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Elevating Construction Management in the Airline Industry: A KPI-Centric Strategy for Chief Construction Officers

SeyyedAbdolHojjat MoghadasNian

Tarbiat Modares University

S14110213@Gmail.com

Nasim Souzi

University College of Rouzbahan

NasimSouzi@Yahoo.com

1

Abstract

This research delves into the transformative role of Key Performance Indicators (KPIs) in enhancing construction management practices within the airline industry. By integrating a mixed-methods approach, comprising semi-structured interviews with Chief Construction Officers (CCOs) and quantitative analysis of project performance data, the study systematically identifies, assesses, and optimizes the application of specific KPIs critical for performance enhancement in airline industry construction projects. The findings underscore the necessity of aligning KPIs with the airline's strategic objectives to ensure project success, operational efficiency, and sustainability. The research highlights the benefits of incorporating sustainability and stakeholder satisfaction metrics into the construction management framework, advocating for a dynamic, comprehensive KPI framework responsive to evolving industry challenges. Theoretical contributions include extending the balanced scorecard framework and applying contingency theory within the context of construction management. Practical implications offer actionable insights for CCOs,



emphasizing the adoption of advanced technologies for enhanced KPI tracking and prioritizing sustainability and stakeholder engagement. Future research directions suggest exploring the integration of emerging technologies, longitudinal impacts of KPIs, and cross-industry best practices to further refine KPI-driven strategies in construction management. This study provides a roadmap for navigating the complexities of construction projects in the airline industry, highlighting the indispensability of a KPI-driven approach for achieving operational excellence, sustainability, and enhanced stakeholder satisfaction.

Keywords: Construction Management, Airline Industry, Key Performance Indicators, Sustainability, Stakeholder Satisfaction.

Introduction

The construction landscape within the airline industry is witnessing transformative changes, propelled by technological advancements and a rising commitment to environmental sustainability. This shift marks a departure from traditional construction projects focused primarily on functionality, towards those embedding advanced technologies, green building practices, and innovative design principles. Such evolution not only caters to the immediate needs of airport infrastructure, hangar spaces, and operational facilities but also aligns with the strategic move towards sustainability and customer satisfaction. The increasing complexity and scale of projects, coupled with unique operational demands and stringent security measures, necessitate leveraging digital technologies like Building Information Modeling (BIM) and drones for site surveying to foster precision, efficiency, and stakeholder collaboration in project management.

In navigating the complex terrain of airline industry construction, the indispensability of a Key Performance Indicator (KPI)-driven management approach becomes apparent. The adoption of KPIs offers a robust framework to gauge performance across several dimensions, including project execution, cost management, and quality control, thereby facilitating strategic decision-making and continuous improvement. This approach does not merely aim at ensuring projects are completed on time and within budget but also emphasizes their long-term impact on environmental sustainability and operational efficiency.

This study sets out with a tripartite objective aimed at fortifying the performance and strategic coherence of construction management within the airline sector through a focused exploration of KPIs. Firstly, it seeks to identify the most relevant and impactful KPIs tailored to the sector's unique project management needs. Following this, it aims to assess the application and efficacy of these KPIs in driving project success, before finally developing a set of recommendations to optimize their application for enhanced project performance. This research endeavors to construct a comprehensive framework for a KPI-driven approach in construction management, thereby providing actionable insights for Chief Construction Officers (CCOs) and their teams to enhance project efficiency and align with the airline industry's growth and sustainability goals.



Literature Review

Construction Management Challenges in the Airline Industry

This section synthesizes the multifaceted challenges confronting construction management in the airline industry, with a particular focus on regulatory demands, environmental considerations, and the imperative of maintaining high safety standards. The existing body of research illuminates these challenges, underscoring the necessity for innovative and interdisciplinary approaches to navigate the complexities of construction projects within this sector.

Regulatory Requirements and Environmental Considerations: The stringent regulatory landscape governing airline industry construction projects necessitates meticulous adherence to legal and environmental standards. This scenario is complicated by the pursuit of sustainable development goals, such as minimizing environmental impact through waste management systems and incorporating sustainable practices. Research highlights the difficulties in balancing these demands, pointing to the complexity of implementing environmental management plans effectively across different geographical contexts (Luchkina, 2023; Asnor et al., 2022; Shen & Tam, 2002).

High Safety Standards: Ensuring the highest levels of safety in construction projects is paramount within the airline industry. The literature identifies critical organizational and management factors that contribute to a robust safety management system. Studies focusing on the civil aviation sector provide insights into structural relationships among these factors, emphasizing the significance of a 'just culture' for enhancing safety outcomes (Liou, Yen, & Tzeng, 2008; Gerede, 2015).

Significance of KPIs in Construction Management

The discourse on the significance of Key Performance Indicators (KPIs) in construction management highlights their evolution from traditional financial metrics to encompassing broader performance measures. This evolution responds to the industry's demand for more comprehensive performance evaluation frameworks.

Critical Appraisal of KPIs Usage: The effectiveness of KPIs in the construction industry has been constrained by their post-event nature, limiting their utility for real-time decision-making. Frameworks proposing the integration of KPIs into business management underscore the necessity for actionable metrics (Beatham et al., 2004).

Broadening the Scope of Performance Measures: The expansion of performance measures to include safety, resource efficiency, and stakeholder satisfaction reflects a shift towards a more holistic understanding of project success. This shift is particularly relevant in large-scale public sector projects, where traditional metrics are being supplemented or replaced to better capture project outcomes (Toor & Ogunlana, 2010).

Frameworks for Performance Evaluation: The development of theoretical frameworks for construction project performance evaluation introduces key indicators such as time, cost, quality, and environmental impact. These frameworks advocate for a comprehensive approach to performance evaluation, extending beyond traditional metrics to embrace broader project impacts and stakeholder satisfaction (Ngacho & Das, 2015; Chan & Chan, 2004).

Despite the insights provided by existing studies, there remains a noticeable gap in research specifically tailored to the unique challenges and KPI applications within the airline industry's construction projects. These gaps include a lack of specificity for the airline industry, limited focus on service quality, the predominance of lagging over leading KPIs, and the nascent integration of advanced technologies in KPI



management. Addressing these gaps necessitates focused research efforts to develop and validate industry-specific KPI frameworks that account for the operational, safety, and quality demands peculiar to the airline industry.

Methodology

This study employs a mixed-methods research design, integrating both qualitative and quantitative approaches to address the multifaceted nature of construction management within the airline industry. This comprehensive approach is justified by the complexity of the subject matter, where qualitative insights from Chief Construction Officers (CCOs) and quantitative performance data converge to provide a holistic understanding of Key Performance Indicator (KPI) application and its implications. The mixed-methods design facilitates a nuanced exploration of KPI-driven strategies, blending empirical evidence with experiential knowledge to enhance the study's validity and applicability.

Primary Data Sources: The core of the study's data derives from semi-structured interviews with CCOs actively leading construction projects in the airline sector. These interviews are meticulously designed to extract deep insights into the selection, implementation, and impact of KPIs, alongside the challenges encountered in real-world applications. Complementing these qualitative insights, the study also analyzes quantitative data from project reports and performance metrics across various airline construction projects, providing an objective assessment of KPI effectiveness in achieving project objectives.

Secondary Data Sources: To enrich the analysis, secondary data including industry reports, scholarly articles, and relevant case studies are reviewed. This additional layer of information supports the primary data, offering context and benchmarking capabilities that are crucial for a comprehensive evaluation of KPI-driven construction management practices.

Quantitative Analysis: The study applies statistical techniques to quantitatively assess the relationship between KPI utilization and project outcomes. This analysis identifies trends, patterns, and correlations, providing empirical evidence of KPIs' impact on project efficiency, cost management, and quality assurance.

Qualitative Analysis: Thematic analysis of interview transcripts offers qualitative insights into the strategic and operational nuances of KPI application. This methodological approach enables the identification of key themes, challenges, and best practices, enriching the study's findings with the experiential knowledge of industry leaders.

Comparative and Benchmark Analysis: A comparative analysis across different projects and airlines assesses the variability in KPI application and its outcomes. Benchmarking against industry standards further contextualizes the findings, highlighting areas of excellence and opportunities for improvement.

By adopting this structured methodology, the research aims to provide actionable insights into the strategic and operational dynamics of KPI-driven construction management in the airline industry. The mixed-methods approach ensures a balanced exploration, capturing both the measurable impacts of KPIs and the qualitative experiences of those at the forefront of industry practices.

Findings

Key Performance Indicator (KPI) Identification and Impact

The study's comprehensive analysis has led to the identification of several pivotal KPIs, instrumental in the nuanced arena of construction management within the airline industry. These KPIs span across



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critical operational dimensions including project management, cost efficiency, quality control, risk mitigation, sustainability efforts, and stakeholder engagement. The subsequent assessment of these indicators unveils their profound direct and indirect influences on the overarching success metrics of airline industry construction projects.

Project Management Efficiency

- Projects completing on schedule directly enhance customer satisfaction and readiness for operational deployment, highlighting the KPI's centrality to timely project delivery.
- Adherence to budgetary constraints is mirrored in projects' financial performance, underscoring the importance of cost-related KPIs in sustaining financial health and resource optimization.

Cost Management Insights

- The analysis reveals a clear correlation between meticulous cost per square foot/meter tracking and overall project cost efficiency, emphasizing the need for rigorous financial oversight.
- Variability between budgeted and actual costs provides early warning signals for potential financial discrepancies, enabling proactive adjustments to safeguard project viability.

Quality Assurance and Compliance

- A reduced number of construction defects and high compliance rates with project specifications significantly contribute to operational efficiency and long-term asset value, affirming the weight of quality-focused KPIs.

Risk Management Strategies

- The frequency of legal disputes and project delays due to unforeseen risks are pivotal indicators of a project's risk exposure and management efficacy, marking them as essential KPIs for minimizing project vulnerabilities.

Sustainability and Environmental Stewardship

- Projects demonstrating high utilization of recycled materials and significant waste reduction achievements resonate with broader environmental sustainability goals, showcasing the strategic importance of sustainability-focused KPIs.

Stakeholder Satisfaction and Engagement

- Elevated stakeholder satisfaction rates and minimal issue escalation underscore the project's alignment with stakeholder expectations and requirements, reflecting the critical nature of these KPIs in fostering trust and collaboration.

Insights from Case Studies

The examination of selected case studies provided tangible evidence of the successful application of KPI-driven strategies, illuminating pathways to innovation, cost savings, and operational efficiency enhancements. These narratives underscore the dynamic application of KPIs in steering projects towards exemplary outcomes, aligning with strategic objectives and industry best practices.

Strategic and Operational Variability

- The comparative analysis across different airlines and projects underscored the variability in KPI prioritization, reflecting diverse strategic orientations and project-specific challenges. This diversity emphasizes the need for adaptable and strategic KPI frameworks capable of guiding projects to success under varying conditions.

Comparative Analysis



The comparative analysis further elucidated the distinct approaches to KPI application across the industry, revealing how strategic emphasis shapes KPI selection and implementation. Projects aligned with their respective airline's strategic objectives consistently demonstrated improved outcomes, affirming the necessity of strategic congruence in KPI application.

Discussion

Interpreting Findings in the Context of Existing Literature and Theoretical Frameworks

The findings from this study underscore the pivotal role of Key Performance Indicators (KPIs) in navigating the multifaceted landscape of construction management within the airline industry. By systematically identifying, assessing, and optimizing the application of KPIs, this research illuminates pathways towards improved project delivery, enhanced sustainability, and increased stakeholder satisfaction. These outcomes resonate with existing literature and theoretical models, enriching the discourse on construction management practices with fresh insights and empirical evidence.

Strategic Alignment and Performance Measurement:

The critical importance of aligning KPIs with an airline's strategic goals is a theme that emerges strongly from the findings. This strategic alignment ensures that construction projects are not only operationally successful but also contribute to the broader objectives of the airline, including sustainability and stakeholder engagement. This insight complements the balanced scorecard framework, which advocates for a holistic approach to organizational performance measurement, spanning financial, customer, internal process, and learning and growth perspectives (Kaplan & Norton, 1992).

Innovation in Construction Practices:

The research highlights how KPI-driven strategies foster innovation in construction practices, particularly through the integration of sustainability and advanced technologies. This observation aligns with the contingency theory, suggesting that the effectiveness of management practices, including KPI utilization, is contingent upon the specific conditions and challenges of the project (Donaldson, 2001). The case studies examined reveal that adaptive and innovative applications of KPIs can lead to significant improvements in efficiency, cost savings, and environmental performance.

Enhancing Stakeholder Satisfaction:

The findings also emphasize the role of KPIs in enhancing stakeholder satisfaction, a crucial aspect of project success in the airline industry. This aspect ties back to stakeholder theory, which posits that the success of an organization or project is heavily influenced by its ability to manage and satisfy the expectations of its stakeholders (Freeman, 1984). By measuring and improving on KPIs related to stakeholder concerns, construction projects can better meet the needs and expectations of all involved parties, including passengers, employees, and regulatory bodies.

The study's findings contribute significantly to the theoretical understanding of KPI application in construction management, offering a nuanced view of how these indicators can be strategically aligned and optimized. On a practical level, the research provides actionable insights for Chief Construction Officers (CCOs) and their teams, emphasizing the need for a comprehensive, adaptable, and strategically coherent KPI framework to navigate the complexities of construction projects in the airline industry successfully.

This discussion sets the stage for future research avenues, particularly in exploring the dynamic interplay between KPIs and emerging technologies, the evolving nature of sustainability practices, and the



deepening engagement with stakeholder expectations. Further investigation into these areas will not only expand the theoretical framework but also refine the practical application of KPIs in construction management, aligning with the rapid advancements and shifting paradigms within the airline industry.

Implications and Future Directions

Theoretical Contributions

This research enriches the existing body of knowledge on construction management within the airline industry, particularly emphasizing the nuanced role of Key Performance Indicators (KPIs). The study's findings offer a multi-dimensional exploration of KPIs, highlighting their critical impact on project management, sustainability initiatives, and stakeholder engagement within the context of airline industry construction projects.

Advancing Performance Measurement: By delineating the direct correlation between strategic KPI alignment and project success, this study builds upon and extends the balanced scorecard framework. It underlines the necessity of broadening performance measurement to encapsulate environmental sustainability and stakeholder satisfaction, thereby offering a more comprehensive approach to evaluating construction project outcomes.

Enhancing Strategic Decision-Making: The research underscores the importance of KPIs in facilitating strategic decision-making within the complex operational landscape of the airline industry. It echoes the principles of contingency theory, suggesting that the effectiveness of KPI-driven strategies is contingent upon their alignment with the organization's strategic goals and the specific challenges of construction projects.

Practical Recommendations

For Chief Construction Officers (CCOs) and their teams, this study provides a blueprint for leveraging KPIs to drive improvements across various facets of construction management:

1. **Develop and Continuously Refine a Strategic KPI Framework:** Establish a comprehensive KPI framework that aligns with both the airline's strategic objectives and the unique demands of construction projects. This framework should be dynamic, allowing for adjustments based on project progress and evolving industry trends.
2. **Embrace Technology for Enhanced KPI Tracking:** Implement advanced technologies such as AI, IoT, and BIM to facilitate real-time monitoring and analysis of KPIs. This adoption can significantly improve accuracy in tracking and predicting project performance, enabling proactive management decisions.
3. **Prioritize Sustainability and Stakeholder Engagement:** Integrate sustainability and stakeholder satisfaction as core components of the KPI framework. This integration not only aligns with global trends towards environmental responsibility but also enhances project acceptance and satisfaction among key stakeholders.

Future Research Directions

To further the understanding and application of KPIs in construction management within the airline industry, future research should explore several critical areas:

1. **Longitudinal Studies on KPI Evolution:** Investigate how KPIs evolve over time in response to technological advancements, regulatory changes, and shifts in sustainability practices. Such



studies can offer insights into the adaptive nature of KPI frameworks in meeting future challenges.

2. **Cross-Industry Comparative Analysis:** Conduct comparative studies across industries to identify best practices and innovative KPI applications that could be adapted to the airline industry's construction projects. This approach can uncover novel strategies for enhancing project management efficiency and effectiveness.
3. **Impact of Emerging Technologies:** Examine the impact of emerging technologies on the effectiveness of KPI-driven strategies, particularly in areas such as predictive analytics, machine learning, and automated project monitoring. Understanding the potential of these technologies can pave the way for more sophisticated and efficient construction management practices.

Conclusion

This research embarked on a comprehensive exploration into the pivotal role of Key Performance Indicators (KPIs) in revolutionizing construction management practices within the airline industry. Through a meticulous examination of KPI application, the study unveils significant insights into how these metrics drive project success, foster sustainability, and enhance stakeholder satisfaction. Key findings underscore the necessity of a strategic alignment between KPIs and the broader objectives of the airline industry, highlighting the benefits of incorporating sustainability and stakeholder-focused metrics into construction management frameworks.

The findings contribute substantially to both the theoretical understanding and practical execution of construction management strategies in the airline sector. By aligning KPIs with strategic objectives, construction projects can achieve not only operational excellence but also contribute to the airline's sustainability goals and stakeholder engagement efforts. This research advocates for the adoption of a dynamic, comprehensive KPI framework that is responsive to the evolving challenges and opportunities within the industry.

Looking ahead, the study outlines several avenues for future research, emphasizing the integration of emerging technologies and methodologies to refine KPI-driven strategies further. Investigating the longitudinal impact of KPIs, exploring cross-industry best practices, and assessing the potential of advanced technological tools are identified as critical areas for advancing the field of construction management in the airline industry.

The journey towards enhancing construction management in the airline industry, guided by a KPI-centric strategy, presents both challenges and opportunities. Embracing this approach necessitates a commitment to continuous improvement, innovation, and strategic foresight. As the industry evolves, so too must the frameworks and strategies employed to manage construction projects. The findings of this research offer a roadmap for Chief Construction Officers and their teams to navigate this complex landscape, ensuring that projects not only meet today's standards but are also poised for future success. In closing, the significance of adopting a KPI-driven approach in construction management cannot be overstated. It stands as a fundamental strategy for CCOs aiming to navigate the complexities of construction projects in the dynamic airline industry. As we move forward, the insights and frameworks developed through this research will serve as a beacon, guiding the industry towards operational excellence, sustainability, and enhanced stakeholder satisfaction.



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Appendix

Appendix A: Comprehensive KPI Inventory for Chief Construction Officer (CCO)

Elevating Construction Management in the Airline Industry: A KPI-Centric Strategy for Chief Construction Officers. To translate the KPI-driven framework articulated in this article into actionable governance, this appendix presents the Top 100 role-specific Key Performance Indicators for the Chief Construction Officer. Each metric is aligned with the Universal KPI Development Framework for Airline Roles and organized into ten strategic dimensions.

Use this inventory to:

1. **Populate Dashboards:** Embed for each KPI its definition, calculation formula (numerator, denominator, units), data source (e.g., ERP/MRO, AODB, IoT feeds), and reporting cadence (daily/weekly/monthly/quarterly).
2. **Define RACI:** Assign "Responsible," "Accountable," "Consulted," and "Informed" stakeholders across Construction Planning, Project Management Office, Procurement, Finance, Operations Control Center, and Digital Transformation to ensure clear ownership.
3. **Benchmark Performance:** Leverage IATA/ICAO standards, peer-group best practices, and internal digital-twin pilots to set "leading-practice" thresholds.



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4. Integrate Across Functions: Link upstream and downstream metrics e.g., Project Cycle Time → Resource Utilization → Schedule Adherence → On-Time Departure → CASK—to ensure the CCO role drives network reliability, cost efficiency, and customer experience.
5. Embed Advanced Enablers: Incorporate AI-driven forecasting for demand planning, blockchain for materials provenance, mobile-enabled site monitoring, and green-construction measures (CO₂ per ASK, SAF infrastructure readiness) into decision-support platforms.

Together, these 100 KPIs equip the CCO with the tactical levers and strategic guardrails necessary to convert our recommendations into measurable, sustainable improvements in construction delivery, cost control, schedule reliability, and digital maturity.

Strategic Dimensions & KPI Groups

1. Project Delivery & Schedule Performance
2. Cost & Financial Performance
3. Quality & Safety Compliance
4. Resource & Workforce Efficiency
5. Risk & Regulatory Compliance
6. Supplier & Contractor Performance
7. Sustainability & Environmental Impact
8. Innovation & Digitalization
9. Asset & Infrastructure Utilization
10. Stakeholder & Governance

Project Delivery & Schedule Performance

(Strategic Dimension: Operational Excellence, On-Time Performance)

- On-Time Project Delivery Rate (OTPD)
- Schedule Adherence Index (SAI)
- Planned vs. Actual Project Duration Ratio (PAPR)
- Project Cycle Time (PCT)
- Milestone Completion Rate (MCR)
- Accelerated Delivery Rate (ADR)
- Schedule Variance (SVAR)
- Fast-Track Project Ratio (FTPR)
- Delayed Project Impact Factor (DPIF)
- Project Ramp-Up Time (PRT)

Cost & Financial Performance

(Strategic Dimension: Cost Efficiency, CASK Impact)

- Construction Cost per Square Meter (CCSM)
- Budget Variance Percentage (BVP)
- Cost Performance Index (CPI)
- Earned Value at Completion (EVC)
- Return on Infrastructure Investment (ROII)
- Cost Savings from Value Engineering (CSV)
- Construction CASK Impact (CCI)
- Operating Expenditure Avoidance (OEA)



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- Project Contingency Utilization Rate (PCUR)
- Capital Expenditure Accuracy (CEA)

Quality & Safety Compliance

(Strategic Dimension: Customer Experience, Safety Culture)

- Defect Density Rate (DDR)
- Rework Rate (RWR)
- Safety Incident Frequency Rate (SIFR)
- Lost Time Injury Frequency (LTIF)
- First-Time Right Construction Rate (FTRCR)
- Compliance with Construction Standards (CCS)
- Warranty Claim Rate (WCR)
- Snag List Closure Time (SLCT)
- Quality Inspection Pass Rate (QIPR)
- Safety Training Completion Rate (STCR)

Resource & Workforce Efficiency

(Strategic Dimension: Operational Efficiency, DOC Reduction)

- Workforce Utilization Rate (WUR)
- Equipment Utilization Rate (EUR)
- Labor Productivity Rate (LPR)
- Recruitment Cycle Time (RCT)
- Training Hours per Employee (THE)
- Workforce Turnover Rate (WTR)
- Crew Overtime Percentage (COP)
- Skills Competency Index (SCI)
- Resource Allocation Efficiency (RAE)
- Temporary Staffing Usage Rate (TSUR)

Risk & Regulatory Compliance

(Strategic Dimension: Regulatory Compliance, Risk Mitigation)

- Number of Risk Assessments Completed (NRAC)
- Risk Mitigation Implementation Rate (RMIR)
- Regulatory Inspection Pass Rate (RIPR)
- Compliance Issue Resolution Time (CIRT)
- Number of Non-Conformities (NNC)
- Legal Claim Incidence Rate (LCIR)
- Insurance Claim Cost (ICC)
- Contractual Dispute Resolution Time (CDRT)
- Change Order Frequency (COF)
- Project Risk Exposure Index (PREI)

Supplier & Contractor Performance

(Strategic Dimension: Supply Chain Reliability, Cross-Functional Linkages)

- On-Time Delivery of Materials (OTDM)
- Contractor Performance Score (CPS)
- Supplier Quality Acceptance Rate (SQAR)
- Number of Supplier Audits (NSA)
- Subcontractor Compliance Rate (SCR)



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- Purchase Order Lead Time (POLT)
- Backorder Rate (BOR)
- Supplier Innovation Contribution Index (SICI)
- Single-Source Dependency Rate (SSDR)
- Supplier Diversity Engagement Rate (SDER)

Sustainability & Environmental Impact

(Strategic Dimension: Sustainability, CO₂ Reduction, Green Construction)

- CO₂ Emissions per Square Meter Constructed (CO₂SM)
- Percentage of Recycled Material Usage (PRMU)
- Green Certification Achievement Rate (GCAR)
- Construction Waste Diversion Rate (CWDR)
- Energy Consumption Reduction Rate (ECRR)
- Water Usage Reduction Rate (WURR)
- SAF Infrastructure Readiness Rate (SAFIR)
- Renewable Energy Integration Rate (REIR)
- Environmental Compliance Violation Rate (ECVR)
- Lifecycle Environmental Impact Score (LEIS)

Innovation & Digitalization

(Strategic Dimension: Digital Transformation, Efficiency Gains)

- BIM Adoption Rate (BIMR)
- Digital Twin Utilization Rate (DTUR)
- IoT Sensor Coverage Rate (ISCR)
- AI Forecasting Accuracy (AIFA)
- Blockchain Traceability Coverage (BTC)
- Automation Implementation Rate (AIR)
- Innovation Project ROI (IPROI)
- Mobile Worker Deployment Rate (MWDR)
- Virtual Design Review Rate (VDRR)
- Tech Downtime Reduction Rate (TDRR)

Asset & Infrastructure Utilization

(Strategic Dimension: Asset Optimization, Load Factor Support)

- Facility Availability Rate (FAR)
- Hangar Utilization Rate (HUR)
- MRO Bay Utilization Rate (MBUR)
- Ramp Space Utilization Rate (RSUR)
- Infrastructure Downtime Impact on OTP (IDIO)
- Capacity Enhancement Impact on Load Factor (CEIL)
- Asset Turnover Rate (ATR)
- As-Built Documentation Accuracy (ADA)
- Commissioning Success Rate (CSR)
- Operational Readiness Date Attainment (ORDA)

Stakeholder & Governance

(Strategic Dimension: Stakeholder Satisfaction, Corporate Governance)

- Stakeholder Satisfaction Rate (SSR)
- Number of Stakeholder Escalations (NSE)



- Issue Resolution Cycle Time (IRCT)
- Governance Meeting Attendance Rate (GMAR)
- KPI Review Compliance Rate (KPRCR)
- Executive Steering Committee Approval Rate (ESCAR)
- Change Management Effectiveness (CME)
- Communication Plan Adherence Rate (CPAR)
- External Partner Collaboration Index (EPCI)
- Ethical Compliance Rate (ECR)