar measures thus making them more vulnerable to the adverse costs of worker attrition (Oyinloye & Campbell, 2024).

High employee turnover impact on organisations extends beyond direct financial costs; they often disrupt organisational workflows and lead to loss of institutional knowledge which could ultimately affect customer satisfaction negatively and organisational performance (Khan et al., 2023). The costs associated with employee turnover are significant. Direct costs include recruitment expenses, training, and orientation, while indirect costs include loss of organisational knowledge, reduced productivity, and lowered employee morale. Although many organisations have adopted technology-driven solutions, the absence of formal structures, financial resources, and employee-focused policies in MSMEs further exacerbates retention problems in them (Anand, 2015; Kulkarni, 2018).

Employee Retention Challenges in MSMEs

While employee retention is a complex challenge for all organisations, MSMEs face additional hurdles compared to larger firms. Empirical studies have shown that, over the past three decades, small businesses have consistently offered lower salaries or wages than large corporations (Oi & Idson, 1999). The 1971 Bolton Report revealed a 20% earnings disparity between large enterprises and MSMEs (Forth et al., 2006). Despite offering a flexible and adaptable work environment, which may include non-financial incentives fostering employee commitment, MSMEs are generally perceived as offering limited growth potential and less stability (Davidson et al., 2021). These challenges are often compounded by internal constraints such as weaker structures and limited risk-taking capabilities. Furthermore, the dynamism and economic volatility of most developing countries also places MSMEs at a disadvantage. Lastly, the existing literature from various geographical contexts, particularly in emerging and developing economies, highlights theoretical gaps in understanding the dynamic and evolving nature of retention strategies within the MSME context.

Therefore, the key questions guiding this review are as follows:

a. What are the contextual factors shaping the relationship between organisational sustainability and employee retention strategies in MSMEs vs large enterprises?

b. Are non-financial incentives becoming more valuable to the modern workforce?

c. How can organisations balance financial and non-financial incentives to optimise retention?

d. What role does technological tools play in enhancing the human resource management capabilities of organisations?

Organisational Sustainability and Employee Retention Strategies in MSMEs

Organisational sustainability plays a pivotal role in ensuring the long-term survival and competitiveness of businesses, especially those operating in dynamic and resource-limited environments. It involves striking a balance between economic goals, and social and environmental responsibilities, to create a framework that promotes resilience, innovation, and adaptability (Elkington, 1997). A key component of achieving organisational sustainability is employee retention, as skilled and motivated employees are essential drivers of productivity and innovation. Retaining employees helps organisations preserve institutional knowledge, minimise recruitment expenses, and enhance operational efficiency, these are factors that are vital for sustaining growth and competitiveness (Epstein & Buhovac, 2014). Employee retention is even more critical for sustainability in MSMEs, whose resources are often limited. High attrition rates disrupt continuity, drains organisational knowledge, and hinders the development of a cohesive and engaged workforce. Therefore, it is imperative for organisations to develop sustainable retention strategies that fosters supportive work culture, offer employees opportunities for professional development, and encourages the alignment of organisational values with employees' aspirations. Ultimately, employee retention and organisational sustainability are interdependent; prioritising one enhances the other, thus creating a virtuous cycle for future survival and success of firms.

Abdoulaye (2017) and Khan (2020) defined employee retention as the strategic use of human resource management practices to foster the long-term commitment of employees to organisations. Bebnowski et al., (2018) and Lin and Wang (2022) however, emphasised the importance of managerial awareness of the risks embedded in high employee turnover to organisations and their proactive counter-actions to prevent worker attrition in their definition of employee retention. While these definitions are widely accepted in existing literature, their practical application often differs significantly between MSMEs and larger organisations due to differences in resources and operational structures.

MSMEs versus Larger Organisations: Employee Retention Strategies

Although MSMEs frequently rely on non-monetary approaches toward employee retention, larger organisations generally use their extensive resources to implement more comprehensive retention strategies. These strategies often include competitive salaries, comprehensive employee benefits, and advanced predictive tools for analysing turnover trends (Khan 2020). However, MSMEs can effectively adapt and tailor some of these strategies to fit their size and available resources. For example, mentorship programmes in MSMEs can offer employees valuable career development opportunities similar to those provided by larger organisations, even if delivered on a smaller scale (Appelbaum & Kamal, 2000).

Colic et al., (2022) and Visvizi (2022) also advocated for organisations, especially MSMEs to adopt a more holistic approach to employee retention by combining both financial and non-financial incentives. In MSMEs, this may involve offering modest but meaningful benefits to their workforce to complement their inherently flexible and dynamic work environments. More importantly, a sustainable employee retention strategic pathway for MSMEs entails them implementing processes that ensure the early identification of turnover triggers and also implementing preemptive measures to address them. Profit-sharing schemes and micro-loans are employee-sponsored financial solutions commonly used in large corporations to retain low-wage workers (Baker & Kumar, 2018; Wallace 2023). However, these strategies can be adapted by MSMEs on a smaller scale to promote employee commitment and loyalty.

Non-Financial Retention Strategies

Non-financial incentives play a significant role in helping MSMEs retain talented employees, especially when operating on limited budgets (Orujaliyev, 2024). Offering career development opportunities such as training sessions or skill enhancement programmes, enables employees to visualise a future of career growth and progression within the organisation. For instance, intentional practices like employee appreciation programmes, recognising employee contributions, small awards, or symbolic acts of gratitude, can create a profound sense of worth and belongingness among employees (Tilley & Young, 2009). This is particularly important for MSMEs because a single resignation from smaller businesses can have a disproportionate impact on their operations and the morale of their employees (Zainal et al., 2022). Additionally, providing flexible work arrangements, such as remote working options or accommodating personal commitments, supports employees in achieving a healthier work-life balance. These thoughtful measures not only demonstrate concern for employees' well-being but also strengthen their loyalty to the organisation (Chang 2024).

Organisational Culture and Employee Retention

Organisational culture is considered to be a key determinant of retention success in organisations (Shah & Sarkar, 2017). Research has shown that a supportive organisational culture can be instrumental towards preventing employee disengagement (Allam, 2017; Igbinoba et al., 2022). This argument was corroborated by other empirical findings suggesting that when MSMEs adopt proactive strategies to address the root causes of worker attrition, it would mitigate the risks most often associated with high turnover rates in organisations (Aathira & Nimi, 2023). MSMEs, given their smaller size, can therefore, cultivate a familial and cohesive workplace environment

where employees can feel valued and indispensable. Succinctly, encouraging organisational values that prioritises employees' emotional well-being may not only enhance job satisfaction but also strengthen emotional ties between employees and the organisation. More so, research suggests that employees in MSMEs are less likely to seek alternative employment when they perceive a high level of recognition, respect, and meaningful engagement with their employers (Siraj & Hágen, 2023). Furthermore, MSMEs can leverage their smaller size to create a sense of belongingness and purpose for their employees. This personalised approach could help MSMEs overcome some of the limitations they face from their resource constraints and thus maintain a dedicated and loyal workforce.

Leveraging Technological Tools to Mitigate Workforce Attrition

Retention strategies should reflect the changing expectations of employees as well as the internal changes that could occur within organisations. Advanced technological tools such as machine learning (ML) and artificial intelligence (AI) have the potential to address the complexities surrounding employee retention. For instance, combining the use of digital tools with flexible work policies have been shown to boost employee engagement and loyalty (Arqawi et al., 2022). Specifically, research suggests that ML models have the potential to reveal the patterns of employee turnover in an organisation, thus helping organisations to understand and predict attrition trends better (Arqawi et al., 2022). There are also arguments supporting that ML techniques can be used to analyse workforce data and develop predictive models for retention strategies for employees at risk of leaving the organisation (Bhatta et al., 2022). Joseph et al. (2021) contributed to this perspective by demonstrating that, in addition to attrition, ML can explain other related phenomena like workplace depression, an adverse well-being outcome deemed to be responsible for high incidence of voluntary employee turnover in organisations. While these technologies have been studied widely in larger organisations, their adaptation to MSMEs remains underexplored.

Other studies also suggest that various machine learning tools can improve the prediction of employee attrition rate, with specific findings suggesting that ML models such as decision trees and logistic regression can increase the predictability of employee attrition with a high level of reliability (Mohbey, 2020; Mansor et al., 2021). They can detect trends that reveal potential hotspots for worker attrition within organisations. ML tools also has the capacity to monitor exit rates and identify patterns of disengagements which could help organisations make informed decisions about employee retention (Srivastava & Eachempati, 2021). However, these tasks could be particularly challenging for MSMEs due to their limited resources.

Pratt et al. (2021) identify ‘random forest algorithm’ as one of the most reliable

analytical models for estimating employee attrition. Machine learning algorithms has the capacity to analyse important variables such as attendance records, key performance metrics, and job satisfaction surveys, to help organisations identify high-risk employees (Pratt et al., 2021).

While technologically driven tools offer valuable insights for organisations of all sizes and structures, they are potentially valuable for MSMEs, by helping them allocate resources more efficiently and to also design interventions targeting employees who are most likely to exit the organisation. However, the limited financial and technical capacities of MSMEs remain a significant barrier to the adoption of these advanced predictive tools. As a result, many MSMEs are forced to rely on traditional, less effective methods, which further widens the competitive gap between them and larger organisations that have the resources to harness advanced analytics for strategic planning and operational optimisation.

Workforce Analytics in Attrition Mitigation and Retention Strategies

Workforce analytics is also an important tool for understanding and managing employee attrition (Adeusi, Amajuoyi, & Benjami, 2024). Organisations can identify critical attrition trends from analysing their employees' data, which could be used to develop retention strategies suited to the peculiarities of their organisation. Specifically, predictive models, like regression analysis and decision trees, provide valuable insights to organisations by helping them identify potential turnover risks and proactively implement proactive measures to prevent the occurrence of attrition within their enterprises (Mansor et al. 2021). Workforce analytics also provide actionable insights into areas such as employee engagement, performance trends, and job satisfaction, thus enabling organisations to be more strategic with aligning their employee retention efforts.

For MSMEs, the challenges they most often encountered, such as limited financial resources, structural lapses, and lack of technical expertise, may prevent them from accessing and implementing these sophisticated workforce analytics (Orujaliyev, 2024). However, there are more accessible and simpler solutions such as open-source analytics platforms and models, which offer affordable options for smaller-scale data analysis that MSMEs can leverage to overcome some of these barriers. Furthermore, MSMEs can also form collaborative partnerships with external consultants and academic institutions to help them address some of these technical gaps and promote sustainable retention outcomes within their businesses.

Methodology

This study adopted 'the essay approach' to ensure a structured and coherent analysis of the literature on worker attrition and retention strategies. The data presented were drawn primarily from secondary sources which consist of mostly academic articles and texts. These articles were carefully selected based on their relevance, impact factor, and credibility, to authenticate the reliability of the information used and also ensure that it is reflective of both the theoretical and practical dimensions of the focus of this study. Specifically, particular attention was given to pieces of literature addressing employee retention strategies and workforce analytics in diverse organisational contexts, most especially Micro, Small, and Medium-sized Enterprises (MSMEs).

Deductive methodology, which projects reasoning from established theories and general principles to specific findings was employed in this study. This approach was particularly well-suited to this work, as it allowed for the systematic examination of existing knowledge while also identifying the gaps that this research aims to address. Secondary data providing insights on advanced, emerging, and developing economies were identified and employed to develop a holistic understanding of challenges and opportunities within different organisational contexts, most especially MSMEs.

The information and data which were carefully extracted from the literature were organised and subsequently analysed using a thematic analysis approach. Key themes such as 'employee retention costs; retention strategies enhancing organisational sustainability such as organisational structure and non-financial incentives; the role of technological tools in workforce analytics and retention; and barriers MSMEs face in adopting innovative solutions', were identified and discussed.

Overall, this approach ensures that through a deductive framework and thematic analysis of the selected literature, the study will contribute meaningfully towards a better understanding of employee retention strategies and workforce analytics. It therefore underscores both practical and theoretical significance, especially in addressing the unique challenges and opportunities experienced by MSMEs.

Findings

This study identified critical insights into workforce attrition and its implications for MSMEs. Firstly, employee retention was found to be a continuous challenge for organisations; with high attrition rate directly associated with increased operational expenses and financial uncertainty. Next, the operational efficiency of organisations is negatively impacted by their inability to retain a skilled workforce; their resources are also depleted due to repeated recruitment and training processes. Additionally, this study's findings highlight that data analysis serves as an essential tool for informed

decision-making by owner-managers of MSMEs and Human Resource professionals in larger organisations, particularly to identify and address employee turnover.

Machine Learning and Random Forest Algorithms were some of the data-driven models identified in this study as pivotal to enhancing the capacity of organisations to predict and address workforce challenges. These tools enable the analysis of turnover trends, employee disengagement, and also indicators of workplace stress and mental health issues, thus providing managers with practical insights to these phenomena. Despite their resource constraints, MSMEs can benefit significantly from adopting and implementing open-source data analytics solutions, which supports strategic planning for employee retention. Furthermore, the findings of this study emphasise that MSMEs can leverage their smaller size and interpersonal cohesion to develop dominant cultures that foster intangibles resources such as trust, loyalty, mutual respect, and commitment among and from their employees. MSMEs can also use non-financial incentives such as 'work-life balance, compressed workweeks, recognitions and appreciations, participatory management, flexibility, flat-structures' to balance their resource constraints towards providing competitive financial incentives.

Discussion

The findings of this study align closely with the current literature on workforce attrition and retention strategies, particularly within MSMEs. Firstly, the study identifies with Oyinloye and Campbell (2024) argument that employee attrition poses a risk to cash flow, particularly for smaller businesses. Chang (2024) argues that there are intangible benefits embedded in the interpersonal cohesiveness of smaller organisations and leveraging these resources can improve employee retention in them. Thereafter, focusing on how technology tools can be leveraged to reduce workforce attrition, several studies argue that deep learning models can provide detailed insights into employee behaviour and factors that can potentially influence turnover (Arqawi et al., 2022). Bhatta et al. (2022) confirm that machine learning techniques can forecast turnover rates, thus enabling organisations to proactively address retention issues. This is particularly important for MSMEs, where resource limitations necessitate cost-effective, data-driven solutions.

Joseph et al. (2021) elaborated further on the use of machine learning, highlighting that its value is not only limited to attrition analysis but also in identifying workplace stressors such as employee depression, which often correlates with turnover rates. This finding underscores the broader significance of workforce analytics in promoting employee well-being. Mansor et al. (2021) and Mohbey (2020) contributed to this discussion by demonstrating the predictive capabilities of machine learning models,

such as random forest algorithms, in accurately estimating attrition risks. These tools offer a scalable approach for MSMEs to address workforce challenges, enabling them to remain competitive despite their resource constraints.

By adopting open-source workforce analytics tools in combination with more traditional approaches, such as non-financial incentives and the intangible resources embedded in interpersonal cohesiveness, MSMEs can mitigate these risks and make well-informed decisions to enhance employee retention in their businesses.

This study thus contributes to the growing body of evidence that effective use of data analytics, can transform employee retention practices, offering MSMEs in particular, a pathway to sustainable growth and resilience in competitive markets.

Conclusion and Recommendations

This study highlights the vital role of analysing workforce attrition data and adopting sustainable retention strategies, particularly for MSMEs, which face distinct challenges due to limited resources. The findings emphasise that understanding employee retention trends and metrics is crucial for organisational success. Such insights enable managers to make informed decisions about the costs, risks, and opportunities associated with employee turnover.

The research concludes that MSMEs can systematical adopt more data-driven approaches to complement traditional workforce management practices. By utilising digital tools and analytics, managers can effectively monitor attrition rates, assess the financial impact of turnover, and develop retention policies targeted directly at employees at risk of leaving the organisation. Flexible and evidence-based strategies, such as personalised employee engagement programmes and predictive analytics models, can play an important role in preventing the loss of valuable organisational knowledge and expertise.

The following recommendations are also made for practice in this study:

a. MSMEs should consider using affordable data analysis platforms, such as open-source or cloud-based solutions, to track employee attrition trends and develop proactive strategies.

b. Organisations need to create retention policies which aligns with their broader organisational objectives to cater for the specific needs and aspirations of their employees. For example, flexible work schedules and opportunities can be offered for the professional development of employees to help cultivate their loyalty.

c. Growth-oriented MSMEs should priortising acquiring predictive tools, like machine learning algorithms, to identify employees who may be at risk of leaving and thus proactively reduce the likelihood of attrition.

d. Owner-Managers of MSMEs should prioritise creating an inclusive workplace culture that values employee well-being, satisfaction, and career growth. Regular feedback mechanisms and employee engagement surveys can provide valuable insights for continuous improvement.

By integrating these practices, MSMEs can improve their ability to retain talented employees, and ultimately strengthen their competitive edge in an increasingly challenging business environment.

Contribution to Knowledge

This paper makes a significant contribution to the growing discourse on workforce attrition and retention, particularly within the context of MSMEs. First, it highlights the unique challenges faced by MSMEs in retaining a talented workforce due to limited resources and infrastructural constraints. By synthesising insights from existing literature, this study offers a comprehensive understanding of how data analytics can be harnessed to address these challenges.

Specifically, the paper identifies key variables, such as attrition rates, replacement costs, and employee engagement factors, that managers must monitor to make informed decisions. It also delineates the utility of analytical models such as machine learning and random forest algorithms in predicting turnover risks and understanding workforce dynamics. These insights are invaluable for MSMEs, as they provide them with a suitable roadmap to adopt scalable and resource-efficient analytic solutions that could be tailored to meet the peculiar needs of their organisations.

Moreover, this paper serves as a foundational resource for researchers and practitioners alike. It bridges gaps in the existing literature by contextualising workforce analytics within the MSME sector, an area which is often overlooked in the extant literature on workforce management. It also highlights the practical implications for integrating predictive analytics into human resource strategies, offering actionable insights that can drive organisational resilience.

Finally, this paper creates awareness among business managers and policymakers about the critical role of data analytics in sustainable workforce retention. It equips them with the knowledge to design retention policies that balance traditional management practices with technological tools that ultimately contribute to a more robust and

innovative MSME sector.

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