



Effect of Strategic Human Resource Planning on Organizational Performance in Rwanda: A Case of RwandAir

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Abstract: *This study assessed the effect of strategic human resource planning on organizational performance at RwandAir in Kigali, Rwanda. It used a descriptive and correlational design. The target population was 1,325 employees, from whom 307 respondents were determined with the Yamane formula and selected purposively. Data were collected with a questionnaire, an interview guide and documentary review, and analysed in SPSS version 26 using means, standard deviations, Pearson correlation and multiple regression. The four planning practices jointly explained 43.2% of the variance in performance ($R = .657$, $R^2 = .432$). Predictive employee training ($B = .451$, $p < .001$), predictive workforce forecasting ($B = .428$, $p = .001$), strategic talent sourcing ($B = .306$, $p = .006$) and performance-linked employee retention ($B = .376$, $p = .028$) each had a positive, statistically significant effect, although retention showed no significant bivariate correlation with performance. The study concluded that strategic human resource planning contributes to the airline's performance. It recommends that RwandAir invest in workforce analytics, build an employer brand and partnerships with aviation training institutions, adopt competency-based training, and tie rewards and career paths to measured performance.*

Keywords: *Forecasting, Sourcing, Training, Retention, Performance, RwandAir*

How to cite this work (APA):

Uwiringiye, R. (2026). Effect of Strategic Human Resource Planning on Organizational Performance in Rwanda: A Case of RwandAir. *Journal of Research Innovation and Implications in Education*, 10(4), 256 – 266. <https://doi.org/10.59765/ht4ev>

1. Introduction

Organizations increasingly treat workforce planning as a strategic function and not only an administrative one. Strategic human resource planning (SHRP) is the process of forecasting the number and quality of employees that an organization will need and of closing the gap between that need and the existing workforce (Armstrong & Taylor, 2023). Bahiroh (2024) maintains that aligning workforce forecasting, talent management and succession planning strengthens organizational stability, employee engagement and adaptability in volatile markets. Research from China takes the same direction: Yu, Yuan, Han, Li and Li (2022) examined the impact of strategic human resource management on organizational resilience, and Wang and Zhang (2026) discuss its role in driving organizational performance and employee engagement. In a systematic review of 43 quantitative studies, Sinisterra, Peñalver and Salanova (2024) found

that talent management practices raise employee engagement and reduce turnover intention.

The stakes are higher in aviation, where airlines depend on scarce, licensed and safety-critical staff. Mizrak (2023) analysed airline cases and identified recruitment practices, leadership development, employee engagement and technology integration as the main approaches through which carriers address their human resource challenges. In a study of Bangkok Airways after the COVID-19 crisis, Charernnit and Treruttanaset (2023) concluded that the airline should give priority to a human resource information system as the basis of strategic human resource management and competitive advantage.

Across Africa, the growth of the air transport market is held back by gaps in skills, competencies and training capacity (Samunderu, 2024). Townes, Marange and Maleka (2025) report that South African organizations rely on competency-based interviews, psychometric

assessments and reference checks, yet still face skills shortages in their candidate pools. In Nigeria, human resource planning has been positively associated with performance at the Nigeria Social Insurance Trust Fund (Adejuge & Adejuge, 2025), and Adagbabiri and Okolie (2020) related human resource management practices to organizational performance in the oil and gas industry. In Tanzanian public universities, human resource strategies explained 65.4% of the variance in the implementation of corporate strategic plans (Shilling & Mhame, 2025). In Ethiopia, human resource analytics improved organizational performance when it was aligned with organizational strategy (Tessema, Yang & Chen, 2025). Closest to the present study, Roba (2026) surveyed 360 managers in Kenya's 60 licensed aviation firms and found that SHRP significantly influenced competitive advantage ($\beta = .615, p < .001$), accounting for 37.4% of its variance.

Evidence from Rwanda comes mainly from outside aviation. Sadamu, Murenzi, Ruhumuriza, Ingabire and Niyobiringiro (2025) found that recruitment and selection, compensation and rewards, and training and development together explained about 79% of the variation in the performance of public institutions in Muhanga District. Sikubwabo (2024) reported that strategic planning, innovation and leadership explained 62% of the variance in the performance of private construction firms. Research on RwandAir itself has examined other determinants of performance, such as project communication management (Muzungu & Ngabonziza, 2024).

RwandAir, the national airline, has expanded its fleet and route network, but sustaining performance remains a human resource challenge. During the post-pandemic recovery in 2022, the airline's personnel expenses rose by nearly 15%, driven largely by the cost of recruiting and retraining specialized technical staff (Deloitte, 2022). Only 35% of the general workforce felt that training programmes adequately addressed digital transformation requirements (RwandAir, 2023). By early 2025, voluntary turnover among highly skilled personnel such as flight engineers and senior cabin crew had reached 18%, with replacement and onboarding costs estimated at USD 1.2 million in a single fiscal year (National Institute of Statistics of Rwanda, 2025).

The study gap is threefold. First, the regional and national evidence reviewed above concerns public institutions, universities, construction firms and, in one case, Kenyan aviation firms; none of it measures the performance of an airline in Rwanda. Second, earlier work treats human resource planning as a single construct, so the separate contributions of predictive workforce forecasting, strategic talent sourcing, predictive employee training and performance-linked employee retention are unknown. Third, findings on the link between human resource planning and firm performance remain mixed, and earlier studies often do not state how firms were selected, cover short periods and rely on small samples. The present study is justified

on practical and scholarly grounds. RwandAir's management needs to know which planning practices are most strongly associated with performance in order to direct investment in forecasting, sourcing, training and retention. Regulators and policymakers concerned with aviation workforce development need evidence on skills gaps and training needs. Researchers need airline-level data from an emerging economy.

The study therefore assessed the effect of SHRP on organizational performance at RwandAir over the period 2020–2025. It was guided by four research questions derived from its specific objectives: (1) What is the effect of predictive workforce forecasting on RwandAir's performance? (2) What is the effect of strategic talent sourcing on RwandAir's performance? (3) What is the effect of predictive employee training on RwandAir's performance? (4) What is the effect of performance-linked employee retention on RwandAir's performance? A corresponding null hypothesis of no significant effect was tested for each question at the 5% level of significance.

2. Literature Review

2.1 Theoretical Review

Three theories anchored the study. Strategic contingency theory, proposed by Hickson, Hinings, Lee, Schneck and Pennings (1971), explains power within an organization by the capacity of its subunits to cope with critical uncertainties. Applied to human resource planning, it implies that no single set of practices suits every organization: hiring, training and retention have to fit the contingencies that the organization faces, which for RwandAir include fleet growth, new routes and the demands of a hub operation. The resource-based view holds that sustained competitive advantage comes from resources that are valuable, rare, imperfectly imitable and non-substitutable (Barney, 1991). Licensed pilots, engineers and experienced cabin crew meet these conditions in a region where such skills are scarce, which makes their sourcing and retention a strategic matter. Human capital theory treats employees' knowledge, skills, education and experience as capital in which a firm invests to raise productivity (Sun & Wang, 2024), and it distinguishes general skills, which transfer between employers, from firm-specific skills such as company maintenance and safety procedures. Together the three theories predict that planning practices which fit the airline's circumstances, secure scarce talent and build its skills will be associated with better performance.

2.2 Predictive Workforce Forecasting and Organizational Performance

Predictive workforce forecasting uses historical data and analytics to anticipate labour demand and supply so that staffing matches operational needs. Rahaman and Bari (2024) examined the integration of predictive analytics

into strategic workforce planning in the energy and telecommunications sectors and concluded that predictive models can shape future organizational competencies and competitive advantage across industries. Lu (2022) built a human resource demand forecasting model on an improved back-propagation neural network and argued that it makes personnel forecasts more accurate and practical. According to John and Hajam (2024), predictive analytics moves human resource management from reactive to proactive planning, and Fowowe and Adedapo (2025) add that it can be used to optimize business performance and operational excellence. The African evidence is consistent: analytics improved performance in Ethiopian organizations through strategic alignment (Tessema et al., 2025), and systematic workforce planning predicted competitive advantage in Kenyan aviation firms (Roba, 2026).

2.3 Strategic Talent Sourcing and Organizational Performance

Strategic talent sourcing replaces vacancy-driven hiring with the planned identification and acquisition of people whose skills match long-term objectives. Abu-Jalil, Okour and Essbaih (2023) examined the strategic planning of human resources as a route to stronger marketing capabilities in a Jordanian design and development centre. In the airline cases analysed by Mızrak (2023), recruitment practice was one of the strategies through which carriers responded to their human resource challenges. In South Africa, Townes et al. (2025) proposed a seven-step selection framework that adds technological tools to established selection procedures. Wesonga and Van Der Westhuizen (2024), using 86 respondents selected by stratified random sampling at Maasai Mara University in Kenya, found that talent development accounted for 20.4% of the variance in organizational performance. In Rwanda, recruitment and selection was among the practices that significantly improved the performance of public institutions (Sadamu et al., 2025).

2.4 Predictive Employee Training and Organizational Performance

Predictive employee training uses performance data and skill-gap analysis to identify training needs before deficiencies affect operations. Bhatti, Soomro and Shah (2022) analysed 306 questionnaires from nurses in Pakistan and found that training content and learning style had positive and significant effects on employee performance, whereas the effect of the trainer was not significant. Davidescu, Apostu, Paul and Casuneanu (2020) showed that employee development and work flexibility were related to job satisfaction and job performance among Romanian employees. Rezaei, Khalilzadeh and Soleimani (2021), with 108 supervisors and managers of a steel plant in Kabul, found that knowledge management affected organizational performance both directly and through human capital. In

aviation, Ziakkas, Suckow and Pechlivanis (2022) describe the implementation of a competency-based training and assessment framework in manpower planning. In Africa, skills and training deficits remain a major obstacle to the development of air transport (Samunderu, 2024).

2.5 Performance-Linked Employee Retention and Organizational Performance

Performance-linked retention ties rewards, recognition and career opportunities to measured contribution so that the most productive employees stay. Pratheesha and Shijin (2025), with data from 150 staff of self-financing colleges in Kerala, reported a strong positive correlation between retention and effective financial management, timely salary payment and performance-based incentives. Choudhary (2025) describes compensation as a catalyst for employee retention and organizational sustainability in private universities. Salunkhe, Jain, Hinge and Boralkar (2024) found that training satisfaction, performance appraisal satisfaction, pay satisfaction and opportunities for development positively influenced work engagement among information technology employees. Paroli (2024) concluded from a qualitative study that strategic planning in human resource management, from mission formulation to performance review, supports the achievement of organizational objectives. Commitment in an airline workforce has also been studied by Järvinen Presley (2024), who examined employees of differing tenure at Finnair.

2.6 Summary of the Literature and Gap

The reviewed studies support a positive association between human resource planning practices and organizational outcomes, but they leave a clear gap. Most were conducted in health, education, manufacturing, public administration and information technology. The aviation studies are case-based (Mızrak, 2023; Charernnit & Treruttanaset, 2023) or measure competitive advantage in another country (Roba, 2026). No study reviewed tested the four planning practices together against the performance of an airline in Rwanda. The present study addresses that gap.

3. Methodology

3.1 Research Design

The study adopted a descriptive and correlational research design. The descriptive component used a structured questionnaire and interviews to profile the state of SHRP at RwandAir. The correlational component used Pearson correlation and multiple regression to estimate the strength and direction of the relationship between the four planning practices and organizational performance.

3.2 Population

The target population was 1,325 employees at RwandAir's headquarters and operational units at Kigali International Airport, as recorded by the airline's Human Resources Department in 2026. They worked in nine departments: Flight Operations (237), In-flight Services (344), Maintenance and Engineering (197), Ground Services (303), Commercial (151), Accounting (19), Human Resources and Administration (9), Safety and Quality (42), and Information Technology and Digital (23).

3.3 Sampling Procedures

The sample size was determined with the formula of Yamane (1967), $n = N / (1 + Ne^2)$, at a 5% margin of error: $n = 1,325 / (1 + 1,325 \times 0.05^2) = 307$. The 307 respondents were selected through purposive sampling on the ground that they were knowledgeable about the link between human resource planning and the airline's performance. Three key informants holding human resource and administrative positions were interviewed.

3.4 Research Instruments

Primary data were collected with a self-administered questionnaire of closed-ended items. The first section recorded age, gender, education level and years of experience. Five further sections, each with five items rated on a five-point scale from 1 (*strongly disagree*) to 5 (*strongly agree*), covered predictive workforce forecasting, strategic talent sourcing, predictive employee training, performance-linked employee retention and the performance of RwandAir. An interview guide was used with the key informants, and secondary data were taken from the airline's reports and other documents. The questionnaire was piloted with 31 employees, equal to 10% of the sample, to check the clarity of the items and the time needed to complete them.

3.5 Validity

Four research experts assessed the relevance of the questionnaire items to the study objectives. The content validity index was computed as the number of items rated relevant divided by the total number of items: $CVI = 25/29 = 0.86$. This exceeded the 0.60 criterion adopted in the study, and the instrument was considered valid.

3.6 Reliability

Internal consistency was tested with Cronbach's alpha in SPSS, and a coefficient of at least 0.70 was taken as acceptable (Amin, 2005). The coefficients were 0.89 for workforce forecasting, 0.71 for strategic talent sourcing, 0.92 for predictive employee training, 0.84 for performance-linked employee retention and 0.79 for organizational performance. All scales were therefore considered reliable.

3.7 Data Analysis Plan

Data were processed in the Statistical Package for the Social Sciences (SPSS), version 26. Descriptive statistics (frequencies, percentages, means and standard deviations) summarized the respondents' profile and their ratings. Pearson correlation assessed the bivariate relationships among the variables. Multiple linear regression estimated the model $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$, where Y is the performance of RwandAir, X_1 is workforce forecasting, X_2 is strategic talent sourcing, X_3 is predictive employee training and X_4 is performance-linked employee retention. Hypotheses were tested at the 5% level of significance. Interview responses were summarized by theme and reported alongside the quantitative results.

3.8 Ethical Considerations

The questionnaire carried only an identification number and no information that could identify a respondent. Respondents were told that participation was voluntary, that they could withdraw at any time, that their answers would be kept confidential and used only for the study, and that taking part would not affect their standing at RwandAir.

4.1 Response Rate, Respondents and the Overall Model

All 307 questionnaires were returned, a response rate of 100%. Table 1 shows that the largest age group was 26–35 years (32.2%), that women were a slight majority (52.1%), that 88.2% of respondents held a bachelor's or master's degree, and that 62.6% had worked for the airline for four years or more.

Table 1: Demographic Profile of Respondents

Characteristic	Category	Frequency	Percentage
Age	18–25 years	50	16.3
	26–35 years	99	32.2
	36–45 years	83	27.0
	Above 45 years	75	24.5
Gender	Male	147	47.9
	Female	160	52.1
Education level	Secondary level	36	11.7
	Bachelor's degree	178	57.9
	Master's degree	93	30.3
Years of experience	Below 1 year	48	15.6
	1–3 years	67	21.8
	4–6 years	123	40.1
	Above 6 years	69	22.5

Note. $N = 307$ for each characteristic.

Table 2 presents the ratings of the dependent variable. Respondents agreed or strongly agreed with all five statements about the airline's performance, with the

highest means for its recognition as the best regional airline in Africa ($M = 4.89$) and for the codeshare and loyalty integration with Qatar Airways ($M = 4.88$).

Table 2: Descriptive Statistics for the Performance of RwandAir

Statement	N	M	SD
RwandAir named as the Best Regional Airline in Africa at the 2025 World Airline Awards by Skytrax, cementing its reputation for service excellence	307	4.89	.437
RwandAir successfully expanded its fleet to 16 aircraft in 2025, including the acquisition of two Boeing 737-800s and a wide-body Airbus A330-200	307	4.07	.264
RwandAir finalized a landmark codeshare and loyalty integration with Qatar Airways, providing passengers seamless access to over 160 global destinations	307	4.88	.399
RwandAir launched new strategic routes to Zanzibar and Mombasa in late 2025, while ratifying air service agreements with 12 countries including France and Canada	307	4.04	.190
Recently, RwandAir becomes the first African airline to achieve Diamond status in the APEX Health Safety audit, the highest attainable global rating for hygiene and safety	307	4.58	.521

Table 3 gives the correlations among the study variables. Performance correlated positively and significantly with workforce forecasting ($r = .472, p < .001$), predictive employee training ($r = .446, p < .001$) and strategic talent sourcing ($r = .308, p = .005$). Its correlation with

performance-linked employee retention was positive but not significant ($r = .152, p = .175$). Correlations among the four predictors were low, the largest being that between workforce forecasting and predictive employee training ($r = .295$).

Table 3: Pearson Correlations Among the Study Variables

Variable	1	2	3	4	5
1. Performance of RwandAir	—				
2. Workforce forecasting	.472**	—			
3. Strategic talent sourcing	.308**	.204	—		
4. Predictive employee training	.446**	.295**	-.064	—	
5. Performance-linked employee retention	.152	-.031	.076	-.095	—

Note. $N = 307$. **Correlation is significant at the .01 level (2-tailed).

Tables 4 and 5 report the multiple regression. The model was statistically significant, $F(4, 302) = 14.448, p < .001$, and the four practices together explained 43.2% of the

variance in performance ($R = .657, R^2 = .432$, adjusted $R^2 = .402$). Each practice had a positive and significant coefficient, so the four null hypotheses were rejected.

The estimated equation was $Y = -.512 + .428X_1 + .306X_2 + .451X_3 + .376X_4$. The constant was not significant ($p = .055$). Judged by the standardized coefficients, predictive employee training made the largest unique contribution ($\beta = .385$), followed by workforce forecasting ($\beta = .323$),

strategic talent sourcing ($\beta = .252$) and performance-linked employee retention ($\beta = .196$). Tolerance values above .85 and variance inflation factors below 1.2 indicate that multicollinearity was not a concern.

Table 4: Analysis of Variance for the Regression Model

Source	Sum of squares	df	Mean square	F	p
Regression	6.047	4	1.512	14.448	< .001
Residual	7.953	302	.105		
Total	14.000	306			

Note. Dependent variable: performance of RwandAir. $R = .657$, $R^2 = .432$, adjusted $R^2 = .402$, standard error of the estimate = .323.

Table 5: Regression Coefficients for the Predictors of the Performance of RwandAir

Predictor	B	SE	β	t	p	Tolerance	VIF
(Constant)	-.512	.263		-1.947	.055		
Workforce forecasting	.428	.123	.323	3.465	.001	.859	1.165
Strategic talent sourcing	.306	.109	.252	2.308	.006	.935	1.070
Predictive employee training	.451	.107	.385	4.212	< .001	.893	1.119
Performance-linked employee retention	.376	.168	.196	2.243	.028	.931	1.020

Note. Dependent variable: performance of RwandAir. VIF = variance inflation factor.

4.2 Effect of Predictive Workforce Forecasting on RwandAir's Performance?

Table 6 shows very high agreement with all five forecasting statements, with means from 4.67 to 5.00 and standard deviations below .50. Respondents agreed most strongly that balanced workloads prevent burnout and

turnover among specialized technical personnel and pilots, and that forecasting prevents financial drain by aligning crew and ground staff levels with seasonal flight schedules.

Table 6: Descriptive Statistics for Predictive Workforce Forecasting

Statement	N	M	SD
Predictive workforce forecasting prevents RwandAir's financial drain by aligning crew and ground staff levels precisely with seasonal flight schedules	307	4.96	.190
Accurate staffing reduces RwandAir's flight delays and turnaround times at Kigali International Airport	307	4.94	.242
Balanced workloads prevent RwandAir's staff burnout and high turnover among specialized technical personnel and pilots	307	5.00	.000
Adequate staffing during peak travel periods ensures consistent service quality and shorter check-in wait times	307	4.85	.357
Data-driven insights allow RwandAir to scale human resources quickly when launching new regional or international routes	307	4.67	.474

Workforce forecasting had the strongest bivariate correlation with performance ($r = .472$, $p < .001$) and a significant regression coefficient ($B = .428$, $p = .001$): holding the other practices constant, a one-unit increase in the forecasting score was associated with a .428-unit increase in the performance score. The first null hypothesis was rejected. A human resource manager interviewed for the study explained that recruitment pipelines are synchronized with planning through real-time data analytics so that staffing needs are anticipated before gaps emerge and onboarding is timed with fleet expansion and seasonal demand. The finding agrees with Roba (2026), who found that systematic workforce

planning predicted competitive advantage in Kenyan aviation firms, and with Rahaman and Bari (2024), who regard predictive analytics as a source of future organizational competencies. It also supports the argument of Lu (2022) that better demand forecasting makes personnel decisions more accurate, and it is consistent with contingency theory, since staffing that follows flight schedules and route launches is staffing fitted to the airline's main uncertainties (Hickson et al., 1971).

4.3 Effect of Strategic Talent Sourcing on RwandAir's Performance?

Table 7 shows that respondents agreed with all five sourcing statements (means from 4.09 to 4.78).

Agreement was highest for the statement that attracting top-tier engineers and pilots ensures strict compliance with international aviation safety regulations, and lowest, though still high, for the statement that proactive sourcing lowers long-term recruitment and turnover costs.

Table 7: Descriptive Statistics for Strategic Talent Sourcing

Statement	<i>N</i>	<i>M</i>	<i>SD</i>
Identifying specialized aviation talent reduces RwandAir's technical downtime and optimizes flight scheduling	307	4.28	.454
Sourcing high-caliber cabin crew and ground staff directly enhances the passenger experience and brand loyalty	307	4.17	.380
RwandAir's proactive sourcing lowers long-term recruitment expenses and minimizes the high costs associated with employee turnover	307	4.09	.388
Attracting top-tier engineers and pilots ensures strict compliance with international aviation safety regulations	307	4.78	.524
Building a skilled, diverse workforce allows RwandAir to innovate and expand effectively within the regional market	307	4.47	.550

Strategic talent sourcing correlated significantly with performance ($r = .308, p = .005$) and remained significant in the regression ($B = .306, p = .006$), so the second null hypothesis was rejected. The human resource director described strategic sourcing as part of the airline's effort to secure and keep high performers. The result is in line with Sadamu et al. (2025), who found that recruitment and selection improved the performance of public institutions in Rwanda, and with Wesonga and Van Der Westhuizen (2024), who attributed 20.4% of performance variance to talent development. It also relates to the finding of Townes et al. (2025) that skills shortages in candidate pools remain a central challenge in selection. From the resource-based view, pilots and

engineers who are scarce in the region are resources that competitors cannot easily replicate, which explains why their acquisition is associated with performance (Barney, 1991).

4.4 Effect of Predictive Employee Training on RwandAir's Performance

Table 8 shows agreement with all five training statements (means from 4.12 to 4.72). The highest mean was for predictive maintenance training that reduces aircraft downtime by preparing technicians for upcoming fleet technologies.

Table 8: Descriptive Statistics for Predictive Employee Training

Statement	<i>N</i>	<i>M</i>	<i>SD</i>
Anticipating future flight demands allows for precise training of pilots and cabin crew, reducing costly standby times and operational delays	307	4.22	.418
Identifying potential skill gaps before they lead to incidents ensures RwandAir maintains rigorous international aviation safety standards	307	4.12	.331
RwandAir's predictive maintenance training for engineers reduces aircraft downtime by ensuring technicians are skilled in upcoming fleet technologies	307	4.72	.530
Equipping ground and in-flight staff with advanced service skills based on passenger trend data boosts brand reputation and repeat bookings	307	4.55	.327
Targeted professional development pathways increase employee engagement and retention, lowering the high costs of frequent recruitment	307	4.41	.494

Predictive employee training was significantly correlated with performance ($r = .446, p < .001$) and had the largest coefficient in the model ($B = .451, \beta = .385, p < .001$). The third null hypothesis was rejected. The head of the central secretariat reported that the airline has introduced standardized training frameworks benchmarked against global aviation practice so that staff acquire the specialized skills that international operations require. The result supports Bhatti et al. (2022), who found that

training content and learning style improved employee performance, and Rezaei et al. (2021), for whom human capital carries part of the effect of knowledge practices on organizational performance. It is consistent with the competency-based approach to aviation manpower planning described by Ziakkas et al. (2022) and with human capital theory, which treats training as an investment that raises productivity (Sun & Wang, 2024). Since skills and training gaps constrain African air

transport (Samunderu, 2024), it is plausible that training is the practice with the greatest unique contribution at RwandAir.

4.5 Effect of Performance-Linked Employee Retention on RwandAir's Performance

Table 9 shows agreement with all five retention statements (means from 4.19 to 5.00). Respondents

agreed most strongly that employees are motivated to provide superior customer service in order to meet the standards required for contract renewal.

Table 9: Descriptive Statistics for Performance-Linked Employee Retention

Statement	<i>N</i>	<i>M</i>	<i>SD</i>
Linking retention to performance incentivizes staff to optimize flight turnarounds and minimize technical delays	307	4.20	.401
Employees are motivated to provide RwandAir's superior customer service to meet the high standards required for contract renewal	307	5.00	.000
RwandAir's retaining top-tier pilots and engineers through performance rewards lowers the financial burden of frequent hiring and training	307	4.19	.391
A high-performing, stable workforce helps RwandAir maintain its safety ratings and prestige against regional competitors	307	4.27	.448
Merit-based retention fosters a culture of RwandAir's accountability and excellence throughout the various airline departments	307	4.47	.502

The evidence on this question is mixed. The bivariate correlation between performance-linked retention and performance was not significant ($r = .152, p = .175$), but the regression coefficient was positive and significant once the other three practices were held constant ($B = .376, p = .028$), and the fourth null hypothesis was rejected. Retention therefore appears to contribute to performance in combination with forecasting, sourcing and training, while its standardized coefficient was the smallest in the model ($\beta = .196$). The human resource director stated that the airline protects its investment in human capital through performance-linked retention frameworks that combine structured career paths and competitive compensation. The finding agrees in direction with Pratheesha and Shijin (2025), who related performance-based incentives to retention, and with Sinisterra et al. (2024), whose review showed that talent management practices, including rewards and career development, lower turnover intention through engagement. Salunkhe et al. (2024) likewise found that pay satisfaction and development opportunities raise work engagement. The weaker bivariate result suggests that retention incentives alone are not enough and that their effect depends on the other planning practices, a reading consistent with Paroli (2024), who stresses that human resource practices should be incorporated within strategic planning.

5. Conclusions and Recommendations

5.1 Conclusions

On research question 1, the study concludes that predictive workforce forecasting has a positive and significant effect on RwandAir's performance. Aligning staffing levels with flight schedules, peak periods and new routes helps the airline avoid skill shortages and maintain service reliability.

On research question 2, strategic talent sourcing has a positive and significant effect on performance. Acquiring engineers, pilots and service staff with the required competencies supports safety compliance and service quality.

On research question 3, predictive employee training has a positive and significant effect and makes the largest unique contribution of the four practices. Training that anticipates fleet technologies and service demands keeps the workforce prepared for operational change.

On research question 4, performance-linked employee retention has a positive and significant effect when considered together with the other practices, but it is not significantly related to performance on its own. Retention measures work best as part of an integrated human resource plan.

Overall, the four practices explained 43.2% of the variance in performance. The remaining variance is attributable to factors outside the model.

5.2 Recommendations

Based on the findings of this study, the following recommendations are made:

1. RwandAir should invest in human resource analytics that link flight scheduling data with workforce availability, and should set up a cross-functional team to review workload trends against operational indicators at regular intervals.
2. The airline should develop a structured employer branding strategy aimed at aviation institutes and wider aerospace talent pools, and should formalize partnerships with local and

international aviation training institutions for internships and apprenticeships.

3. The airline should adopt a competency-based training framework that uses performance data to identify individual skill gaps, supported by a digital learning management system that tracks progress against operational performance measures.
4. The airline should design a total rewards programme that ties financial and non-financial incentives to individual and team achievement in safety, punctuality and customer service, and should introduce a career path system for high-potential staff. These measures should be planned together with forecasting, sourcing and training.
5. Further research should use objective operational and financial indicators of airline performance, probability sampling and other airlines in the region to test whether these findings hold more widely.

References

- Abu-Jalil, M., Okour, M., & Essbaih, M. (2023). Strategic planning of human resources as an entrance to enhance marketing capabilities: A case study of King Abdullah II Center for Design and Development (KADDB). *Problems and Perspectives in Management*, 21(1), 362–372.
- Adagbabiri, M. M., & Okolie, U. C. (2020). Human resource management practices and organizational performance: An empirical study of oil and gas industry in Nigeria. *RUDN Journal of Public Administration*, 7(1), 53–69.
- Adejugbe, A., & Adejugbe, A. (2025). The effect of human resource planning on organizational performance: A study of Nigeria Social Insurance Trust Fund. *SSRN Electronic Journal*.
- Amin, M. E. (2005). *Social science research: Conception, methodology and analysis*. Kampala: Makerere University Printery.
- Armstrong, M., & Taylor, S. (2023). *Armstrong's handbook of human resource management practice*. (16th ed.). London: Kogan Page.
- Bahiroh, E. (2024). Examining the importance of effective human resources planning (HRP) in optimizing organizational performance. *Management Science Research Journal*, 3(4), 1–16.
- Barney, J. B. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99–120.
- Bhatti, M. K., Soomro, B. A., & Shah, N. (2022). Predictive power of training design on employee performance: An empirical approach in Pakistan's health sector. *International Journal of Productivity and Performance Management*, 71(8), 3792–3808.
- Charernnit, K., & Treruttanaset, P. (2023). Strategic human resource management in aviation industry a new normal perspective after the COVID-19 crisis: A case study of Bangkok Airways. *E3S Web of Conferences*, 389, 05015.
- Choudhary, V. (2025). Compensation as a catalyst: Exploring its impact on employee retention and organizational sustainability in private universities. *International Journal of Economic Practices and Theories*, 360–381.
- Davidescu, A. A., Apostu, S. A., Paul, A., & Casuneanu, I. (2020). Work flexibility, job satisfaction, and job performance among Romanian employees: Implications for sustainable human resource management. *Sustainability*, 12(15), 6086.
- Deloitte. (2022). *Aviation workforce recovery: Navigating the 2022 labor shortage*. Deloitte Insights.
- Fowowe, O. O., & Adedapo, A. (2025). Leveraging predictive analytics to optimize business performance and drive operational excellence. *International Journal of Computer Applications Technology and Research*, 14(2), 66–81.
- Hickson, D. J., Hinings, C. R., Lee, C. A., Schneck, R. E., & Pennings, J. M. (1971). A strategic contingencies' theory of intraorganizational power. *Administrative Science Quarterly*, 16(2), 216–229.
- Järvinen Presley, H. R. (2024). Understanding commitment among different tenured employees. Case: Finnair. Master's Unpublished Thesis, University of Vaasa, Finland.

- John, A. S., & Hajam, A. A. (2024). Leveraging predictive analytics for enhancing employee engagement and optimizing workforce planning: A data-driven HR management approach. *International Journal of Innovation in Management, Economics and Social Sciences*, 4(4), 33–41.
- Lu, X. (2022). A human resource demand forecasting method based on improved BP algorithm. *Computational Intelligence and Neuroscience*, 2022, 3534840.
- Mızrak, F. (2023). Strategies for effective human resource management in the aviation industry: A case-based analysis. *Beykoz Akademi Dergisi*, 11(2), 82–109.
- Muzungu, G., & Ngabonziza, A. (2024). Role of project communication management on the performance of airline company in Rwanda. A case of Rwandair Ltd. *Journal of Entrepreneurship & Project Management*, 8(1), 13–26.
- National Institute of Statistics of Rwanda. (2025). *Labour force survey annual report 2024/2025*. Kigali: NISR.
- Paroli, P. (2024). Implementation of strategic planning as an organizational human resources management process. *Jurnal Ekonomi*, 13(1), 1834–1841.
- Pratheesha, P., & Shijin, S. (2025). The effect of financial management in employee retention: A study in the context of self-financing colleges in Kerala. *i-manager's Journal on Economics & Commerce*, 5(2).
- Rahaman, M. A., & Bari, M. H. (2024). Predictive analytics for strategic workforce planning: A cross-industry perspective from energy and telecommunications. *International Journal of Business Diplomacy and Economy*, 3(2), 14–25.
- Rezaei, F., Khalilzadeh, M., & Soleimani, P. (2021). Factors affecting knowledge management and its effect on organizational performance: Mediating the role of human capital. *Advances in Human-Computer Interaction*, 2021, 8857572.
- Roba, A. I. (2026). Strategic human resource planning and sustainable competitive advantage in Kenya's aviation companies. *Eastern African Journal of Humanities and Social Sciences*, 5(1), 299–311.
- RwandAir. (2023). *Annual performance and sustainability report 2022–2023*. Kigali: Corporate Communications Office.
- Sadamu, F., Murenzi, P., Ruhumuriza, A., Ingabire, S., & Niyobyingiro, N. (2025). The impact of human resource management practices on public institutions' performance: Case of Muhanga District, Rwanda. *African Quarterly Social Science Review*, 2(1), 96–108.
- Salunkhe, H. A., Jain, D., Hinge, P., & Boralkar, M. (2024). Impact of human resource practice on work engagement and turnover intention in information technology companies. *SA Journal of Human Resource Management*, 22, a2723.
- Samunderu, E. (2024). Challenges and complexities affecting African air transport market development: A skills, competency, and capacity-building perspective. In *The economic effects of air transport market liberalisation: A perspective analysis of the Single African Air Transport Market (SAATM)* (pp. 499–639). Cham: Springer Nature Switzerland.
- Shillingi, V., & Mhame, M. (2025). The role of human resources strategies in the execution of strategic plans: Insights from Tanzania's public universities. *MUST Journal of Research and Development*, 6(4).
- Sikubwabo, T. (2024). Assessing the influence of strategic management strategies on organizational performance in Rwanda's private construction firms. *International Journal of Scientific Research and Management*, 12(12), 8097–8112.
- Sinisterra, L., Peñalver, J., & Salanova, M. (2024). Connecting the organizational incomes and outcomes: A systematic review of the relationship between talent management, employee engagement, and turnover intention. *Frontiers in Psychology*, 15, 1439127.
- Sun & Wang. (2024). [FULL REFERENCE REQUIRED: cited in the thesis for human capital theory but absent from its reference list]

- Tessema, S. A., Yang, S., & Chen, C. (2025). The effect of human resource analytics on organizational performance: Insights from Ethiopia. *Systems*, 13(2), 134.
- Townes, J. I., Marange, T. S., & Maleka, M. J. (2025). Exploring employee selection procedures in South African organisations. *SA Journal of Human Resource Management*, 23, a3073.
- Wang, X., & Zhang, B. (2026). The role of strategic human resource management in driving organizational performance and employee engagement. *Academic Journal of Business & Management*, 8(1), 188–197.
- Wesonga, J. N., & Van Der Westhuizen, J. (2024). Effect of talent development on organizational performance. *EUREKA: Social and Humanities*, (2), 25–37.
- Yamane, T. (1967). *Statistics: An introductory analysis*. (2nd ed.). New York: Harper and Row.
- Yu, J., Yuan, L., Han, G., Li, H., & Li, P. (2022). A study of the impact of strategic human resource management on organizational resilience. *Behavioral Sciences*, 12(12), 508.
- Ziakkas, D., Suckow, M. W., & Pechlivanis, K. (2022). The implementation of competency-based training and assessment (CBTA) framework in aviation manpower planning. *Transportation Research Procedia*, 66, 226–239.