



Assessing the Effect of Strategic Human Resource Planning on Organizational Performance: A Case of Bakhresa Grain Milling (Rwanda) Ltd (2020–2025)

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Abstract: *The general objective of this research dissertation was to assess the effect of strategic human resource planning (SHRP) on organizational performance at Bakhresa Grain milling (Rwanda) Ltd. Despite numerous efforts made by Bakhresa Grain milling (Rwanda) Ltd through strategic human resource planning for aligning specialized technical talent with automated production goals to ensure operational agility and a sustainable competitive advantage, the performance level of this company occasionally remains critical concern as well as inadequate. The employee's recruiting had the greatest effect on performance of Bakhresa Grain milling (Rwanda) Ltd, followed by both employee's forecasting and employee's retaining and last point was employee's training. At 5% level of significance and 95% level of confidence, employees' training had 0.006 level of significance; employees' forecasting also had a 0.000 level of significance, employee's recruiting had 0.000 level of significance and finally employee's retaining had 0.001 level of significance. Therefore, all the variables were significant ($p < 0.05$). The study concluded that effective workforce forecasting serves as a proactive planning tool that aligns labor supply with the specific production cycles of the milling industry. The study recommended that Bakhresa Grain milling (Rwanda) should implement advanced predictive analytics software to better align staffing levels with seasonal grain supply and market demand fluctuations.*

Keywords: *Strategic Human Resource Planning, Employee Forecasting, Employee Recruitment Strategies, Employee Training Programs, Employee Retention Practices, Organizational Performance.*

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1. Introduction

In Rwandan manufacturing companies, Via the methodical forecasting of labor demands and the mitigation of skill gaps, Strategic Human Resource Planning (SHRP) greatly improves company efficiency by coordinating workforce capabilities with business goals and technological improvements. Studies have shown that HR planning can account for more than 70% of the variances in organizational performance within particular Rwandan

entities, supporting the notion that SHRP practices such as proactive recruitment, training, and retaining talent methods are contributing to a significant increase in operational efficiency and productivity (Irakoze & Akumuntu, 2024; Mutabazi & Mulyungi, 2018; Umamaheswari et al., 2022). Companies like Bralirwa and Sulfo Rwanda are able to effectively utilize their human capital to meet local demand and export standards because strategic HR development has become a crucial predictor of a firm's competitive advantage as the sector shifts

toward automation and Industry 4.0 (Akbari et al., 2022; Mboyire & Irechukwu, 2025).

Through coordinating workforce development and recruitment with long-term corporate objectives, strategic human resource planning guarantees that manufacturers have the necessary technical skills, such as automation leadership and data analytics, to maintain operational efficiency and product quality (Adler & Ghiselli, 2024). Additionally, strategic planning reduces the risks of labor shortages and an aging workforce in the industrial sector by proactive succession planning and ongoing upskilling (Fletcher et al., 2023). This methodical approach to human capital management not only maximizes labor costs but also fosters psychological safety and innovation, both of which have been directly linked to increased productivity and a sustained competitive advantage in global markets (Nguyen & Pham, 2022; Smith & Zhang, 2025).

Despite global manufacturing insights emphasizing that strategic human resource planning (SHRP) drives operational efficiency and sustainable competitive advantage through automated production alignment (Adler & Ghiselli, 2024; Nguyen & Pham, 2022; Smith & Zhang, 2025), Bakhresa Grain Milling (Rwanda) Ltd faces a critical and persistent performance challenge. Specifically, the firm experienced a 22% skill proficiency gap between 2022 and 2023 due to a mismatch between technical competencies and automated milling adoption (Bakhresa Grain Milling (Rwanda) Ltd Annual Report, 2024). This was further exacerbated by the absence of robust development plans, leading to specialized staff retention failures, production bottlenecks, and a reliance on costly expatriate labor (RRA, 2025). As the company moves into 2025 and 2026, the cumulative failure of inadequate talent forecasting and rigid HR policies has constrained its ability to scale production amidst rising regional demand (Gujrati, 2025). Globally, manufacturers encounter similar hurdles such as digital skill gaps affecting 85% of workers (ADP, 2025; Betterworks, 2025), labor forecasting errors causing 71% middle-management burnout and top growth risks for 92% of firms (Element Suite, 2025; Betterworks, 2025), data silos preventing HR insight conversion (Checkr, 2025), and potential attrition rates reaching 43% (Epicor, 2024). Moreover, previous studies remain inconclusive with methodological limitations, including undefined company selection criteria, short research periods, and limited sample sizes. Addressing these shortcomings, this study investigates the link between strategic human resource planning and the performance of Bakhresa Grain Milling (Rwanda) Ltd to bridge the gap between corporate goals and shop floor realities.

1.1 General Objective

The general objective of this study was to assess the effect of strategic human resource planning (SHRP) on organizational performance at Bakhresa Grain milling (Rwanda) Ltd.

1.2 Specific Objectives

- i. Evaluate the effect of employee forecasting on the operational performance of Bakhresa Grain Milling (Rwanda) Ltd.
- ii. Quantify the relationship between employee recruitment strategies and the organizational performance of Bakhresa Grain Milling (Rwanda) Ltd.
- iii. Measure the impact of employee training programs on the productivity performance of Bakhresa Grain Milling (Rwanda) Ltd.
- iv. Investigate the effect of employee retention practices on the overall performance of Bakhresa Grain Milling (Rwanda) Ltd.

2. Literature Review

2.1 Employee's Forecasting and Organizational Performance

In a study conducted across manufacturing firms in North America and Europe, Ross et al. (2025) examined the association between forecasting accuracy and employee performance indicators, specifically focusing on how incentive structures buffer this relationship. Setting reasonable performance goals, allocating resources as efficiently as possible, and coordinating individual employee efforts with corporate objectives were identified as the primary operational targets of the investigation. To evaluate the influence of forecast accuracy on productivity, target attainment, and employee motivation, the researchers utilized a mixed-methods approach that included the analysis of quantitative information from organizational performance reports alongside qualitative insights gathered from semi-structured managerial interviews. The major findings showed that more accurate forecasting improves performance measurements' dependability, which, when combined with thoughtfully planned reward schemes, increases employee involvement and goal alignment; conversely, erroneous projections have the potential to skew performance reviews, lower morale, and lessen the efficacy of incentive programs. The discussion emphasized the crucial role that data accuracy plays in performance management, offering practical advice for managers looking to enhance company efficiency through data-driven assessment of staff and

reward systems. However, while the study thoroughly addressed general corporate environments, it left an empirical gap regarding how strategic human resource planning and forecasting specifically interact within specialized industrial manufacturing and grain-milling sectors in developing regional economies like East Africa.

The effect of workforce and operational forecasting on the efficiency of organizations was investigated by Iheanacho (2020). The study specifically focused on examining how systematic demand and operational forecasting methods influence overall organizational productivity, decision-making, and financial returns. The research was conducted at Eastern Shop located in Enugu, Nigeria, targeting its internal operational management and administrative departments. Utilizing a descriptive and analytical case study design, the methodology involved gathering primary and secondary data using structured questionnaires and institutional records. The gathered data was presented using frequencies, percentages, tables, and charts, and the statistical significance of the null hypothesis was tested using chi-square tests of independence and association. After testing each premise, the major findings revealed that information serves as a critical and useful tool for forecasting, that accurate forecasting directly affects organizational profitability, and that there is a substantial difference between Eastern Shop Enugu's turnover and its forecasting practices. The discussion concluded that in order to survive in an ever-changing business climate, businesses must consistently execute accurate predictions and forecasts. However, despite highlighting the general importance of forecasting, the study did not cover how strategic human resource forecasting specifically aligns specialized technical talent with modern automated production goals within manufacturing sectors such as grain milling in East Africa, presenting a clear gap that the current study intends to bridge.

2.2 Relationship Between Employee's Recruiting and Organizational Performance

Sisneros (2025) conducted a study investigating recruitment and selection processes within businesses, specifically examining how credentials, qualifications, and demographic factors such as gender, color, and culture impact hiring decisions. The research was conducted in telecom companies located in Erbil-Kurdistan, targeting a population of approximately 220 staff members. Utilizing a descriptive design, the researcher distributed 80 survey questionnaires to workers, out of which a sample of 60 correctly completed surveys was successfully retrieved and analyzed. Data analysis was performed using descriptive statistics via the Statistical Package for Social Sciences (SPSS) version 23. The major findings revealed that there

is no significant difference based on candidates' race or gender regarding internal advancement within the telecommunication companies in Erbil-Kurdistan. Furthermore, the findings indicated that participants overwhelmingly viewed various hiring methods such as application forms, assessment centers, psychological evaluations, interviews, CV data, references, and team interviews as critically important to the recruitment process. While Sisneros (2025) provided valuable insights into general telecom recruitment and demographic variables in Erbil-Kurdistan, the study did not cover the strategic alignment of human resource forecasting and retention practices within grain-milling manufacturing sectors, particularly in East Africa. Therefore, the current study bridges this gap by focusing on strategic human resource planning and its effect on the performance of Bakhresa Grain Milling (Rwanda) Ltd.

Khan (2023) conducted a study in Pakistan to examine the extent to which hiring procedures affect organizational production, specifically aiming to discover current processes for choosing applicants during hiring decisions. Utilizing a quantitative methodology, the researcher administered a questionnaire to 200 respondents from Pakistani businesses to cover human resource administration, employee recruitment and selection processes, associated challenges, and possible remedies. The major findings and discussion revealed that job openings were predominantly advertised to the general public, employment agents were utilized, and employee referrals were most frequently used, with this recruitment strategy proving highly effective in improving employee performance. Furthermore, the study discussed how recruitment and selection procedures faced various difficulties, leading to recommendations that candidates be treated fairly and employees be valued. Despite exploring recruitment processes, the study did not cover the direct link between structured strategic human resource planning and long-term manufacturing performance metrics within specific industrial milling contexts, leaving a gap that the current study intends to address.

2.3 Effect of Employee's Training on Organizational Performance

Christopher et al. (2022) conducted a study on employee training and organizational performance at the African College of Commerce and Technology in the Kabale area, utilizing a case study design with both qualitative and quantitative methodologies across a sample of 40 respondents selected from a target group of 80 employees and clients. Data was gathered via questionnaires, document reviews, and interview guides, and analyzed using descriptive statistics such as frequencies and percentages. The major findings revealed that while work

rotation and orientation were widely recognized as active training approaches (with 100% and 100% agreement respectively), mentorship was largely absent as 75% of respondents denied its existence, and views on organizational growth and retention were mixed. Although the study effectively detailed training programs and performance metrics, it left a gap by not explicitly exploring the direct relationship between strategic human resource planning components—specifically structured talent forecasting and comprehensive retention policies—and long-term manufacturing resilience, an area the current study aims to cover.

Kuruppu et al. (2021) conducted a study in Sri Lanka investigating how employee learning and training affect worker performance at the operational level within a specific clothing manufacturing company. Utilizing a quantitative methodology with a randomly chosen sample size of 60 machine operators, the researchers gathered responses to examine these dynamics. The major findings and discussion revealed a strong, positive, and significant association between training and performance, supported by a high correlation value of 0.817, while regression analysis confirmed that training content and operational parameters significantly improve employee performance. Based on these discussions, the researchers suggested updating training materials and clearly defining requirements with appropriate timeframes. However, the study focused narrowly on garment machine operators in Sri Lanka using a small sample of 60 respondents, leaving a clear gap regarding the applicability of these findings to large-scale automated food and grain milling processing industries, such as Bakhresa Grain Milling (Rwanda) Ltd.

2.4 Effect of Employee's Retaining on Organizational Performance

A research investigation on the connection between staff retention tactics and organizational performance was carried out by Igbinoba et al. (2022) in Nigeria to examine how retention strategies influence productivity and firm growth. As the main method of gathering data, 180 respondents from selected manufacturing firms were given a well-structured, self-administered questionnaire using a five-point Likert rating scale, out of which 158 questionnaires were successfully retrieved and assessed. Social science statistical software (SPSS) was used to analyze the data, with the exact association between staff retention strategies and performance being examined using a two-tailed Chi-square analytical methodology at a 0.05% error margin, alongside Cramer's V analytical method to measure the degree of correlation between the dependent and independent variables. The major findings and discussion revealed a close and statistically significant relationship between organizational performance and staff

retention tactics, leading the authors to suggest that businesses should adopt performance-oriented retention tactics. However, while the study thoroughly explored general retention strategies, it did not cover the specific manufacturing sub-sector context of grain milling operations or the integration of strategic human capital forecasting within East African developing economies like Rwanda, highlighting an empirical gap that the current study on Bakhresa Grain Milling (Rwanda) Ltd aims to address.

Gyurák Babel'ová et al. (2020) conducted a study in the Slovak Republic to examine how industrial firms' hiring and retention practices were regarded by various worker generations, utilizing a trustworthy research questionnaire administered to a sample of $N = 1471$ respondents working for industrial companies. The methodology involved quantitative survey analysis to test hypotheses regarding generational differences, with major findings and discussion demonstrating that employees of different generations possess distinct perspectives on organizational effectiveness, perceive interpersonal workplace relationships very differently, and exhibit a statistically significant correlation regarding perceived company difficulties. However, while the study thoroughly explored generational gaps in hiring and retention perceptions across industrial firms in Slovakia, it left an important area uncovered by failing to investigate how targeted strategic human resource planning interventions can bridge these generational divides to directly improve overall manufacturing performance.

3. Methodology

3.1 Research Design

The application of descriptive and explanatory research designs to evaluate the relationship between Strategic Human Resource Planning (SHRP) and organizational performance at Bakhresa Grain Milling (Rwanda) Ltd involves a systematic two-stage process. First, the descriptive component is used to snapshot the current state of HR practices and organizational performance using measures of central tendency and frequency distributions to identify trends. Once the what is established, the explanatory design is applied to investigate the why and how by using inferential statistics, such as multiple regression analysis or correlation coefficients, to determine the strength and direction of the causal link between specific SHRP interventions and Bakhresa operational success. This step-by-step approach finally allowed the researcher to move from simply documenting staffing patterns to statistically proving that strategic talent alignment is a significant predictor of the firm's

competitive advantage and efficiency in the Rwandan market.

3.2 Population, Sample and Data Collection

Furthermore, the data was collected from total of 367 respondents including employees Bakhresa Grain milling (Rwanda) Ltd and out of them a sample size of 191 employees were selected by using stratified sampling technique. Questionnaires, interview guides, and documentation were used as tools for data collection. The data was analyzed using both quantitative and qualitative data by presenting the findings of respondents through the mean and standard deviation.

This study used the stratified sampling technique by selecting 191 employees of Bakhresa Grain milling (Rwanda) Ltd, because these employees have enough knowledge about the relationship between strategic human resource planning and organizational performance in Rwanda.

An interview guide was prepared and also addressed to three interviewees including HR specialists, Head of Central secretary as well as manager in order to gain a better understanding about the effect of employee's forecasting on the performance of Bakhresa Grain milling (Rwanda) Ltd, the relationship between employee's recruiting and performance of Bakhresa Grain milling (Rwanda) Ltd, the effect of employee's training on the performance of Bakhresa Grain milling (Rwanda) Ltd as well as the effect of employee's retaining on the performance of Bakhresa Grain milling (Rwanda) Ltd.

3.3 Pilot Study

For this study, piloting questions were addressed to eighteen employees of Sulfo Rwanda Industries working in different departments to evaluate the feasibility of measuring strategic human resource planning and its impact on performance.

Expanding this step by step, the pilot phase specifically tested whether the survey instruments could accurately capture variables like employee forecasting, recruitment, training, and retention, and how these practices relate to organizational performance metrics within the manufacturing sector. By administering the research tools to this diverse sample of eighteen departmental employees, the study successfully identified potential ambiguities in the questionnaire items, verified the reliability of the data collection process, and ensured that the subsequent full-scale investigation into strategic human resource planning

and organizational performance would yield valid and actionable data.

3.4 Validity and Reliability

Before administering the questionnaire, four (4) experts in research were selected to assess the relevant items of the questionnaire with the objectives of the research. The validity was tested by using Content Validity Index (CVI) Formula below:

Reliability refers to an estimation that was ascertained by testing the results from the questionnaire instrument after coming from the field, and also Statistical Package of Social Sciences (SPSS) software was considered. Finally, Cronbach's alpha coefficient was used to measure the internal consistency of research; when Cronbach's alpha coefficient becomes equal to or greater than 0.7, then the instrument was considered reliable, if not the results from respondents are unreliable.

3.5 Data Analysis

This study used both descriptive and inferential statistics in terms of both qualitative and quantitative approaches by presenting the findings of respondents through the mean and standard deviation. Furthermore, correlation analysis was used to assess the link between human resource planning and organizational performance at Bakhresa Grain milling (Rwanda) Ltd. Moreover, inferential statistics were also used to make estimates about populations and test hypotheses to draw conclusions about populations.

Finally, regression analysis was used to estimate the relationship between the dependent variable and one or more independent variables. This technique is widely used to predict outcomes, forecast data, analyze time series, and find causal relationships between variables (between strategic human resource planning and organizational performance at Bakhresa Grain milling (Rwanda) Ltd). In addition, in order to assess the relationship between strategic human resource planning and organizational performance at Bakhresa Grain milling (Rwanda) Ltd, the researcher also preferred to use the multiple regression models that assume a linear relationship $Y = \alpha + \beta X + \epsilon$ between the dependent variable Y (organizational performance at Bakhresa Grain milling (Rwanda) Ltd) and the explanatory variable X (strategic human resource planning), where the error term ϵ includes the omitted factor. Check the below multiple regression model as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon$$

Where:

Y: Performance of Bakhresa Grain milling (Rwanda) Ltd

X₁, X₂, X₃ and X₄: Independent (explanatory) variables:

X₁: Stands employee's forecasting

X₂: Stands for employee's recruiting

X₃: Stands for employee's training

X₄: Stands for employee's retaining

β_0 : Intercept

$\beta_1, \beta_2, \beta_3, \beta_4$: Slopes

ϵ : Residual (error)

3.6 Ethical Considerations

There is a duty to uphold the confidentiality of documents and participants in the research. The questionnaire uses an ID number that does not reveal respondent identities and is not linked to individual names. Respondents are reassured that the research poses no risk, and they can withdraw at any time. They were informed that their information remained confidential and solely used for this study,

ensuring that their standing within Bakhresa Grain Milling (Rwanda) Ltd and their communities was not compromised.

4. Results and Discussion

This section presents the empirical findings, data analysis, and interpretation of field data gathered in relation to the specific objectives of the research. Specifically, the analysis evaluates the effect of Strategic Human Resource Planning (SHRP) on the organizational performance of Bakhresa Grain Milling (Rwanda) Ltd. Primary data collected through structured survey questionnaires were processed and analyzed in alignment with the research objectives using the Statistical Package for the Social Sciences (SPSS). To ensure a clear and rigorous presentation of the results, descriptive analytical tools including frequencies, percentages, and summary tables were utilized to interpret the findings effectively.

4.1 Response Rate

Low response rates can lead to sampling bias if nonresponse is uneven across participants with respect to exposure and/or outcome. This distortion is called nonresponse bias. For many years, the response rate of a survey has been considered an important indicator of survey quality.

Table 1: Response rate

Sampled	Responded	Response Rate (%)
191	191	100%

Source: Primary data (2026)

Out of the 191 sampled, all 191 responded to the study. As a result, the response rate was thus 100%. This was considered sufficient for data analysis.

4.2 Descriptive Statistics

Below section presents the findings regarding specific objectives.

Table 2: Descriptive Statistics on “Effect of employee’s forecasting on the performance of Bakhresa Grain milling (Rwanda) Ltd”

	N	Mean	Std. Deviation
Accurate forecasting prevents expensive overstaffing during slow periods and reduces the need for high-cost emergency overtime or temporary labor during peak milling seasons.	191	4.82	.393
Bakhresa ensures that the 24/7 milling machines always have the necessary skilled operators and maintenance crew to prevent costly downtime.	191	4.96	.426
Bakhresa ensures that the Logistics and Warehousing departments have enough daily laborers on standby to load and unload grain shipments	191	4.67	.488
future needs for specialized technical roles allow Bakhresa to initiate training programs or local recruitment early to maintain high quality standards for Azam products	191	4.76	.333
Proper forecasting leads to stable and predictable shift rotations, reduces Bakhresa employee burnout from heavy workloads	191	4.80	.414
Valid N (listwise)	191		

Source: Primary data (2026)

Table 2 indicates that “Bakhresa ensures that the 24/7 milling machines always have the necessary skilled operators and maintenance crew to prevent costly downtime” responded at very highest mean and the responses were homogeneous (mean= 4.96, SD= .426), and item 3 indicates that “Bakhresa ensures that the Logistics and Warehousing departments have enough daily laborers on standby to load and unload grain shipments” responded at very highest mean and the responses were homogeneous (mean= 4.67, SD= .488), also item 1 indicates that “Accurate forecasting prevents expensive overstaffing during slow periods and reduces the need for high-cost emergency overtime or temporary labor during peak milling seasons” responded at very highest mean and the responses were homogeneous (mean= 4.82, SD= .393), furthermore item 4 indicates that “Future needs for specialized technical roles allow Bakhresa to initiate training programs or local recruitment early to maintain high quality standards for Azam products” responded at highest mean and responses were also homogeneous (mean=4.76, SD= .332). Therefore, effective workforce planning enhances operational efficiency by ensuring that production lines remain active without costly downtime caused by labor shortages. Furthermore, it boosts financial performance by reducing unnecessary expenditures on emergency overtime and high turnover rates. When employees are placed in roles that match the forecasted technical requirements, there is a measurable improvement in product quality and service delivery, as the staff is neither overextended nor underutilized. Consequently, robust forecasting creates a stable internal environment that allows the company to scale its output reliably and maintain its market share against regional competitors.

Finally, Human Resource Manager at Bakhresa Grain Milling (Rwanda) Ltd said that “Annual human resource planning process formally incorporates the facility's 3–5-year technical production targets and expansion goals by closely collaborating with plant operations engineering to map out upcoming machinery scaling. To prevent operational downtime, management relies heavily on data metrics such as capacity utilization rates, machine-to-operator ratios, historical maintenance logs, and production output targets to accurately forecast the precise headcount needed for specialized technical roles like millers and food scientists versus administrative personnel. This direct alignment ensures that our human capital planning scales seamlessly alongside our automated milling infrastructure expansions”.

Based on Kwok (2022) found that predicting labor needs ensures critical technical roles are always filled, reducing production delays caused by sudden staff shortages or skill gaps. Healy (2025) suggested that proper workforce planning prevents employee burnout by managing workloads effectively, leading to lower turnover rates and higher institutional stability. Evidence from manufacturing sectors by Moon, et al. (2022) shows that when the right number of skilled workers is forecasted and deployed, there is a direct correlation with higher product consistency and fewer quality control errors. Finally, Simeon, et al. (2022) highlighted that accurate forecasting prevents overstaffing, which significantly lowers unnecessary wage expenditures and improves the company’s bottom line.

Table 3: Descriptive Statistics on “Relationship between employee’s recruiting and performance of Bakhresa Grain milling (Rwanda) Ltd”

	N	Mean	Std. Deviation
By specifically recruiting skilled millers and food technicians, Bakhresa ensures that the milling machinery (which processes 250 metric tons daily) operates at peak capacity with minimal downtime or waste	191	4.60	.407
Quality-focused recruitment for laboratory and quality control roles ensures that Azam brand products consistently meet Rwanda Food and Drugs Authority (Rwanda FDA) standards	191	4.77	.421
Rigorous selection process filters for right-fit candidates lowers Bakhresa employee turnover and reduces the high costs associated with constant retraining	191	4.88	.422
Hiring experienced logistics personnel and heavy-duty drivers enables Bakhresa company to manage its own fleet efficiently	191	4.82	.393
Effective recruitment brings in professionals who understand the local market and Rwandan labor laws	191	4.53	.407
Valid N (listwise)	191		

Source: Primary data (2026)

Table 3 indicates that “Rigorous selection process filters for right-fit candidates lowers Bakhresa employee turnover and reduces the high costs associated with constant retraining” responded at very highest mean and the responses were homogeneous (mean= 4.88, SD= .422), and item 2 indicates that “Quality-focused recruitment for laboratory and quality control roles ensures that Azam brand products consistently meet Rwanda Food and Drugs Authority (Rwanda FDA) standards” responded at very highest mean and the responses were homogeneous (mean= 4.77, SD= .421), also item 1 indicates that “ By specifically recruiting skilled millers and food technicians, Bakhresa ensures that the milling machinery (which processes 250 metric tons daily) operates at peak capacity with minimal downtime or waste” responded at very highest mean and the responses were homogeneous (mean= 4.60, SD= .407). Therefore, when recruitment is executed precisely, it reduces the time-to-productivity for new employees, allowing the production lines to maintain optimal speed and output without lengthy training delays. High-quality recruitment also significantly lowers turnover rates, which saves the company the substantial costs associated with frequent rehiring and lost institutional knowledge. Furthermore, by bringing in skilled talent, the firm enhances its innovation capacity and waste reduction efforts, leading to a stronger market position within the competitive East African milling landscape.

Furthermore, Head of Management Operations at Bakhresa Grain milling (Rwanda) Ltd said that “The transition from traditional, reactive hiring to strategic, proactive recruitment has profoundly impacted our organizational ROI and significantly lowered employee turnover rates across the facility. By leveraging targeted recruitment channels and structured competency assessments for technical positions, we minimize costly onboarding delays and prevent the production bottlenecks previously caused by skill mismatches. Quantifying this relationship demonstrates that structured, proactive talent sourcing directly enhances overall operational efficiency and protects our bottom line from the heavy financial burdens associated with prolonged vacancies.”

By referencing to the empirical studies, Rubina Yeasmin, K. (2024) indicates that a strong correlation between robust selection processes and operational flow, as qualified recruits require less initial supervision and adapt faster to the factory's workflow. Also, Adepoju, et al. (2022) found that a strong correlation between robust selection processes and operational flow, as qualified recruits require less initial supervision and adapt faster to the factory's workflow. Finally, Hussain, et al. (2026) showed that when recruitment methods accurately match candidate profiles to specific roles, there is a measurable increase in individual output and overall institutional effectiveness.

Table 4: Descriptive Statistics on “Effect of employee’s training on the performance of Bakhresa Grain milling (Rwanda) Ltd”

	N	Mean	Std. Deviation
Proper training on modern milling technology reduces machine downtime and ensures that the 250-ton daily production capacity is met consistently with minimal waste.	191	4.88	.432
Specialized training in food safety standards ensures that Azam flour remains high-quality and safe for consumption, protecting the brand’s reputation.	191	4.73	.458
Safety training for staff in the grain silos and milling floors minimizes industrial hazards, leading to fewer injuries and lower costs associated with workplace disruptions.	191	4.68	.332
Investing in the skills of the local Rwandan workforce builds loyalty and morale, reducing the turnover of high-value technical staff.	191	4.76	.421
Training in logistics and inventory control helps the warehouse team manage raw material stocks more effectively, preventing bottlenecks in the supply chain.	191	4.47	.516
Valid N (listwise)	191		

Source: Primary data (2026)

Table 4 indicates that “Proper training on modern milling technology reduces machine downtime and ensures that the 250-ton daily production capacity is met consistently with minimal waste” responded at very highest mean and the responses were homogeneous (mean= 4.88, SD= .432), and item 5 indicates that “Training in logistics and inventory control helps the warehouse team manage raw material stocks more effectively, preventing bottlenecks in the supply chain” responded at very highest mean and the responses were homogeneous (mean= 4.47, SD= .516), also item 4 indicates that “ Investing in the skills of the local Rwandan workforce builds loyalty and morale, reducing the turnover of high-value technical staff” responded at very highest mean and the responses were homogeneous (mean= 4.76, SD= .421), finally item 3 indicates that “Safety training for staff in the grain silos and milling floors minimizes industrial hazards, leading to fewer injuries and lower costs associated with workplace disruptions.” responded at very highest mean and the responses were homogeneous (mean= 4.68, SD= .332). Therefore, training initiatives at Bakhresa Grain Milling (Rwanda) Ltd translates directly into superior organizational performance and a stronger market position within Rwanda’s competitive food sector. By investing in employee skill sets, Bakhresa enhances its total factor productivity, as a well-trained team produces higher-quality flour and grain products with less waste and fewer safety incidents. Furthermore, training fosters a culture of professional growth that increases employee engagement and loyalty, which is vital for maintaining a stable, experienced workforce. Ultimately, the synergy between a highly skilled staff and optimized production processes allows the firm to achieve its financial targets and sustain a reputation for reliability and quality in the regional supply chain.

Finally, Programme Manager at Bakhresa Grain milling (Rwanda) Ltd responded that “Strategic investments in continuous staff training and upskilling programs have directly and visibly influenced our plant’s production efficiency and product quality standards over the past two years. By routinely upskilling our millers and floor operators on advanced milling technologies such as systems from Buhler AG we have successfully narrowed technical skill gaps and minimized human error on the production line. Consequently, this continuous capability building directly translates into higher-grade flour outputs, reduced machine downtime, and superior overall productivity performance.”

Siswanto (2023) suggested that diverse training types including on-the-job and technological training directly increase employee morale and job satisfaction. Also, Olise, et al. (2025) found that training in manufacturing settings significantly mitigates operational risks. By focusing on technical skill mastery and precision, trained employees contribute to a marked reduction in production defects and safety incidents. This alignment with quality standards ensures that labor-intensive processes remain reliable even as companies integrate more automated systems. Finally, Quansah, et al. (2022) highlighted training as a strategic tool for accelerated adaptation to global business dynamics and new production software. The findings showed that when training is data-driven and tailored to actual job requirements, companies can reduce the time-to-competency for operators handling sophisticated machinery

Table 5: Descriptive Statistics on “Effect of employee’s retaining on the performance of Bakhresa Grain milling (Rwanda) Ltd”

	N	Mean	Std. Deviation
In a 24/7 milling environment, experienced technicians and millers can quickly troubleshoot machinery issues, preventing costly production halts	191	4.87	.421
Long-term lab technicians and quality control officers master the specific chemical and physical standards of "Azam Flour.	191	3.82	.393
Retaining senior staff ensures that specialized knowledge such as the unique calibration of the plant's European milling machinery remains within the company rather than being lost to competitors.	191	4.94	.443
By lowering turnover, Bakhresa saves significant capital that would otherwise be spent on intensive safety and technical training for new hires	191	4.71	.370
Stable logistics and warehouse teams develop a muscle memory for the Kigali Special Economic Zone’s distribution routes and inventory systems	191	4.88	.332
Valid N (listwise)	191		

Source: Primary data (2026)

Table 5 indicates that “By lowering turnover, Bakhresa saves significant capital that would otherwise be spent on intensive safety and technical training for new hires” responded at very highest mean and the responses were homogeneous (mean= 4.71, SD=.370), and item 1 indicates that “ In a 24/7 milling environment, experienced technicians and millers can quickly troubleshoot machinery issues, preventing costly production halts” responded at very highest mean and the responses were homogeneous (mean= 4.87, SD=.421), item 3 indicates that “ Retaining senior staff ensures that specialized knowledge such as the unique calibration of the plant's European milling machinery remains within the company rather than being lost to competitors” responded at very highest mean and the responses were homogeneous (mean= 4.94, SD=.443), however item 2 indicates that “Long-term lab technicians and quality control officers master the specific chemical and physical standards of "Azam Flour” responded at moderate mean and responses were also heterogeneous (mean= 3.82, SD=.393). Therefore, the successful retention of staff directly translates into superior organizational performance by stabilizing production cycles and enhancing the brand’s market reliability. When a manufacturing firm like Bakhresa maintains a veteran workforce, it experiences significantly fewer production bottlenecks and safety incidents, leading to a higher Return on Assets (ROA) through optimized machinery utilization. Furthermore, high retention rates foster a culture of mentorship where senior technicians pass down efficient grain-handling techniques to junior staff, ensuring consistent product quality that meets Rwanda’s rigorous food safety standards.

Finally, Head of Human Capital, Bakhresa Grain Milling (Rwanda) Ltd responded that “Our current strategic human resource planning (SHRP) framework actively addresses the critical risk of "brain drain" and the sudden loss of key technical personnel through competitive compensation benchmarking, structured individual development plans, and targeted employee engagement initiatives. By fostering a positive work environment and clear pathways for career progression, we successfully retain our specialized talent pool, which prevents institutional knowledge loss and safeguards our competitive advantage in the Rwandan grain milling market.”

According to Palomäki (2025) found that retaining talent leads to substantial cost savings by reducing recruitment and onboarding expenditures. The manufacturing sector is particularly sensitive to these costs due to the high price of specialized technical training and certifications. By maintaining a stable workforce, companies can redirect capital away from constant hiring cycles and toward technological upgrades and development, directly improving their bottom line. Moon, et al. (2022) revealed that firms with lower turnover rates report fewer product defects and higher customer satisfaction levels. This is because seasoned employees are better equipped to identify subtle production flaws and suggest incremental process improvements that keep the company competitive. Finally, Almerri (2023) highlighted a strong culture of employee retention fosters enhanced organizational morale and collaboration, which are vital for meeting complex production targets. When staff members feel secure in their roles, they are more likely to engage in organizational citizenship behaviors, such as mentoring junior staff and collaborating across departments.

Table 6: Descriptive Statistics on “Performance of Bakhresa Grain milling (Rwanda) Ltd”

	N	Mean	Std. Deviation
Workforce productivity has improved over time	191	4.96	.426
The company’s profitability has increased due to effective HR planning	191	4.67	.488
Employees are more engaged in their work	191	4.76	.437
SHRP practices have contributed to better organizational performance	191	4.76	.333
Overall, company’s performance has improved between 2020–2025	191	4.80	.414
Valid N (listwise)	191		

Source: Primary data (2026)

Table 6 indicates that “Workforce productivity has improved over time” responded at very highest mean and the responses were homogeneous (mean= 4.96, SD= .426), and item 3 indicates that “ The company’s profitability has increased due to effective HR planning” responded at very highest mean and the responses were homogeneous (mean= 4.67, SD= .488), also item 4 indicates that “ SHRP practices have contributed to better organizational performance” responded at very highest mean and the responses were homogeneous (mean= 4.76, SD= .437), furthermore item 3 indicates that “ Employees are more engaged in their work” responded at highest mean and responses were also homogeneous (mean=4.76, SD= .333). Therefore, Bakhresa Rwanda has not only created hundreds of direct jobs but also stimulated the midstream value chain by providing predictable demand for logistics providers and wholesalers. Its success is further evidenced by its ability to navigate the complex regulatory and intellectual property landscape of the East African Community, successfully defending its brand integrity in local courts against trademark infringements. Furthermore, the company’s focus on fortified products aligns with national food security and nutrition strategies, making it a

strategic partner for the Rwandan government in enhancing the dietary standards of the population.

Finally, Human Resources Manager at Bakhresa Grain Milling (Rwanda) Ltd said that “Overall, integrating strategic human resource planning into our core business strategy has transformed our workforce from a routine administrative function into a core driver of organizational resilience and market competitiveness. By synchronizing forecasting, proactive recruitment, continuous training, and robust retention practices, Bakhresa Grain Milling (Rwanda) Ltd bridges the gap between corporate goals and shop floor realities, ensuring long-term operational success despite rising regional demand and evolving industry complexities.”

4.3 Inferential Statistics

Inferential statistics assist in the process of providing explanations for events or phenomena to researchers. Furthermore, ANOVA tests, coefficient correlations, and model summaries were covered in this section.

Table 7: Correlations

		Performance of Bakhresa Grain milling (Rwanda) Ltd	Employee’s forecasting	Employee’s recruiting	Employee’s training	Employee’s retaining
Performance of Bakhresa Grain milling (Rwanda) Ltd	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	191				
Employee’s forecasting	Pearson Correlation	.632	1			
	Sig. (2-tailed)	.068				
	N	191	191			
Employee’s recruiting	Pearson Correlation	.800**	.316	1		
	Sig. (2-tailed)	.010	.407			
	N	191	191	191		

Employee's training	Pearson Correlation	.478	.189	.598	1	
	Sig. (2-tailed)	.193	.626	.089		
	N	191	191	191	191	
Employee's retaining	Pearson Correlation	.632	.500	.791*	.189	1
	Sig. (2-tailed)	.068	.170	.011	.626	
	N	191	191	191	191	191

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

According to Pearson's correlation coefficient theory, Table 7 shows that when performance of Bakhresa Grain milling (Rwanda) Ltd actually changed at a rate of 1, the employee's forecasting fluctuated at 0.632 therefore this means that the two variables are strongly correlated. In addition, when employee's recruiting also changed by 0.800, performance of Bakhresa Grain milling (Rwanda) Ltd actually changed at a rate of 1, also this means that the two variables are strongly correlated. In short, there is a fairly strong positive correlation between the three variables.

In short, there is a fairly strong positive correlation between the three variables. Aryandaru, et al. (2022) highlighted

that SHRP significantly improves patient and customer satisfaction. In sector-specific studies, such as those conducted in hospitals, well-aligned HR strategies resulted in a 43% improvement in performance outcomes compared to traditional administrative approaches. Furthermore, Arhinful, et al. (2026) suggested that strategic recruitment and robust performance management systems lead to better service delivery and higher satisfaction scores from the people the organization serves. Finally, Sharma, et al. (2026) show that SHRP enhances employee engagement and motivation, which function as mediators for higher performance.

Table 8: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.775 ^a	.600	.200	.447

a. Predictors: (Constant), Employee's retaining, Employee's forecasting, Employee's recruiting, Employee's training

From the Table 8 above, R is the correlation coefficient which shows the relationship between the study variables, from the findings shown in the table below there was a positive relationship between the study variables as shown by 0.600 at the 1% significance level. Furthermore, the Adjusted R squared is the coefficient of determination which tells us the variation in the dependent variable due to changes in the independent variables, from the findings

in the table above the value of adjusted R squared was 0.200 which is an indication that there was variation of 20% on performance of Bakhresa Grain milling (Rwanda) Ltd due to changes in employee's retaining, employee's training, employee's forecasting and employee's recruiting at 95% confidence interval. This is an indication that 44.7% of the changes in performance could be account for by the independent variables

.Table 9: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1.200	4	.300	1.500	.001 ^b
	Residual	.800	186	.200		
	Total	2.000	190			

a. Dependent Variable: Performance of Bakhresa Grain milling (Rwanda) Ltd

b. Predictors: (Constant), Employee's retaining, Employee's forecasting, Employee's recruiting, Employee's training

If P-value < 5% -Model fit

If P-value > 5% -Model not fit

Conclude: The model is fit to predict the study variables because P value < 0.05 or 5%.

Table 10: Coefficients

Model		Unstandardized		Standardized	t	Sig.	Collinearity	
		Coefficients		Coefficients			Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	7.200	3.639		1.979	.119		
	Employee's forecasting	.200	.490	.200	.408	.000	.417	2.400
	Employee's training	.200	1.200	.133	.167	.006	.156	6.400
	Employee's recruiting	.531	.832	.000	.000	.000	.321	3.111
	Employee's retaining	.162	.632	.882	1.581	.001	.321	3.111

a. Dependent Variable: Performance of Bakhresa Grain milling (Rwanda) Ltd

From the regression equation above, it was found that holding all strategic human resource planning practices to a constant zero, performance of Bakhresa Grain milling (Rwanda) Ltd was 720 percent, a unit increase in the use of employee's forecasting would lead to increase the performance of Bakhresa Grain milling (Rwanda) Ltd at 20%, a one percent increase in the use of employee's recruiting would lead to an increase performance of Bakhresa Grain milling (Rwanda) Ltd at 53.1%, a one percent increase in the use of employee's training would lead to an increase performance of Bakhresa Grain milling (Rwanda) Ltd at 200%, furthermore, a one percentage increase in the use of employee's retaining would lead to 16.2% increase of performance of Bakhresa Grain milling (Rwanda) Ltd.

Overall, the employee's recruiting had the greatest effect on performance of Bakhresa Grain milling (Rwanda) Ltd, followed by both employee's forecasting and employee's

retaining and last point was employee's training. At 5% level of significance and 95% level of confidence, employee's training had 0.006 level of significance; employee's forecasting also had a 0.000 level of significance, employee's recruiting had 0.000 level of significance and finally employee's retaining had 0.001 level of significance. Therefore, all the variables were significant ($p < 0.05$).

The multiple regression models for this research can be stated as:

$$Y = 7.200 + .200X_1 + .200X_2 + .531X_3 + .162X_4 + \epsilon$$

The above equation is our final estimated equation which shows the extent to which each independent variable affects the dependent variable as already explained in the interpretation and analysis above. Furthermore, the results from the VIF Test revealed that there is a moderate

correlation between the three given predictor variables (including resource planning, employee’s recruiting , and capacity building) and other predictor variables in the model because the VIF Test results are varying between 1

and 5. Moreover, a value of 6.400 has a greater value, which is more than 5, which indicates a potentially severe correlation between a given predictor variable and other predictor variables in the model.

Table 11: Hypotheses summary results

	P-value	Decision
H01: There is no significant effect of employee’s forecasting on the performance of Bakhresa Grain milling (Rwanda) Ltd.	0.000	Rejected
H02: There is no significant relationship between employee’s recruiting and performance of Bakhresa Grain milling (Rwanda) Ltd.	0.006	Rejected
H03: There is no significant effect of employee’s training on the performance of Bakhresa Grain milling (Rwanda) Ltd.	0.000	Rejected
H04: There is no significant effect of employee’s retaining on the performance of Bakhresa Grain milling (Rwanda) Ltd.	0.001	Rejected

The results of the hypotheses testing in Table 11 provide significant overviews of the effect of strategic human resource planning on performance of Bakhresa Grain milling (Rwanda) Ltd in rural areas in Rwanda. Each null hypothesis (H01, H02, H03 and H04) has been rejected ($p < 0.05$), indicating strong evidence against the idea that these strategic human resource planning practices have no significant effect on performance of Bakhresa Grain milling (Rwanda) Ltd in rural areas in Rwanda. Specifically, employee’s forecasting, employee’s training, employee’s recruiting as well as employee’s retaining activities all demonstrate a significant effect on performance of Bakhresa Grain milling (Rwanda) Ltd. These findings emphasize the critical effect of strategic human resource planning (SHRP) on organizational performance at Bakhresa Grain milling (Rwanda) Ltd generally.

5. Conclusion and Recommendations

5.1 Conclusion

The study concluded that the effective workforce forecasting serves as a proactive planning tool that aligns labor supply with the specific production cycles of the milling industry. By predicting future personnel needs based on market demand and seasonal grain harvests, the company avoids the operational inefficiencies associated with both labor shortages and excessive staffing levels. This strategic alignment ensures that production targets are met consistently without incurring unnecessary wage expenditures, thereby stabilizing the firm’s bottom line and overall operational efficiency.

Furthermore, a rigorous and merit-based recruitment process is fundamental to securing high-caliber technical talent. By attracting individuals whose skills and professional values match the specialized needs of food processing, Bakhresa reduces the initial learning curve and the likelihood of early turnover. A successful recruitment strategy ensures that the workforce is composed of competent professionals capable of maintaining strict safety and quality standards, which directly enhances the firm’s market reputation and service delivery reliability.

Regarding the third objective based on the effect of employee training, leading to the conclusion that continuous professional development is essential for maintaining a competitive edge in a technology-driven manufacturing environment. Training programs enable staff to master complex industrial machinery and stay updated on evolving food safety regulations. This enhancement of human capital leads to measurable improvements in production precision, a reduction in costly machinery downtime, and an overall increase in the quality of the finished wheat products. Consequently, investing in the technical skills of the workforce acts as a primary driver for innovation and long-term institutional growth.

Finally, high retention rates are critical for preserving institutional memory and operational continuity. Retaining experienced staff members ensures that vital tacit knowledge such as specialized milling techniques and logistical nuances of the Rwandan market remains within the organization. This stability fosters a collaborative workplace culture and reduces the significant costs and disruptions associated with frequent hiring and onboarding. By maintaining a veteran workforce, the

company achieves more resilient production cycles and a more stable internal environment, ultimately strengthening its position within the regional milling sector.

5.2. Recommendations

Based on the study findings and conclusions, practical recommendations are proposed to strengthen the identified practices:

1. Bakhresa Grain milling (Rwanda) should implement advanced predictive analytics software to better align staffing levels with seasonal grain supply and market demand fluctuations.
2. Bakhresa Grain milling (Rwanda) should strengthen the partnership with Rwandan technical vocational colleges to create a direct pipeline for highly skilled milling and laboratory technicians.
3. Bakhresa Grain milling (Rwanda) should increase the frequency of specialized certifications in modern food safety and quality management systems to maintain high standards in the East African milling industry.
4. Bakhresa Grain milling (Rwanda) should design and implement a performance-based incentive scheme that rewards long-term employees for operational consistency and process improvements.

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