

Strategic Vision, Resource Allocation and Modernization of Airport Security Infrastructure at Jomo Kenyatta International Airport, Kenya

Emma Chepchirchir Lagat^{1*}; Dr. Angeline Wambugu^{2*}

¹Management University of Africa, School of Management and Leadership

²PhD; Management University of Africa, School of Management and Leadership

Correspondence Author: Emma Chepchirchir Lagat^{1*}; Dr. Angeline Wambugu^{2*}

Publication Date: 2026/10/27

Abstract: Airport security infrastructure requires continuing modernization to respond to evolving security threats, technological change, and operational demands. This paper examined two strategic leadership practices strategic vision and resource allocation and their relationship with modernization of airport security infrastructure at Jomo Kenyatta International Airport (JKIA), Kenya. The paper was developed from a cross-sectional descriptive study that targeted 267 stakeholders and obtained 125 valid responses from a sample of 160, representing a 78% response rate. Data were collected using structured questionnaires and analysed using descriptive statistics, Pearson correlation, and multiple regression. Strategic vision was positively associated with modernization ($r = .601$, $p < .001$) and had a statistically significant positive coefficient in the full regression model ($B = .247$, $\beta = .197$, $p = .012$). Respondents rated the presence of a comprehensive strategic plan most highly ($M = 4.05$), while consideration of future security challenges had the lowest mean among the strategic vision items ($M = 3.63$). Resource allocation was positively correlated with modernization ($r = .488$, $p < .001$), but its unique contribution in the full model was not statistically significant ($B = .118$, $\beta = .113$, $p = .120$). Ratings were comparatively lower for investment in modern security technologies and funding for infrastructure upgrades (both $M = 3.58$). These results suggest that clear strategic direction is associated with modernization, while resource allocation may require closer attention to prioritization, coordination, and conversion of funding into operational improvements. Because the regression coefficients came from a model that also included stakeholder engagement and innovation management, they should be interpreted as adjusted associations rather than isolated two-variable effects.

Keywords: Airport Security, Infrastructure Modernization, Resource Allocation, Strategic Leadership, Strategic Vision.

How to Cite: Emma Chepchirchir Lagat; Dr. Angeline Wambugu (2026) Strategic Vision, Resource Allocation and Modernization of Airport Security Infrastructure at Jomo Kenyatta International Airport, Kenya. *International Journal of Innovative Science and Research Technology*, 11(10), 1849-1856. <https://doi.org/10.38124/ijisrt/26oct1094>

I. INTRODUCTION

Airports operate as complex systems in which physical infrastructure, security technology, personnel, and inter-agency procedures must function together. Security modernization therefore involves more than purchasing new equipment; it also requires planning, integration, maintenance, staff capability, and adaptation to emerging risks. International aviation guidance emphasizes the need for coordinated security systems and continuing attention to changing threats (International Civil Aviation Organization [ICAO], 2023). Strategic leadership can help translate these requirements into long-term priorities and investment decisions.

Strategic vision refers to the clarity of an organization's long-term direction and the extent to which leaders

communicate goals, anticipate future challenges, and align initiatives with organizational priorities. In airport security, a clear vision can guide the sequencing of modernization projects and help management align technology and infrastructure decisions with operational and security objectives. Research on strategic leadership and digital transformation similarly identifies leadership direction and organizational alignment as relevant conditions for implementing change (AlNuaimi et al., 2022; Khan et al., 2023).

Resource allocation concerns the distribution and use of financial resources, skilled personnel, technology investment, and infrastructure funding. Security modernization often requires substantial capital investment as well as recurrent expenditure on maintenance, training, and system integration. The resource-based view proposes that organizational

resources contribute to performance when they are deployed effectively and combined with relevant capabilities (Barney, 1991; Barney & Hesterly, 2021). However, funding availability alone does not guarantee successful implementation if projects are poorly prioritized or if new systems are not integrated into operations.

At Jomo Kenyatta International Airport (JKIA), Kenya's main international aviation gateway, modernization must support security effectiveness while accommodating passenger and cargo operations. The underlying project identified continuing needs relating to technological integration, infrastructure upgrading, coordination, and operational efficiency. Examining strategic vision and resource allocation is therefore useful for understanding how planning and resource decisions relate to the modernization of airport security infrastructure in this context.

➤ *Statement of the Problem*

Airport security infrastructure modernization is essential for addressing evolving security threats, improving passenger processing, and maintaining compliance with international aviation standards. At Jomo Kenyatta International Airport (JKIA), modernization requires effective strategic leadership to guide long-term security planning and ensure that financial, technological, and human resources support infrastructure development.

Despite investments in airport infrastructure, surveillance systems, screening technologies, and digital operational systems, JKIA continues to face challenges associated with passenger congestion at security checkpoints, delays in modernization projects, partial integration of security technologies, procurement inefficiencies, and coordination among security agencies (KAA, 2024; KCAA, 2024). These challenges suggest a gap between the intended modernization of airport security infrastructure and the level of integration and operational efficiency achieved.

Two strategic leadership practices are particularly relevant to this problem. Strategic vision provides direction for planning and implementing modernization initiatives, while resource allocation determines whether adequate financial resources, skilled personnel, and technological investments are available to support these initiatives. Weaknesses in either practice may contribute to delayed projects, inefficient resource utilization, and fragmented security systems.

Although previous studies have examined aviation security technologies and infrastructure development, limited empirical research has specifically assessed the relationship between strategic vision and resource allocation and the modernization of airport security infrastructure at JKIA. The study therefore examined these two practices to establish how strategic vision and resource allocation relate to the modernization of airport security infrastructure at JKIA, with the aim of generating evidence to inform strategic planning and investment decisions.

The problem addressed in this paper is the need to understand whether strategic vision and resource allocation are associated with the modernization of airport security infrastructure at JKIA. The paper focuses only on the first two specific objectives of the wider study: (1) to examine the effect of strategic vision on modernization of airport security infrastructure at JKIA; and (2) to assess the effect of resource allocation on modernization of airport security infrastructure at JKIA.

The corresponding hypotheses were:

- H₀₁: strategic vision has no statistically significant relationship with modernization of airport security infrastructure at JKIA; and
- H₀₂: resource allocation has no statistically significant relationship with modernization of airport security infrastructure at JKIA.

The paper contributes context-specific evidence for airport managers and policy stakeholders by distinguishing the role of strategic direction from the role of resource allocation. It also provides a practical basis for identifying which aspects of planning and investment respondents rated less strongly.

II. LITERATURE REVIEW

➤ *Theoretical Literature Review*

The paper is primarily anchored in Upper Echelons Theory, which proposes that organizational outcomes partly reflect senior leaders' values, experiences, interpretations, and strategic choices (Hambrick & Mason, 1984; Hambrick, 2007). Applied to airport security modernization, the theory suggests that leadership's understanding of security risks and future operational needs shapes the vision adopted, the priorities communicated, and the decisions made about infrastructure change. A clearly articulated strategic vision is one route through which leadership judgement can be translated into organizational action.

The Resource-Based View (RBV) complements this explanation by emphasizing the role of organizational resources and capabilities in supporting performance (Barney, 1991; Barney & Hesterly, 2021). Airport security modernization depends on financial resources, skilled personnel, technology, infrastructure, and the ability to combine these resources effectively. RBV is relevant to resource allocation because the value of resources depends not only on their availability but also on how they are deployed and coordinated. The two theories together support examining both strategic direction and the allocation of resources without assuming that either factor automatically produces modernization.

➤ *Strategic Vision and Airport Security Infrastructure Modernization*

Strategic vision gives an organization a shared direction for making decisions and coordinating work. In a security-sensitive environment, the vision should identify the desired future state, align modernization objectives with wider

organizational goals, and anticipate changes in threats and technology. Upper Echelons Theory provides a basis for expecting leadership priorities to shape how modernization is planned and implemented (Hambrick, 2007). Research on digital transformation also emphasizes the relationship between leadership, strategic alignment, and organizational change (AlNuaimi et al., 2022; Khan et al., 2023).

For JKIA, strategic vision was measured through five indicators: communication of the security modernization vision, a comprehensive strategic plan, consideration of future security challenges, alignment of security goals with airport objectives, and senior management commitment. These indicators cover both the formulation of strategic direction and its communication and alignment. A gap can arise when a plan exists but is not sufficiently forward-looking or is not translated consistently into decisions and implementation.

The empirical expectation is that stronger strategic vision will be positively associated with modernization because it helps management set priorities and align decisions over time. The study therefore tested H01, which stated that strategic vision had no statistically significant relationship with modernization of airport security infrastructure at JKIA.

➤ *Resource Allocation and Airport Security Infrastructure Modernization*

Resource allocation covers the adequacy and use of funds, skilled staff, technology investment, infrastructure-upgrade funding, and budget utilization. The RBV suggests that resources can support organizational outcomes when they are valuable and deployed through appropriate capabilities (Barney, 1991). In airport security, funding may be required for screening equipment, surveillance, access control, digital systems, system integration, training, and maintenance. Inadequate or poorly coordinated investment can delay implementation or leave new equipment operating alongside incompatible legacy systems.

At the same time, resources may not have a statistically distinct relationship with modernization once other

organizational practices are considered. For example, the availability of funds may be less consequential if priorities are unclear, implementation is delayed, or technology adoption is not well managed. This distinction matters for interpreting the present study because the multivariate model included strategic vision, resource allocation, stakeholder engagement, and innovation management simultaneously.

Resource allocation was measured using five indicators: adequate financial resources, sufficient skilled personnel, investment in modern security technologies, funding for infrastructure upgrades, and efficient use of allocated budgets. The empirical expectation was a positive association between resource allocation and modernization. H02 stated that resource allocation had no statistically significant relationship with modernization of airport security infrastructure at JKIA.

➤ *Research Gap and Conceptual Framework*

The project's literature review identified studies on airport digital transformation, resource allocation, and infrastructure modernization, but these areas do not always focus specifically on airport security infrastructure at JKIA. This paper addresses that contextual focus by examining strategic vision and resource allocation against the same modernization outcome. The evidence is drawn from a single airport and should not be generalized automatically to other airports.

The conceptual framework proposes two predictor variables—strategic vision and resource allocation—with modernization of airport security infrastructure as the outcome. Strategic vision is measured through vision clarity, strategic planning, future orientation, goal alignment, and leadership commitment. Resource allocation is measured through financial resources, human resources, technology investment, infrastructure funding, and budget utilization. Modernization is measured in the wider project through security technology, surveillance systems, screening efficiency, infrastructure integration, and operational efficiency.

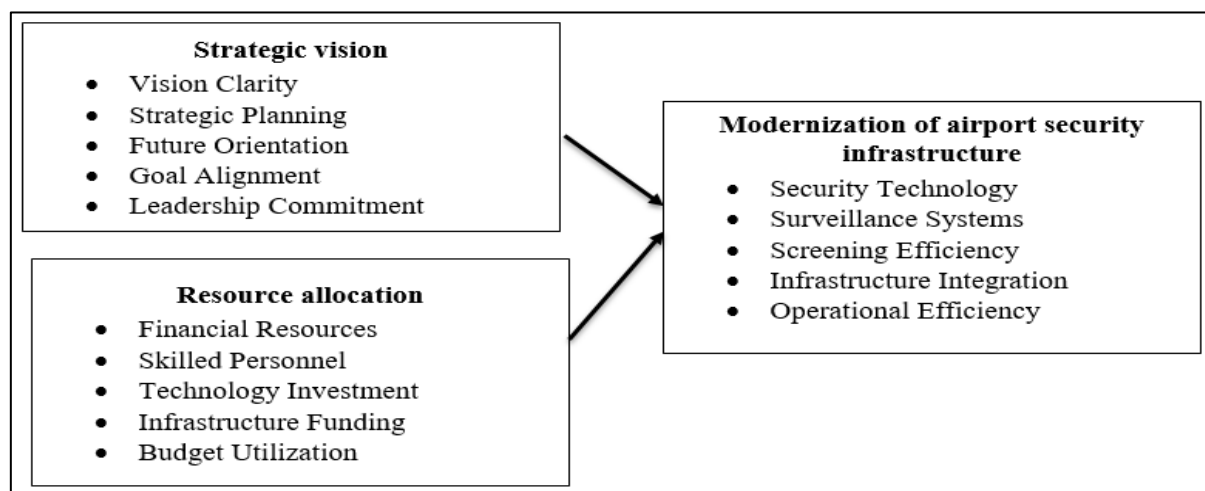


Fig 1 Conceptual Relationship: Strategic Vision → Modernization of Airport Security Infrastructure; Resource Allocation → Modernization of Airport Security Infrastructure.

III. METHODOLOGY

The wider study used a descriptive cross-sectional research design to examine strategic leadership practices and modernization of airport security infrastructure at JKIA. The target population comprised 267 stakeholders involved in airport security operations and modernization processes. A sample of 160 respondents was selected using proportionate stratified random sampling and Cochran's sample-size determination approach. Structured questionnaires were used to collect primary data. The analysis reported in the source project was based on 125 valid responses, giving a response rate of 78%.

Items measuring strategic vision and resource allocation used a five-point Likert scale, from 1 (strongly disagree) to 5 (strongly agree). Strategic vision and resource allocation each comprised five statements. The source project reported Cronbach's alpha values of .932 for strategic vision and .838 for resource allocation, indicating acceptable internal consistency for the scales used in that study.

Data were analysed in SPSS using frequencies, percentages, means, standard deviations, Pearson correlation, and multiple linear regression. The present paper reports descriptive results for the two selected objectives and the correlation coefficients for each predictor against modernization. It also reports the coefficients from the wider four-predictor regression model to show whether each predictor retained a statistically significant unique association

after controlling for stakeholder engagement and innovation management. This is not a newly estimated two-predictor regression; the original dataset was not re-analysed for this paper.

Statistical significance was assessed at the 5% level. The source project reported SPSS significance values of .000 for some tests; these are presented here as $p < .001$, since p -values should not be reported as exactly zero. As the design was cross-sectional and relied on self-reported questionnaire data, the results indicate associations and adjusted statistical relationships rather than definitive causal effects.

IV. FINDINGS AND DISCUSSION

➤ Strategic Vision and Modernization of Airport Security Infrastructure

Respondents gave generally positive ratings to strategic vision. As shown in Table 1, the statement that security modernization was guided by a comprehensive strategic plan had the highest mean ($M = 4.05$, $SD = 0.834$). Alignment of security modernization goals with the airport's overall strategic objectives also received a relatively high mean ($M = 3.99$, $SD = 1.006$), as did top management commitment ($M = 3.97$, $SD = 0.948$). The lowest mean was for considering future security challenges when making strategic decisions ($M = 3.63$, $SD = 1.111$), followed by the clarity of communication about the modernization vision ($M = 3.67$, $SD = 0.948$).

Table 1 Descriptive Results for Strategic Vision ($n = 125$).

Strategic vision item	Mean	SD
Security modernization guided by a comprehensive strategic plan	4.05	0.834
Security goals aligned with overall airport strategic objectives	3.99	1.006
Top management commitment to modernization initiatives	3.97	0.948
Clearly communicated vision for security modernization	3.67	0.948
Consideration of future security challenges in strategic decisions	3.63	1.111

The descriptive pattern suggests that respondents recognized the presence of strategic planning, while future orientation and communication of the vision offered comparatively greater room for improvement. This distinction is relevant because a strategic plan must be kept responsive to changing security threats and communicated clearly enough to guide operational decisions. The result is consistent with the argument that leadership direction and strategic alignment matter to organizational digital transformation (AlNuaimi et al., 2022; Khan et al., 2023).

Pearson correlation showed a positive, strong, and statistically significant relationship between strategic vision and modernization of airport security infrastructure ($r = .601$, $p < .001$, $n = 125$). Thus, respondents who rated strategic vision more positively also tended to rate modernization more positively. In the wider multiple regression model, strategic vision retained a positive statistically significant coefficient ($B = .247$, $\beta = .197$, $t = 2.557$, $p = .012$), controlling for resource allocation, stakeholder engagement, and innovation management.

The null hypothesis H_{01} was rejected at the 5% significance level. The evidence supports a statistically significant positive association between strategic vision and modernization in the study setting. The regression result should be interpreted as an adjusted association, not proof that vision alone caused modernization. Nevertheless, it indicates that strategic vision contributed explanatory information beyond the other three practices included in the original model.

➤ Resource Allocation and Modernization of Airport Security Infrastructure

Respondents also rated resource allocation generally positively, although the means for technology investment and infrastructure-upgrade funding were comparatively low. Sufficient skilled personnel had a mean of 3.90 ($SD = 1.180$), and adequate financial resources had a mean of 3.82 ($SD = 0.974$). Efficient use of budget allocations had a mean of 3.62 ($SD = 0.874$). Investment in modern security technologies and sufficient funding for upgrading security infrastructure each recorded a mean of 3.58.

Table 2 Descriptive Results for Resource Allocation (n = 125).

Resource allocation item	Mean	SD
Sufficient skilled personnel to support modernization	3.90	1.180
Adequate financial resources allocated to modernization projects	3.82	0.974
Budget allocations used efficiently	3.62	0.874
Adequate investment in modern security technologies	3.58	1.061
Sufficient funding for upgrading security infrastructure	3.58	1.065

The lower means for technology investment and infrastructure-upgrade funding suggest that these areas were less positively assessed than staffing and general financial resource adequacy. This pattern points to a practical distinction between perceiving resources as available and having sufficient investment directed to specific modernization needs. It is also consistent with RBV's emphasis on the deployment of resources and the capabilities needed to turn them into organizational outcomes (Barney & Hesterly, 2021).

Pearson correlation showed a positive and statistically significant relationship between resource allocation and modernization ($r = .488$, $p < .001$, $n = 125$). At the bivariate level, more favourable assessments of resource allocation were associated with more favourable assessments of modernization. However, in the wider regression model, the resource allocation coefficient was positive but not statistically significant ($B = .118$, $\beta = .113$, $t = 1.567$, $p = .120$), after controlling for strategic vision, stakeholder engagement, and innovation management.

The null hypothesis H02 was therefore not rejected on the basis of the adjusted regression coefficient at the 5% level. The results are not contradictory: the correlation measures the

overall pairwise relationship, whereas the regression coefficient estimates the unique association of resource allocation after accounting for the other predictors. The findings indicate that resource allocation was related to modernization in isolation, but the study did not establish a statistically significant independent contribution when the other leadership practices were included. Resource allocation may need to be assessed alongside planning, stakeholder coordination, and the ability to adopt and integrate technology.

➤ Combined Interpretation of the Two Objectives

Across the two objectives, strategic vision showed both a significant bivariate relationship and a significant adjusted regression coefficient. Resource allocation was positively correlated with modernization, but its adjusted coefficient was not statistically significant in the wider model. This comparison suggests that respondents' perceptions of strategic direction were more consistently associated with modernization than resource allocation considered independently. It does not mean that funding is unnecessary; rather, the findings indicate that the amount and allocation of resources may not be sufficient on their own to explain differences in modernization.

Table 3 Summary of Results for the Two Selected Objectives.

Variable	Pearson r with modernization	Full-model B	Standardized β	p-value in full model	Interpretation
Strategic vision	.601	0.247	.197	.012	Positive, statistically significant adjusted association
Resource allocation	.488	0.118	.113	.120	Positive correlation; adjusted coefficient not statistically significant

The wider four-predictor model explained 59.0% of the variation in modernization ($R = .768$, $R^2 = .590$, adjusted $R^2 = .577$) and was statistically significant, $F(4, 120) = 43.238$, $p < .001$. These model-level statistics describe the combined model and should not be attributed to strategic vision and resource allocation alone. The results are limited by the cross-sectional design, self-reported measures, and the study's focus on one airport.

V. CONCLUSION AND RECOMMENDATIONS

The paper examined strategic vision and resource allocation in relation to modernization of airport security infrastructure at JKIA. Strategic vision was positively correlated with modernization and remained statistically significant in the wider regression model. The findings therefore support rejecting the first null hypothesis.

Respondents rated the presence of a comprehensive strategic plan highly, but gave comparatively lower ratings to future-oriented decision-making and communication of the vision.

Resource allocation was positively correlated with modernization, but its coefficient was not statistically significant when strategic vision, stakeholder engagement, and innovation management were controlled for. The second null hypothesis was therefore not rejected on the adjusted regression test. The evidence does not imply that resources are unimportant; it indicates that this study did not establish a statistically significant unique contribution for resource allocation in the full model.

JKIA management should periodically review security modernization plans against emerging threats, technology developments, and operational requirements. Modernization priorities should be communicated clearly to relevant teams

and linked to measurable implementation milestones. Management should also examine the relatively lower ratings for technology investment and infrastructure-upgrade funding, and review whether budgets are directed to the highest-priority needs, including equipment integration, maintenance, and staff capability. Investment decisions should be evaluated not only by expenditure levels but also by whether they result in functioning and integrated security improvements.

For theory, the results are consistent with Upper Echelons Theory's proposition that leadership priorities are reflected in organizational outcomes, while the resource-allocation findings underline the RBV distinction between having resources and deploying them effectively. For practice and policy, the paper suggests that airport security modernization planning should link long-term direction to budget priorities, implementation responsibilities, and outcome measures. Future studies could examine multiple Kenyan airports, use longitudinal data, and investigate how procurement processes, regulatory requirements, technological readiness, and organizational capabilities affect the conversion of allocated resources into modernization outcomes.

REFERENCES

- [1]. Abate, M., Christidis, P., & Purwanto, A. J. (2022). Air transport development and policy challenges in Africa: Progress, constraints, and future prospects. *Journal of Air Transport Management*, 104, 102284.
- [2]. AlNuaimi, B. K., Singh, S. K., Ren, S., Budhwar, P., & Vorobyev, D. (2022). Mastering digital transformation: The nexus between leadership, agility, and digital strategy. *Journal of Business Research*, 145, 636–648. <https://doi.org/10.1016/j.jbusres.2022.03.038>
- [3]. Alnuaimi, T., Singh, S., & Al-Shaali, K. (2022). Digital transformation and smart airport development: Implications for aviation security systems. *Journal of Air Transport Management*, 98, 102145.
- [4]. Anderson, R. (2021). Airport governance and infrastructure modernization in Europe: A collaborative leadership perspective. *Transportation Research Part A: Policy and Practice*, 150, 120–134.
- [5]. Avolio, B. J., Sosik, J. J., Kahai, S. S., & Baker, B. (2021). E-leadership: Reexamining transformations in leadership source and transmission. *The Leadership Quarterly*, 32(1), 101381.
- [6]. Barney, J. B. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99–120.
- [7]. Barney, J. B., & Hesterly, W. S. (2021). *Strategic management and competitive advantage: Concepts and cases* (7th ed.). Pearson.
- [8]. Beehr, T. A., Kim, M., & Armstrong, I. W. (2024). How much do survey response rates affect relationships among variables? *International Journal of Social Research Methodology*, 27(1), 63–86. <https://doi.org/10.1080/13645579.2022.2113663>
- [9]. Bhardwaj, A., Sharma, R., & Singh, V. (2023). Smart airport technologies and digital transformation: A review of emerging trends and operational challenges. *Sustainability*, 15(18), 13326.
- [10]. Bloch, D., Schmidt, H., & Weber, F. (2021). Governance structures and airport modernization in the European aviation sector. *Journal of Transport Geography*, 92, 103001.
- [11]. Bryson, J. M., Crosby, B. C., & Seo, D. (2021). Strategic leadership and public sector collaboration in complex systems. *Public Administration Review*, 81(1), 1–14.
- [12]. Carpenter, M. A., Geletkanycz, M. A., & Sanders, W. G. (2023). Upper echelons research: Looking back and looking forward. *Journal of Management*, 49(2), 451–480.
- [13]. Chen, Y., & Wang, L. (2023). Smart airport systems and security modernization in North America. *Journal of Air Transport Studies*, 14(2), 45–63.
- [14]. Cochran, W. G. (1977). *Sampling techniques* (3rd ed.). John Wiley & Sons.
- [15]. Creswell, J. W., & Creswell, J. D. (2023). *Research design: Qualitative, quantitative, and mixed methods approaches* (6th ed.). SAGE Publications.
- [16]. Fernández, R., López, M., & García, P. (2024). Digital transformation and airport security innovation in global aviation hubs. *Journal of Transport Security*, 17(1), 55–72.
- [17]. Freeman, R. E., Dmytriiev, S., & Phillips, R. A. (2021). Stakeholder theory and the resource-based view of the firm. *Journal of Management Studies*, 58(7), 1910–1915.
- [18]. Ghosh, S., Kumar, R., & Patel, V. (2023). Strategic leadership and smart airport development in emerging economies. *International Journal of Aviation Management*, 9(3), 210–228.
- [19]. Hamann, P. M., Halw, O., & Guenther, T. W. (2023). Meta-analysis of the corporate planning–organizational performance relationship: A research note. *Strategic Management Journal*, 44(7), 1803–1819. <https://doi.org/10.1002/smj.3476>
- [20]. Hambrick, D. C. (2007). Upper echelons theory: An update. *Academy of Management Review*, 32(2), 334–343.
- [21]. Hambrick, D. C., & Mason, P. A. (1984). Upper echelons: The organization as a reflection of its top managers. *Academy of Management Review*, 9(2), 193–206.
- [22]. Hitt, M. A., Ireland, R. D., & Hoskisson, R. E. (2021). *Strategic management: Competitiveness and globalization* (13th ed.). Cengage Learning.
- [23]. International Air Transport Association. (2023). *Digital transformation in aviation: Smart airports and seamless passenger experience*. IATA.
- [24]. International Air Transport Association. (2024). *Global airport infrastructure outlook 2024*. IATA.
- [25]. International Air Transport Association. (2024). *Global outlook for air transport*. IATA.
- [26]. International Civil Aviation Organization. (2022). *Global air transport outlook and trends*. ICAO.

- [27]. International Civil Aviation Organization. (2023). *Aviation security manual and global standards*. ICAO. <https://www.icao.int>
- [28]. International Civil Aviation Organization. (2023). *Global aviation security plan (GASeP) 2023–2025*. ICAO.
- [29]. Ireland, R. D., & Hoskisson, R. E. (2022). *Strategic management: Concepts and cases*. Cengage Learning.
- [30]. Johnson, G., Scholes, K., Whittington, R., Angwin, D., & Regnér, P. (2023). *Exploring strategy* (13th ed.). Pearson.
- [31]. Kaunert, C., Léonard, S., & de Goede, M. (2021). Security governance and airport resilience in Europe. *Security Dialogue*, 52(4), 321–339.
- [32]. Kenya Airports Authority. (2023). *Annual report and financial statements 2022/2023*.
- [33]. Kenya Airports Authority. (2024). *Annual report and financial statements 2024*.
- [34]. Kenya Civil Aviation Authority. (2023). *State of aviation industry report 2023*.
- [35]. Kenya Civil Aviation Authority. (2024a). *Aviation safety and security oversight report*.
- [36]. Kenya Civil Aviation Authority. (2024b). *State of aviation industry report 2024*.
- [37]. Kenya National Bureau of Statistics. (2024). *Economic survey 2024*.
- [38]. Khan, M. A., Islam, T., Ahmed, I., & Saeed, U. (2023). Strategic leadership and digital transformation: A systematic review and future research agenda. *Technological Forecasting and Social Change*, 194, 122694.
- [39]. Kierzkowski, A., Kisiel, T., & Karwat, Z. (2024). Airport security systems and emerging threat mitigation strategies. *Safety Science*, 168, 125002.
- [40]. Kierzkowski, A., Kisiel, T., & Łuczak, A. (2024). Airport security systems and infrastructure modernization: Challenges and future directions. *Journal of Air Transport Management*, 116, 102548.
- [41]. Kraaijenbrink, J., Spender, J. C., & Groen, A. J. (2021). The resource-based view: A review and assessment of its critiques. *Journal of Management History*, 27(3), 377–394.
- [42]. Lee, J., Kim, H., & Park, S. (2023). Smart airport transformation and digital security systems. *Journal of Air Transport Management*, 109, 102410.
- [43]. Mutiso, J., Kamau, P., & Wanjiru, M. (2023). Strategic leadership and aviation performance in Kenya. *African Journal of Transport and Logistics*, 8(2), 88–101.
- [44]. Mutunga, J. M., & Kavinda, L. (2026). Accomplishing organizational performance through strategic planning practices: Empirical evidence from selected public universities in Nairobi City County, Kenya. *Journal of Strategic Management*, 10(2), 61–79. <https://doi.org/10.53819/81018102t5431>
- [45]. Ngaruiya, E., K'aol, G., & Njenga, K. (2023). Influence of determining strategic direction on organization performance of pharmaceutical companies in Kenya. *The University Journal*, 5(2), 150–161. <https://doi.org/10.59952/tuj.v5i2.198>
- [46]. Northouse, P. G. (2022). *Leadership: Theory and practice* (9th ed.). SAGE Publications.
- [47]. Ochieng, D., Waweru, S., & Njoroge, K. (2022). Airport infrastructure development and governance challenges in Africa. *Journal of African Transport Studies*, 6(1), 44–59.
- [48]. Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). Free Press.
- [49]. Salmona, M., & Kaczynski, D. (2024). *Qualitative and mixed methods data analysis using Dedoose: A practical approach for research across the social sciences*. SAGE Publications.
- [50]. Saunders, M., Lewis, P., & Thornhill, A. (2023). *Research methods for business students* (9th ed.). Pearson.
- [51]. Sekaran, U., & Bougie, R. (2021). *Research methods for business: A skill-building approach* (9th ed.). Wiley.
- [52]. Sigalas, C. (2025). Resource allocation choices in asset intensive industries. *European Management Review*. Advance online publication.
- [53]. Singh, S. K., Del Giudice, M., Chierici, R., & Graziano, D. (2022). Green innovation and organizational performance: The role of digital transformation and strategic leadership. *Technological Forecasting and Social Change*, 181, 121785.
- [54]. Tan, B. S., & Masood, T. (2021). Industry 4.0: Challenges and success factors for adopting digital technologies in airports. *Journal of Air Transport Management*, 97, 102134.
- [55]. Tan, W., & Masood, T. (2021). Digital transformation in Asian airport systems. *Journal of Air Transport Management*, 95, 102083.
- [56]. Teece, D. J. (2023). Dynamic capabilities and strategic management: Theory and practice. *Long Range Planning*, 56(2), 102306.
- [57]. Thendu, J., Kariuki, P., Muturi, W., & Wanjohi, G. (2022). Effect of strategic leadership on performance of safety management system in aviation industry in Kenya. *The Strategic Journal of Business & Change Management*, 9(2), 1479–1488.
- [58]. Tidd, J., & Bessant, J. (2021). *Managing innovation: Integrating technological, market and organizational change* (7th ed.). Wiley.
- [59]. Verhoef, P. C., Broekhuizen, T., Bart, Y., Bhattacharya, A., Dong, J. Q., Fabian, N., & Haenlein, M. (2021). Digital transformation: A multidisciplinary reflection and research agenda. *Journal of Business Research*, 122, 889–901. <https://doi.org/10.1016/j.jbusres.2019.09.022>
- [60]. Walter, C., Wiegmann, A., & Klenk, M. (2022). Strategic leadership and digital transformation in aviation: Implications for airport modernization. *Journal of Air Transport Management*, 103, 102251.
- [61]. Walter, M., Schmid, J., & Hoffmann, R. (2022). Airport security modernization and strategic leadership. *International Journal of Aviation Management*, 8(2), 101–118.
- [62]. Wang, Y., Fan, Z., & Zhang, H. (2023). Digital innovation and smart airport development: Drivers of airport operational performance. *Journal of Air Transport Management*, 111, 102431.

- [63]. Wang, Y., Zhang, X., & Liu, H. (2022). Cybersecurity integration in smart airport systems. *Computers & Security, 118*, 102690.
- [64]. Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal, 5*(2), 171–180.
- [65]. Wheelen, T. L., Hunger, J. D., Hoffman, A. N., & Bamford, C. E. (2024). *Strategic management and business policy: Globalization, innovation and sustainability* (16th ed.). Pearson.
- [66]. Zhang, L., & Liu, Y. (2024). Smart airport ecosystems and leadership in aviation transformation. *Journal of Transport Technology, 12*(1), 1–18.