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AI Driven Talent Management and the Performance of Agri Based Enterprises in Central Region Cameroon

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Abstract

Purpose: This study examines the relationship between artificial intelligence (AI) driven talent management practices and the performance of agri based enterprises in the Central Region of Cameroon, focusing on the mediating roles of workforce productivity and employee resilience.

Research Methodology: A quantitative cross sectional survey design was employed, targeting 250 managers and human resource professionals. Data were collected with a structured questionnaire and analyzed with SPSS and AMOS through descriptive statistics, Pearson correlation, and mediation analysis with 5.000 bootstrap resamples.

Results: AI driven talent management was positively and significantly related to enterprise performance (r=0.523, p<0.01). Workforce productivity (β=0.18) and employee resilience (β=0.14) significantly mediated this relationship. Both the total indirect effect (β=0.32, p<0.01) and the direct effect (β=0.29, p<0.01) were significant, indicating partial mediation, with about 52 percent of the total effect transmitted through the two mediators.

Conclusions: AI driven talent management enhances the performance of agri based enterprises both directly and indirectly through improved workforce productivity and stronger employee resilience. Enterprises should integrate AI strategically into talent management and support employees through change management.

Limitations: The cross sectional design, self reported data, purposive sampling, and focus on a single region limit causal inference and generalizability.

Contributions: The study provides empirical evidence from an underresearched African agricultural context and clarifies the mechanisms through which AI driven talent management translates into enterprise performance.

Keywords: *Agri Based Enterprises, Artificial Intelligence, Employee Resilience, Enterprise Performance, Talent Management*

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1. Introduction

The global agricultural sector is undergoing a profound digital transformation, with artificial intelligence (AI) emerging as a pivotal force that is reshaping production processes, resource management, and workforce dynamics (Ryan, 2023). Contemporary agri based enterprises face persistent challenges, including shortages of skilled personnel, inefficient resource allocation, and the

need to adapt rapidly to volatile market and climatic conditions. The integration of AI into talent management functions, including recruitment, skills mapping, performance analytics, and workforce planning, presents a strategic opportunity to address longstanding human resource challenges in the agricultural sector (Budhwar, Malik, & Thevisuthan, 2022).

The Central Region of Cameroon provides a particularly relevant context for examining these dynamics. It records the highest agricultural production in the country, approximately 4.334.095 tons, and is therefore more representative of agricultural products than other regions (Pekarou, Njomo, Tchinda, Seutche, Babikir, & Chara, 2024). The Ntui subdivision illustrates the agricultural significance of the area, as 76.7 percent of the population engages in cocoa cultivation, while corn, cassava, and yams account for 3.3 percent, 16.7 percent, and 3.3 percent of agricultural activities respectively (Pekarou et al., 2024).

Human resource management plays a pivotal role in the adoption of new technologies, because knowledge management, change management, and labor allocation determine whether technological potential becomes organizational value (Bondarouk, & Brewster, 2016; Strohmeier, 2020; Qorri, Felföldi, & Kovács, 2024). Human capital development is equally important for agricultural output in Cameroon, as education, health, agricultural labor, and land use account for 78 percent of the variation in agricultural production (Henrietta, 2024). Talent management practices in agri based enterprises nevertheless often remain underdeveloped, and the attraction and retention of skilled personnel are frequently identified as weaknesses. This gap between technological potential and current practice underscores the need for empirical investigation into how AI driven talent management can enhance enterprise performance within the Cameroonian agricultural context.

The adoption of AI in agricultural talent management is not without challenges. Constraints include poor alignment between technologies and existing data infrastructure, incomplete institutional support, and limited digital skills among rural workers (Jin, Chen, & Tan, 2026). In Cameroonian agribusiness, a persistent digital divide shapes how far technology adoption translates into economic growth (Ako, 2026e). Employees may also experience professional identity threat and technological uncertainty when AI systems are introduced, which can undermine crisis management capabilities and performance (Liu & Long, 2026).

The emergence of agricultural technology companies in Cameroon, including platforms that provide agricultural diagnostics and mobile applications that use machine learning for crop disease diagnosis, reflects the growing potential for AI integration in the sector. Recent research in the South West Region of Cameroon showed that AI driven matching platforms significantly enhance both labor allocation efficiency and agribusiness productivity. In a study of 207 agribusiness enterprises, platform adopters achieved substantially higher labor allocation efficiency scores (M=4.11) than nonadopters (M=2.75), and platform adoption explained 23.8 percent and 31.2 percent of the variance in labor allocation efficiency and agribusiness productivity respectively (Ako, 2026a). These findings provide a strong rationale for examining AI driven talent management in the Central Region.

This study therefore pursues two objectives. The first is to examine the relationship between AI driven talent management and the performance of agri based enterprises in the Central Region of Cameroon. The second is to examine whether workforce productivity and employee resilience mediate this relationship. The study contributes to the literature by providing empirical evidence from an African agricultural context in which AI adoption in human resource management remains underresearched, and by clarifying the mechanisms through which AI driven talent management translates into enterprise performance.

2. Literature Review and Hypothesis/es Development

2.1 AI Driven Talent Management

AI driven talent management refers to the strategic application of artificial intelligence technologies to optimize the acquisition, development, retention, and deployment of human capital within

organizations. It represents a shift from traditional, intuition based human resource practices to data driven and predictive approaches that use machine learning, natural language processing, and advanced analytics (Vrontis et al., 2022, Prikshat et al., 2023). Contemporary AI driven talent management includes intelligent candidate sourcing, predictive talent mapping, and real time analytics that support continuous performance monitoring and forecasting (Black & van Esch, 2020, Margherita, 2022). Reviews of AI in human resource management show that these applications influence outcomes at individual, team, and organizational levels, and that their effects depend on configurations of technology, people, and context (Alsaif & Aksoy, 2023, Basu et al., 2023).

Scholars describe the growing role of algorithms in human resource decisions as algorithmic human resource management (Meijerink et al., 2021) and emphasize that organizations need an AI capability that combines data, technology, and human skills to create value (Chowdhury et al., 2023). Strategic frameworks suggest that AI assisted human resource management can deliver both cost effectiveness and individualized employee experiences (Malik et al., 2022, Malik et al., 2023). In emerging economies of the Global South, AI applications in human resource management are developing rapidly but unevenly, shaped by infrastructure and institutional conditions (Kshetri, 2021). Studies of micro, small, and medium enterprises in the digital economy similarly show that innovation in recruitment and retention and the use of HR analytics and AI significantly affect workforce productivity and performance (Alexandro, 2025). In agriculture specifically, digital human resource management requires strategies that use technology to increase employee engagement through digital communication, online training, and technology based platforms (Evseeva et al., 2021). In the Cameroonian context, AI augmented human resource practices have been found to influence agripreneurial success significantly and positively, with innovation capability and risk taking behavior serving as partial mediators (Ako, 2026b). AI powered worker side platforms have also been shown to reduce information asymmetry and improve wage bargaining and employment security for agricultural workers in Northwest Cameroon (Ako, 2026c).

2.2 Enterprise Performance in Agri Based Contexts

Enterprise performance in agri based contexts encompasses financial outcomes, operational efficiency, productivity, and sustainability. Agricultural enterprises face distinctive performance determinants, including seasonal variability, climatic dependence, and supply chain complexity. Effective management practices across strategy, culture, structure, talent, and innovation are associated with the financial performance of such enterprises, and talent management is a critical dimension, because recruiting, developing, and retaining skilled personnel is vital for achieving organizational goals (Collings et al., 2019). Digital technologies such as big data and smart farming systems are also changing how agricultural performance is measured and managed (Wolfert et al., 2017). Evidence from the Central Region of Cameroon shows that performance varies with the level of support that enterprises receive, as fish farmers funded by the Agropoles program achieved higher yields, profits, and technical efficiency than nonfunded farmers (Jaza Folefack & Ma'agoum Soh, 2026).

These performance outcomes depend heavily on the quality of the human capital that enterprises can mobilize. In Cameroon, education, health, agricultural labor, and land use account for 78 percent of the variation in agricultural production, which shows that investment in people is a central driver of agricultural output (Henrietta, 2024). Human resource management also plays an integrative role in the adoption of labor saving technologies, as knowledge management, change management, and labor allocation determine whether new tools translate into productivity gains (Qorri, Felföldi, & Kovács, 2024). Performance therefore cannot be explained by technology alone, but by the extent to which enterprises develop, deploy, and retain employees who can use that technology effectively. Operational resilience is increasingly recognized as another performance determinant, because agribusiness enterprises that can absorb shocks, adapt their operations, and recover quickly are better able to sustain both business performance and sustainability outcomes (Zuhri, Abdullah, Puspita, Rozaki, & Wilis, 2026). Digitalized human resource functions further strengthen this capacity, since enterprises with higher levels of HR digitalization show greater flexibility in their operational models

and higher adaptability than their nondigitalized counterparts (Stehnei, Irtyshcheva, Kramarenko, Ishchenko, & Irtyshchev, 2025). Taken together, this evidence suggests that the performance of agri based enterprises rests on the combination of skilled people, adaptive capabilities, and digital tools, which provides the foundation for examining how AI driven talent management may enhance enterprise performance through workforce productivity and employee resilience.

2.3 Workforce Productivity and Employee Resilience

Workforce productivity refers to the efficiency and effectiveness with which employees contribute to organizational outputs, while employee resilience refers to the capacity to adapt, recover, and thrive in the face of workplace challenges and change (Näswall et al., 2019). Resilience at work operates at individual, team, and organizational levels and supports performance under adversity (Hartmann et al., 2020). The two concepts are closely linked in AI driven transformations. AI can enhance productivity by augmenting human decision making (Jarrahi, 2018), but awareness of AI can also affect career competency and burnout, which makes resilience an important resource (Kong et al., 2021). Crisis management capability has been shown to influence performance indirectly through employee resilience, with resilience exhibiting the strongest positive effect on performance (Liu & Long, 2026).

Workforce productivity and employee resilience therefore function as mediating mechanisms through which AI driven talent management translates into enterprise performance, because employees who are both productive and resilient are better equipped to use AI tools and adapt to technological change. Productivity captures the extent to which AI enabled recruitment, skills mapping, and workforce planning place the right people in the right roles at the right time, so that labor is allocated efficiently and human effort is directed toward tasks with the greatest value. AI can strengthen this mechanism by augmenting rather than replacing human judgment, allowing employees to combine analytical insights with their own experience and contextual knowledge (Jarrahi, 2018). Resilience captures a different but complementary mechanism. AI adoption often brings uncertainty, changes in job content, and concerns about job security, and employees who perceive smart technologies as a threat to their future careers may become less committed and less willing to engage with new systems (Brougham & Haar, 2018). Awareness of AI has also been linked to lower career competency and higher job burnout, which makes the capacity to adapt and recover an important resource during technological transition (Kong et al., 2021). Employee resilience can be developed through supportive leadership, learning opportunities, and networks that help employees manage change (Näswall et al., 2019), and it operates at individual, team, and organizational levels to sustain performance under adversity (Hartmann et al., 2020). The interaction between AI and human workers at team level also requires deliberate human resource strategies to maintain engagement and cooperation (Arslan, Cooper, Khan, Golgeci, & Ali, 2022). Digital human resource management in agriculture can support these strategies by using digital communication, online training, and technology based platforms to keep employees engaged (Evseeva, Evseeva, Burmistrov, & Siniavina, 2021). In the Cameroonian agricultural sector, human resource practices that foster empowerment and environmental awareness have been shown to influence employee behavior significantly (Atabongafac & Atan, 2026), and AI powered psychosocial support integrated into human resource practices has been found to build digital resilience and reduce labor disruptions in the Northwest Region (Ako, 2026d). These findings suggest that AI driven talent management is most likely to improve enterprise performance when it raises productivity and, at the same time, strengthens the capacity of employees to cope with the changes that AI brings.

2.4 Theoretical Framework

The Resource Based View posits that organizations achieve sustainable competitive advantage through resources that are valuable, rare, inimitable, and nonsubstitutable. Recent developments of the theory emphasize how such resources create value for stakeholders (Barney et al., 2021). In this study, the Resource Based View helps to explain how AI driven talent management enables organizations to develop human capital as a strategic resource. Digital human resource management practices, including AI driven talent management, can be regarded as strategic assets that enable firms to

develop, deploy, and reconfigure human capital in response to digital transformation (Alexandro, 2025).

Dynamic Capabilities Theory, as developed by Teece et al. (1997), emphasizes the organizational capacity to integrate, build, and reconfigure internal and external competences in rapidly changing environments. Digital transformation requires dynamic capabilities for sensing technological opportunities, seizing them through strategic implementation, and continuously transforming resource configurations (Warner & Wäger, 2019). This perspective is crucial for understanding how agri based enterprises in the Central Region of Cameroon can navigate AI adoption. Innovation oriented human resource strategies contribute to the reengineering of business models and enhance organizational adaptability (Stehnei et al., 2025), while operational resilience can itself be understood as a dynamic capability that links business performance with sustainability outcomes in agribusiness enterprises (Zuhri et al., 2026).

Crisis Management Theory, integrated with research on organizational resilience, explains how organizations detect, prevent, contain, and recover from adverse events (Williams et al., 2017). AI related risks, including professional identity threat and technological uncertainty, can affect the crisis management capabilities of employees in agricultural enterprises (Liu & Long, 2026). In the Northwest Region of Cameroon, which faces conflict induced labor disruptions, AI powered psychosocial support integrated into human resource practices has been shown to build digital resilience through absorptive, recovery, and transformative capacities (Ako, 2026d). Together, the three theories explain why AI driven talent management can enhance performance both directly, as a strategic resource, and indirectly, by strengthening the productivity and resilience of employees.

2.5 Empirical Review

Research in Cameroon provides the most directly comparable evidence. AI augmented human resource practices in the Southwest Region significantly and positively influence agripreneurial success, with innovation capability and risk taking behavior serving as partial mediators, as shown through structural equation modeling with 384 agribusiness owners and managers complemented by qualitative interviews (Ako, 2026b). AI driven matching platforms in the same region explained 31.2 percent of the variance in agribusiness productivity (Ako, 2026a).

In Ukrainian agribusiness, the implementation of AI based forecasting, digital recruitment tools, and automated human resource systems significantly enhanced adaptability and organizational agility, and digitalized enterprises showed 32 percent higher adaptability scores than nondigitalized enterprises (Stehnei et al., 2025). Research on generative AI in rural industries also indicates that AI can support the revitalization of rural talent, although insufficient data infrastructure and incomplete institutional support remain important obstacles (Jin et al., 2026).

Beyond Cameroon, AI is increasingly used in agriculture for crop monitoring, disease detection, yield prediction, and decision support, although adoption among small scale farmers in Africa remains constrained by infrastructure, cost, and skills (Ayim et al., 2022, Aroba & Rudolph, 2024). AI can contribute to innovation and development in emerging economies, but its benefits depend on supporting infrastructure and institutions (Mhlanga, 2021). Research on AI and employees further shows that the technology can be perceived as both an opportunity and a threat, so its effects on performance depend on how it is implemented (Brougham & Haar, 2018, Huang & Rust, 2021).

2.6 Research Gap and Hypotheses

Although research on AI in agriculture and on AI in human resource management has expanded, few studies have examined how AI driven talent management affects the performance of agri based enterprises in developing countries. Prior work has addressed AI adoption in agricultural operations, digital human resource management, and employee resilience separately, without testing how AI enabled talent management influences performance through mediating mechanisms. This study addresses the gap by testing two hypotheses. Hypothesis 1 (H_1) states that AI driven talent

management is positively related to the performance of agri based enterprises. Hypothesis 2 (H_2) states that workforce productivity and employee resilience mediate this relationship.

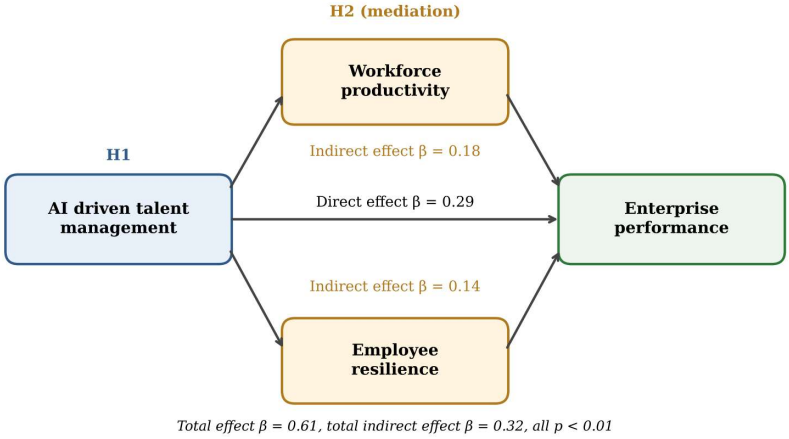


Figure 1. Conceptual model and estimated effects of AI driven talent management on enterprise performance

Figure 1 presents the conceptual model of the study together with the estimated effects. AI driven talent management is linked to enterprise performance through a direct path, which tests H_1, and through two indirect paths via workforce productivity and employee resilience, which together test H_2. The figure shows the direct effect (β=0.29), the indirect effect through workforce productivity (β=0.18), and the indirect effect through employee resilience (β=0.14), all significant at p<0.01. Because both the direct and indirect paths are significant, the model illustrates partial mediation, with the mediators transmitting roughly half of the total effect of 0.61.

3. Research Methodology

3.1 Research Design

This study adopted a quantitative cross sectional survey design to investigate the relationship between AI driven talent management practices and the performance of agri based enterprises in the Central Region of Cameroon. The cross sectional approach permitted data collection at a single point in time and allowed the examination of relationships among variables within the resource limits of the study.

3.2 Population and Sampling

The target population comprised managers and human resource professionals from agri based enterprises in the Central Region, chosen for its position as the leading agricultural producer in Cameroon (Pekarou Pemi et al., 2024). The region hosts diverse activities, including cocoa production in Ntui, fish farming under the Agropoles program, and food crop production. Purposive sampling was used to select 250 participants involved in talent management decisions and familiar with AI technologies. Organizations that had implemented or were implementing AI driven talent management practices were included, with priority given to those using agricultural technology solutions such as diagnostic platforms and mobile applications.

3.3 Instrument

Data were collected through a structured questionnaire adapted from validated instruments. The questionnaire measured AI driven talent management practices, including intelligent recruitment, predictive analytics, and digital workforce planning, enterprise performance, covering financial and operational outcomes, and workforce productivity and employee resilience as mediators, with resilience items informed by established employee resilience measures (Näswall et al., 2019). All

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items used a five point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The questionnaire was piloted with managers of agri based enterprises to ensure clarity and contextual relevance.

3.4 Data Analysis

Analysis was conducted using SPSS version 27 and AMOS version 24 in three stages. Descriptive statistics were used to characterize the sample and key variables. Pearson correlation and regression were used to test the hypothesized relationships. Mediation analysis using bootstrapping with 5.000 resamples was used to test the mediating effects of workforce productivity and employee resilience. Reporting followed established guidance for structural equation modeling and mediation analysis (Hair et al., 2019).

3.5 Validity, Reliability, and Ethical Considerations

Several steps were taken to strengthen the quality of the measurement. The questionnaire items were adapted from established scales and reviewed by academics in human resource management and agricultural economics to confirm content validity in the Cameroonian context. The pilot test helped to remove ambiguous wording and to confirm that respondents understood the AI related terms used in the instrument. Internal consistency was assessed with Cronbach alpha for each construct, and the bootstrapped confidence intervals provided a robust basis for testing indirect effects without assuming the normality of the sampling distribution (Hair et al., 2019).

Ethical principles guided every stage of data collection. Participation was voluntary, respondents were informed about the purpose of the study, and informed consent was obtained before the questionnaire was administered. Responses were treated confidentially, no names of individuals or enterprises were recorded in the dataset, and results are reported only in aggregate form. Respondents were also free to withdraw at any time without consequence.

4. Results and Discussions

4.1 Descriptive Statistics

Table 1. Descriptive statistics of study variables

Variable	Mean	Standard Deviation
AI driven talent management	3.68	0.92
Enterprise performance	3.52	0.85
Workforce productivity	3.61	0.89
Employee resilience	3.45	0.94

Table 1 presents the mean scores and standard deviations of the four study variables, based on the field survey conducted in the Central Region of Cameroon in 2026. The mean for AI driven talent management (M=3.68) indicates that these practices are moderately adopted, suggesting growing but still developing use of AI in human resource functions. Enterprise performance (M=3.52), workforce productivity (M=3.61), and employee resilience (M=3.45) are also at moderate levels. Employee resilience has the lowest mean and the highest standard deviation (SD=0.94), which indicates that resilience varies more across enterprises than the other variables.

4.2 Relationship between AI Driven Talent Management and Enterprise Performance

Table 2. Correlation between AI driven talent management and enterprise performance

Relationship	Correlation Coefficient	Significance
AI driven talent management and enterprise performance	0.523	0.000

Table 2 shows the Pearson correlation between AI driven talent management and enterprise performance, based on the 2026 field survey. The coefficient of 0.523 indicates a moderate to strong positive relationship, and the significance value of 0.000 shows that the relationship is significant at $p<0.01$. This finding supports H_1 and indicates that organizations in the Central Region of Cameroon that implement AI driven talent management practices demonstrate higher levels of enterprise performance.

4.3 Mediating Role of Workforce Productivity and Employee Resilience

Table 3. Mediation analysis results

Effect	Path	Estimate	Confidence Interval
Direct effect	AI driven talent management to performance	0.29**	[0.16, 0.42]
Indirect effect 1	AI driven talent management to productivity to performance	0.18**	[0.10, 0.26]
Indirect effect 2	AI driven talent management to resilience to performance	0.14**	[0.07, 0.22]
Total indirect effect	Combined indirect paths	0.32**	[0.20, 0.45]
Total effect	AI driven talent management to performance	0.61**	[0.48, 0.75]

Table 3 presents the results of the mediation analysis, in which ** denotes $p<0.01$ and confidence intervals are based on 5.000 bootstrap samples from the 2026 field survey. The direct effect of AI driven talent management on enterprise performance ($\beta=0.29$) and the total indirect effect through the two mediators ($\beta=0.32$) are both significant, and none of the confidence intervals include zero. The indirect path through workforce productivity ($\beta=0.18$) is slightly stronger than the path through employee resilience ($\beta=0.14$). Because both direct and indirect effects are significant, the results indicate partial mediation and support H_2.

4.4 Discussion

The findings reveal a significant positive relationship between AI driven talent management practices and the performance of agri based enterprises in the Central Region of Cameroon ($r=0.523$, $p<0.01$), supporting H_1. This result is consistent with research showing that AI applications in human resource management can improve decision quality, efficiency, and employee experiences (Budhwar, Malik, & Thevisuthan, 2022) and with evidence that innovation in recruitment and retention and the use of HR analytics and AI significantly improve workforce productivity and performance (Alexandro, 2025). The consistency of these findings across contexts suggests that AI driven talent management is broadly beneficial for organizational performance when it is implemented strategically.

From the perspective of the Resource Based View, these practices enable organizations to develop human capital as a valuable, rare, and inimitable resource (Barney, Ketchen, & Wright, 2021). AI supports intelligent candidate sourcing, predictive talent mapping, and the deployment of talent to areas of highest value creation. The findings also resonate with research showing that AI capability combining technology and human skills creates organizational value (Chowdhury, Dey, Joel-Edgar, Bhattacharya, Rodriguez-Espindola, Abadie, & Truong, 2023) and with evidence that AI based forecasting and digital recruitment tools enhance organizational adaptability and agility (Stehnei, Irtyshcheva, Kramarenko, Ishchenko, & Irtyshchev, 2025), which is particularly important for agri based enterprises facing environmental volatility and climate vulnerability (Atabongafac & Atan, 2026).

Challenges must nevertheless be acknowledged, including concerns about the dehumanization of selection processes and difficulties of digital access (Budhwar et al., 2022). In Cameroon, these concerns are compounded by limited rural digital literacy and low smartphone penetration (Ayim, Kassahun, Addison, & Tekinerdogan, 2022; Ako, 2026e), which suggests that the positive relationship depends on how AI technologies are implemented.

The mediation analysis confirms that workforce productivity and employee resilience significantly mediate the relationship between AI driven talent management and performance, supporting H_2. The indirect effects (β=0.18 for productivity and β=0.14 for resilience) indicate that approximately 52 percent of the total effect is transmitted through these mechanisms. The mediating role of workforce productivity can be interpreted through Dynamic Capabilities Theory, because AI driven talent management enhances productivity by enabling organizations to sense, seize, and transform opportunities related to talent (Warner & Wäger, 2019). This is particularly relevant in Cameroon, where human capital development accounts for a large share of the variation in agricultural production (Henrietta, 2024). It is also consistent with evidence from the South West Region, where AI platform adoption explained 31.2 percent of the variance in agribusiness productivity (Ako, 2026a).

The mediating role of employee resilience is particularly significant in AI driven transformations. Crisis management capability influences performance indirectly through employee resilience, which has the strongest positive effect on performance (Liu & Long, 2026), and resilience helps employees cope with the uncertainty and burnout that AI can create (Hartmann, Weiss, Newman, & Hoegl, 2020). AI powered psychosocial support integrated into human resource practices similarly enhances digital resilience and helps mitigate labor disruptions (Ako, 2026d), and operational resilience has been found to act as a dynamic capability that supports the sustainable performance of agribusiness enterprises (Zuhri, Abdullah, Puspita, Rozaki, & Wilis, 2026). Convergent evidence from the Northwest Region (Ako, 2026c; Ako, 2026d), the Southwest Region (Ako, 2026a; Ako, 2026b), and the Central Region in the present study suggests that the effects of AI driven human resource practices on productivity and resilience are a robust pattern in Cameroonian agriculture.

The partial mediation indicates that AI driven talent management also exerts a direct effect on performance that is not transmitted through productivity or resilience. This direct effect may reflect structural benefits such as reduced administrative costs, faster decision making, and stronger compliance management (Jarrahi, 2018).

The findings also carry practical implications for policy makers and support institutions. Because the benefits of AI driven talent management depend on digital infrastructure and skills, public programs that expand rural connectivity and digital training could amplify the gains observed in this study (Aroba & Rudolph, 2024). Agricultural extension services and business support organizations could help smaller enterprises access affordable AI tools for recruitment, skills mapping, and workforce planning. In addition, the strong mediating role of employee resilience suggests that technology investment should be accompanied by investment in people, including coaching, wellbeing programs, and participative change processes that allow workers to shape how AI is used in their daily tasks (Arslan, Cooper, Khan, Golgeci, & Ali, 2022).

4.5 Summary of Key Findings

The study established five key findings. First, there is a significant positive relationship between AI driven talent management practices and the performance of agri based enterprises in the Central Region of Cameroon (r=0.523, p<0.01). Second, workforce productivity and employee resilience significantly mediate this relationship, with a significant total indirect effect (β=0.32, p<0.01) and direct effect (β=0.29, p<0.01) indicating partial mediation. Third, AI driven talent management enhances workforce productivity, which in turn improves enterprise performance (β=0.18, p<0.01). Fourth, AI driven talent management enhances employee resilience, which in turn improves enterprise performance (β=0.14, p< 0.01). Fifth, AI driven talent management practices are moderately adopted among agri based enterprises in the Central Region (M=3.68).

5. Conclusions

This study examined the relationship between AI driven talent management and the performance of agri based enterprises in the Central Region of Cameroon, with workforce productivity and employee resilience as mediators. The findings show that AI driven talent management improves enterprise

performance both directly and indirectly through higher workforce productivity and stronger employee resilience. The partial mediation indicates that a substantial share of its effect works through workforce capabilities and psychological resources.

Agri based enterprises should integrate AI strategically into talent management, beginning with audits of current practices and investment in predictive workforce planning and real time performance monitoring. These steps should be supported by change management, continuous digital skills training, and measures that sustain employee resilience, such as transparent communication, feedback channels, and psychological support. AI should also be implemented in a human centered way that preserves personal interaction and reduces access barriers.

This study is limited by its cross sectional design, self reported data, and focus on a single region, which restrict causal inference and generalizability. Future research should use longitudinal designs, extend the investigation to other regions and developing countries, and compare agricultural subsectors to examine how context shapes the effectiveness of AI driven talent management.

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Conflict of Interest

The author declares that there is no conflict of interest regarding the publication of this article.

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