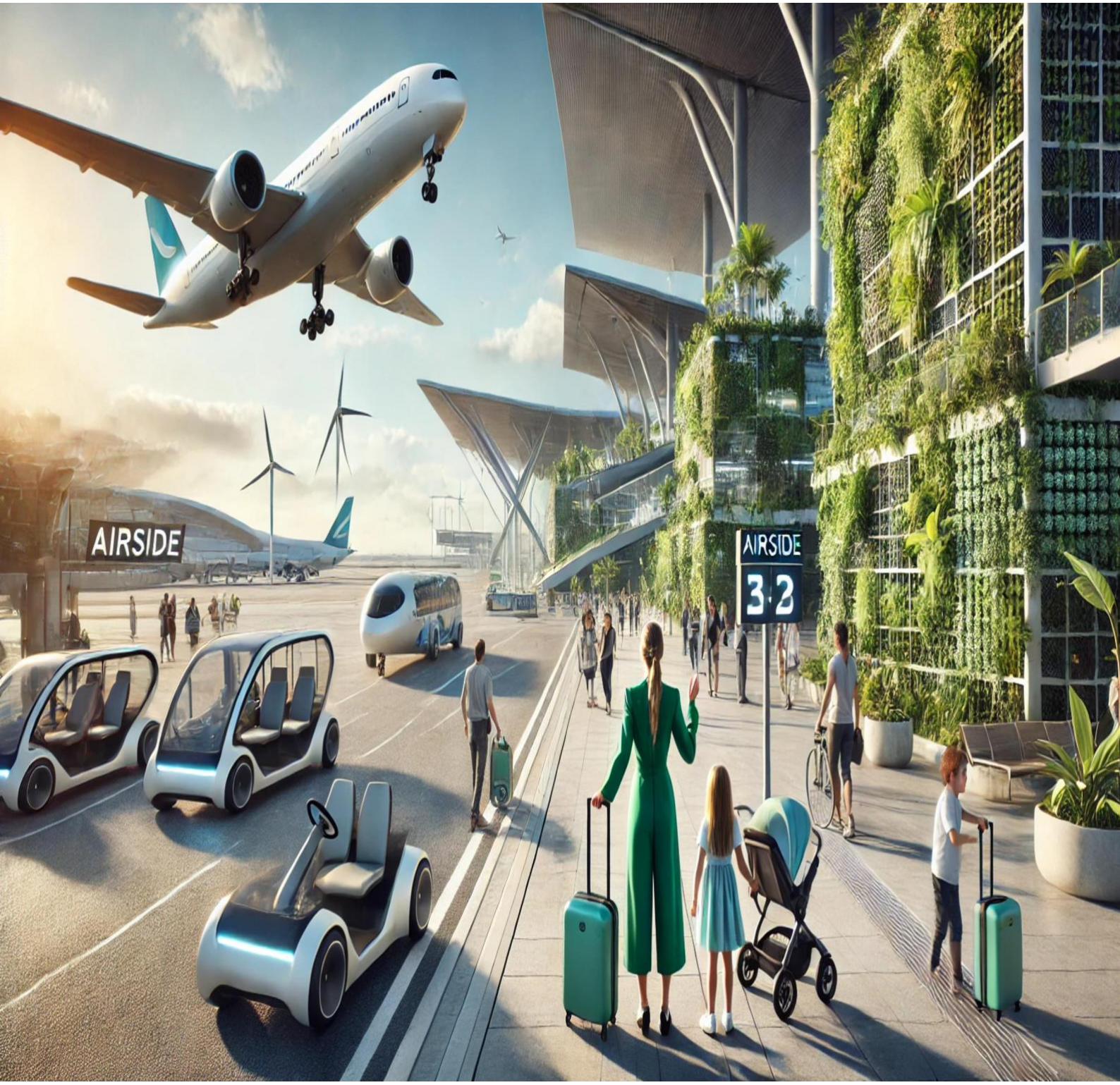
SAFE AND GREEN TOMORROW CONGRESS 2025
16-18 APRIL
KYRENIA



PROCEEDINGS BOOK

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SAFE AND GREEN TOMORROW CONGRESS 2025 (SGT 2025)

16-18 April 2025

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ABOUT CONGRESS

The “Safe and Green Tomorrow Congress 2025” was held face-to-face at the University of Kyrenia between April 16–18, 2025.

The congress provided participants with the opportunity to present their researchs, strengthen and expand their professional networks, exchange knowledge and experiences, follow current trends in the field of aviation management, and contribute to a more sustainable and safer future for the industry.

Papers were accepted and presented in both Turkish and English.

A total of 45 papers were presented by academics, undergraduate and postgraduate students, and industry representatives.

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SAFE AND GREEN TOMORROW CONGRESS *16-18 April 2025 – University of Kyrenia*		
DAY-1, Morning Period (10.00-11.00)		
Session -1 (Common): Opening of the Congress		
10.00 – 11.15	Administrative Briefing	**Aviation Club**
	The Concept of Safe and Green Tomorrow	**Dr.Cengiz Mesut Bükeç** *President of the Congress*
	Futures of Aviation	**Prof.Dr.Gökmen Dağlı** *Dean of Faculty of Aviation and Space Sciences*
	Building the Future of Sustainable and Safe Aviation through Academic Collaborations	**Prof.Dr.Serdar Yurtsever** *Rector of Girne American University*
	Recent Developments and Trends in TRNC Aviation	**Mustafa Sofi** *TRNC Civil Aviation Authority, Director*
	Political Overview of Transportation in TRNC	**Enver Öztürk** *TRNC Ministry of Transport and Public Works, Undersecratary*

Session -2 (Common): Plenary Session **Chair:** Prof.Dr.Süleyman TOLUN **Facilitator:** Mahmoud Abubakar, PhD Std.		
11.30 – 12.30	Keynote Speech	**Prof.Dr.Uğur Yozgat** *Deputy Rector of Istanbul Nisantasi University*
	Distinguished Visitor Remarks	**Prof.Dr.Himmet Karadal** *Abant İzzet Baysal University Faculty of Communication*
	Sustainable Aviation Fuels	**Dr.Abdullah Zahid Turan** *TÜBİTAK SUSTEPS Project Coordinator*
	Green University Concept	**Dr.Hüseyin Kudak** *Lecturer, University of Kyrenia*

Session -3 (Common): *Questioning the Efforts in Aviation Safety: Academics Perspective*
HYBRID PANEL- Broadcasted
Video call link: https://meet.google.com/nbq-zrwm-fzd

The purpose of this session is to critically evaluate the current efforts in aviation safety from an academic standpoint. It aims to present and analyze research findings, discuss theoretical frameworks and methodologies, identify gaps in current safety practices, and propose evidence-based recommendations. By fostering a dialogue between academics, industry professionals, and regulatory bodies, the session seeks to enhance the understanding and implementation of effective safety measures in aviation.

	16 April 2025	
13.30 - 14.30	**Akın Özmen Çakır** *Çelebi Ground Handling Company, EHS Manager*	**Chair:** Dr.Cengiz Mesut Bükeç **Assistant:** Imran Habib Shatry
	Asst.Prof.Dr. Nazenin Nazari Adip *Cyprus West University, Head of the Aviation Management Department*	
	Shah Zaman, PhD Student *Senior Ground Instructor, Saudia Private*	
	Uğur Eker *Training Manager and Chief Theoretical Knowledge Instructor,* *Istanbul Okan University Approved Training Organization*	

Session -4a (Common): *Future-Proofing Aviators: NGO Insights on Safety and Sustainability Trends*
HYBRID PANEL- Broadcasted
Video call link: https://meet.google.com/qci-wdka-unt

The purpose of this session is to explore the critical role that non-governmental organizations (NGOs) play in promoting safety and sustainability within the aviation industry. This session aims to provide attendees with valuable insights into the latest trends, challenges, and best practices from an NGO perspective. By showcasing successful initiatives and fostering dialogue between NGOs, industry stakeholders, and policymakers, the session seeks to inspire collaborative efforts towards creating a safer and greener future for aviation.

		16 April 2025
15.00 - 16.30	Sellected NGO managers	Chair1: Asst.Prof.Dr.H.Duygu Özalp Session Facilitator: Sevgi Pilgi
	TALPA Turkish Airline Pilots Association	**Dr.Cpt.Plt.M.Melih Başdemir** *Captain Pilot in Turkish Airlines*
	TATCA Turkish Air Traffic Controllers Associaton	**Tuğberk Teber and Alper Sarışahin** *Air Traffic Controllers, TATCA Association*
	TASSA Turkish Cabin Crew Members Association	**Feride Baykara** *Lecturer in GAU, Retired Cabin Chief*
	UTED Association of Aircraft Maintenances Techinicians	**Murat Baştürk** *Aircraft Maintenance Technician, UTED Association Vice President*
	HAVADER Aviation Research Association	**Assoc.Prof.Dr.İnan Eryılmaz** *Lecturer, Süleyman Demirel University School of Aviation*

Session -4b (Common): *The Air Operations Approach to Contemporary Aviation Safety* **HYBRID PANEL- Broadcasted** **Video call link: https://meet.google.com/crc-azhx-ddi**		
To explore the strategies and methodologies used in air operations to enhance contemporary aviation safety. This session aims to provide insights into the operational practices, technological advancements, and regulatory frameworks that contribute to a safer aviation environment.		
15.00 - 16.30	**16 April 2025**	
	Leading managers in air transport	**Chair2: Dr.Ayberk Tutkun** **Session Facilitator: Naghmeh Maaşoğlu**
	Sustainable Airport Management Experiences	**Serhat Özçelik** CEO, Ercan International Airport
	Aerospace and Defense Company Quality Management	**Dr.Hakkı Bağan** *Quality Manager, AIRBUS Türkiye*
	Ground Handling Company Safety Management	**Onur Kan Ödeş** *Safety Manager, Çelebi Aviation, Antalya B.*
	Aircraft Maintenance Training Management	**Dr.Tarık Güneş** *Academician, Engineer of Aircraft*
	Managing Safety and Compliance in Flight Schools	**Semih Soran** *FENIX Flight Academy*

Posters and *Exhibition*		
ALL DAY	*Cyprus transportation history photo exhibition*	Izzet Derkan, Chief ATCO in Ercan Approach
	Posters by University of Kyrenia Students	Tahmineh Raoofi*, Lecturer*

Session -6 (Common): Opening of Day 2 - D2105- ERCAN		
09.30	Opening Remarks	**Prof.Dr.Gökmen DAĞLI**
09.40	Administrative Briefing	University of Kyrenia, *Aviation Club*
09.50	Highlights for green transformation	**İbrahim BERBER** *Co-founder of Swayfish Technology Coop*

Session -6a (Concurrent): *Greener Skies, Safer Flights: The Sustainability Imperative in Aviation* **HYBRID (Audio and Video Recorded) D2105 - ERCAN** **Video call link: https://meet.google.com/jft-psed-jko**		
The purpose of this session is to address the pressing need for sustainability within the aviation industry. By exploring innovative solutions, sustainable practices, and regulatory frameworks, this session aims to provide insights into how the aviation sector can reduce its environmental impact while maintaining operational efficiency. The session will highlight the importance of collaboration between industry stakeholders, policymakers, and environmental experts in driving sustainable initiatives and ensuring a greener future for aviation.		
10.30 **12.30**	**Chair3:** Assoc.Prof.Dr.Emete Toros **Session Facilitator:** Ertürk Berke Bayraktar	
Paper 8 ***Online***	The Relationship Between Environmental Sustainability Discourses and Financial Performance in the Aviation Industry: A Legitimacy Theory Perspective	Emrah KOPARAN Fatma ÇITAK
Paper 51 F 2 F	CO 2 Emissions in the Aviation Sector: Validity of the Club Convergence Hypothesis and the Impact of Policy Responses to the COVID-19 Pandemic	Esin KILIÇ
Paper 28 F 2 F	Türkiye'de Faaliyet Gösteren Havayolu İşletmelerinin Uyguladıkları Sürdürülebilirlik Uygulamalarının İncelenmesi	Çiğdem ÇAĞLAR Vildan DURMAZ Ebru YAZGAN, Onur ÜLKER
Paper 5 F 2 F	Holistic Outsourcing Strategies in Airlines: Integrating Sustainability, Innovation and Safety Across All Operations	Hakkı BAĞAN Ayberk TUTKUN
Paper 4 Online	A Tool for Aircraft Tail Assignment in Demand Optimization in Airline Operations	Ali AKBABA
Paper 18 F 2 F	The Effect of Air Transport on TRNC Tourism in the Context of Sustainable Development Goals	C.M.Bükeç, N.MAAŞOĞLU
Paper 19 F 2 F	Establishing and Maintaining an Effective Aviation Policy in an Unsecure Environment	Hüseyin KUDAK, C.M.BÜKEÇ

Session -6b (Concurrent): *Tomorrow's Safe Skies: Considering Human Factors and Training in Aviation* **HYBRID (Audio and Video Recorded) D2201- TOPEL** **Video call link: https://meet.google.com/hmz-bicz-dub** *The session aims to explore the critical role of human factors in shaping the future of aviation safety. By addressing human performance, decision-making, training, and the integration of technology, the session seeks to identify challenges and opportunities to enhance safety measures in tomorrow's skies. It will provide a platform for experts to share research, strategies, and innovations that prioritize human-centric approaches in achieving a safer and more sustainable aviation ecosystem.*		
10.30 12.30	**Chair4:** Asst.Prof.Dr.Tarık Güneş **Session Facilitator:** Tahmineh Raoofi	
Paper 13 F 2 F	The Importance of Oral and Dental Health for Flight Crew	Ecem MAKAS Asiye Nehir ÖZDEN Gürkan Raşit BAYAR
Paper 49 Online	Are our flights safe(r) now?: Thinking Through Flight Crew and Cabin Crew Health Regulations for Improving Flight Safety	Saime ÖZÇÜRÜMEZ
Paper 3 Online	Panopticon Perception and Work Dedication in Airline Employees: The Relationship Between Supervision and Motivation	Ahmet Selim SÜZER
Paper 20 F 2 F	Integration of UAV Supported Airport Emergency Response Systems with Air Traffic Control	Sıla KALE Birsen AÇIKEL
Paper 27 Online	Short-Term Wind Speed Prediction Based on Artificial Intelligence	Abdallah DWIKAT Zafer ASLAN, Şükran Sibel MENTEŞ Ahmet TOKGÖZLÜ
Paper 24 Online	Sustainable Aviation: Innovative Solutions and Future Trends	İbrahim İNAN Mehmet YÖRÜKOĞLU
Paper 30 F 2 F	Smart HR Practices for Aviation: How AI is Transforming Airports' and Airlines' Services and Practices?	Hürcan TARHAN
Paper 40 F 2 F	Organizational Stress Management: The Case of Cabin Crew Member	Seran BEYAR
Paper 14 F 2 F	Methodological Differences of Air Traffic Controller Selection Processes in Turkey: An Evaluation Based on University-Air Navigation Service Provider Comparison and ICAO Standards	Eray KAÇAR Tarık GÜNEŞ
Paper 6 F 2 F	Application of the Cognitive State Model for Preventing Apron Accidents and Ensuring Safety: A Case Study	Ayberk TUTKUN

Session -6c (Concurrent):*Sustainable Strategies and Digital Innovations in Aviation Safety and Management* **HYBRID (Audio and Video Recorded) D2202 - GEÇİTKALE** **Video call link: https://meet.google.com/qzv-icgv-dxz**		
This session gathers research on the intersection of aviation safety and sustainability, examining technological and organizational strategies for greener and safer aviation. The presentations cover sustainability communication, green marketing, sustainable aviation technologies, safety solutions like digital twin applications, accident analysis, and the social dimension of sustainability. The session also discusses digital transformation for SME sustainability and sustainable supply chains, aiming to promote responsible and resilient aviation.		
10.30 12.30	**Chair 5:** Asst.Prof.Dr.Mehmet Yörükoğlu **Session Facilitator:** Dr.Zohre Ahmadi	
Paper 23 Online	Sustainability Strategies of Airline Companies in Turkey: Comparative Analysis of Website Contents	Gülbeniz AKDUMAN Gülnaz KARAHAN
Paper 9 Online	Green Marketing Strategies in Airline Business	Serap AYDOĞDU
Paper 44 F 2 F	Sustainable Aviation Technologies and Green	Selçuk GÜN Halime ALTUNIŞIK
Paper 12 F 2 F	Sustainability Activities of SMEs in the Digital World: The Case of Kocaeli Region	Rasim KESKİN Sevgi PİLGİ
Paper 29 F 2 F	Green Transformation and Sustainable Grow Kits	Rasim KESKİN İbrahim BERBER
Paper 2 F 2 F	Digital Twin in Aviation Safety: The Future of Safety Management	Mehmet YÖRÜKOĞLU
Paper 11 F 2 F	Examining Aircraft Accidents Through Exploratory Data Analysis (EDA) for Aviation Safety	Mehmet YÖRÜKOĞLU Selin SARAÇ GÜLERYÜZ
Paper 22 Online	Sustainability in Aviation: Importance and Applications of the Social Dimension	Gülbeniz AKDUMAN Gülnaz KARAHAN
Paper 35 F 2 F	Sustainable Supply Chain in Aviation	Elinami Matson ELISHA İsmail Barlas BİLGİSU, Ülker Öner ÇEK

Session -7 (Common): Opening of Day 2 - D2202 - GEÇİTKALE		
14.00	Opening Remarks	Prof.Dr.Gökmen DAĞLI
14.10	Administrative Briefing	University of Kyrenia, *Aviation Club*
14.15	Educational support from TÜBİTAK for a sustainable future	**Rasim KESKİN** *Expert Researcher, TÜBİTAK*

Session -7a (Concurrent): *Aircraft Maintenance and Aviation Sustainability* **HYBRID (Audio and Video Recorded)** **Video call link: https://meet.google.com/hqw-fzug-any** *The purpose of this session is to emphasize the critical importance of building robust safety cultures within the aviation industry mainly focusing on maintenance operations. By exploring best practices, innovative strategies, and academic research, this session aims to provide attendees with the knowledge and tools necessary to cultivate and sustain safety cultures that ensure the well-being of both passengers and crew. The session will highlight the role of leadership and continuous improvement in fostering a proactive safety environment, ultimately contributing to the future success and safety of aviation.*		
14.50 16.50	**Chair6:** Asst.Prof.Dr. Ramazan Çoban **Session Facilitator:** Ülker Öner Çek	
Paper 7 F 2 F	Green Maintenance Practices in Aircraft	Tayfun AYDOĞDU
Paper 31 Online	"Dirty Dozen" in Aviation: Communication Based Accidents	Hatice Bahar AŞÇI Bensu Özdemir GÜRSOY
Paper 16 F 2 F	An Insidious Human Factor in Aircraft Maintenance tasks: A Theoretical Study on Complacency	Ramazan ÇOBAN
Paper 15 F 2 F	The Importance of Improving Power Quality in Avionic Systems	Mahmut TURHAN Sıla KALE Erdem ÇAMYAR
Paper 26 F 2 F	Optimization of Aircraft Turnaround Time in Civil Aviation Industry	İsmail Barlas BİLGİSU
Paper 10 F 2 F	Assessment of Aircraft Maintenance Training Processes in Terms of Aviation Industry Competencies	Tarık GÜNEŞ

Session -7b (Concurrent): *Sustainable Operations in Airports* **HYBRID (Audio and Video Recorded) - D2201- TOPEL** **Video call link: https://meet.google.com/ayn-kpys-ugo**		
This session examines strategies for enhancing airport sustainability while maintaining operational efficiency. Topics include energy-efficient infrastructure, carbon reduction initiatives, sustainable fuels, and digital solutions for optimizing resource use. Experts will discuss emerging technologies and best practices that support greener airport ecosystems, offering insights for research and innovation in sustainable aviation.		
14.50 **16.50**	**Chair8:** Assoc.Prof.Dr.Didem Aydındağ **Session Facilitator:** Naghmeh Maaşoğlu	
Paper 1 Online	Content Analysis of Airport Revenue Structures in Terms of Green Marketing Activities	Ümmühan Beste YILDIRIM Tuğçe ÇOPUR
Paper 39 F 2 F	Innovative Green Aviation: A Model Proposal Based on Social and Sustainable Management Systems in Airport Ecosystems	Devrim GÜN
Paper 47 F 2 F	Sustainability Practices at Airports and the Evaluation of Airports in Türkiye	Itır Ceren Morcote SANTOS
Paper 38 F 2 F	Resilience and Sustainability of Turkish Airports in Extraordinary Situations	Nurhan OTO Ferhan KUYUCAK ŞENGÜR
Paper 36 F 2 F	Noise Pollution Reduction in Urban Airports	Mehmet Doğan ÖZDEMİR Alperen AKMAN Tahmineh RAOOFI
Paper 32 F 2 F	Advancing Airport Facilities for Hybrid and Electric Aircraft	Tahmineh RAOOFİ Naghmeh MAAŞOĞLU
Paper 37 F 2 F	Green Skies Ahead: Integration of Blended SPK Sustainable Aviation Fuel in Pegasus Airlines	Safaa MASKINE Ertürk Berke BAYRAKTAR

Session -7c (Concurrent): *Green Transformation in Aviation* **HYBRID (Audio and Video Recorded) - D2105- ERCAN** **Video call link: https://meet.google.com/xju-bajc-czs** *This session will explore the evolving landscape of green transformation in aviation through academic perspectives on policy, industry strategy, and technological innovation. Discussions will cover airspace sovereignty and its impact on sustainability, the role of NGOs in workforce development, and emerging frameworks for green aviation in Türkiye and the Middle East. Papers will also examine corporate sustainability strategies, next-generation green technologies, and groundbreaking projects such as NASA and Boeing's X-66 initiative. Academics will engage in a critical dialogue on the challenges and opportunities shaping a more sustainable future for aviation.*		
14.50 **16.50**	**Chair9:** Dr.Hüseyin Kudak **Session Facilitator:** Dr.Cpt.Plt.M.Melih Başdemir	
Paper 21 F 2 F	Future Prospects of Eastern Mediterranean Airspace Sovereignty Disputes	Devrim ŞAHİN Nalan GELİRLİ Tapdıq IMANOV
Paper 25 Online	Green Transformation Strategy in Businesses: The Future of 'Green Airline' Project in the Airline Industry	Gülaçtı ŞEN Erhan BÜTÜN
Paper 33 F 2 F	The Role of Non-Governmental Organizations in the Development of Türkiye's Aerospace Industry Workforce from a Sustainability Perspective	H.Duygu ÖZALP R.Dilek KOÇAK
Paper 48 F 2 F	Green Aviation in the Middle East: Paving the Path to Sustainable Air Travel	Nazanin Nazeri ABID Mehmet Bahri SAYDAM
Paper 52 F 2 F	Looking Up or Flying: Is It Enough to Close the Gender Gap in Aviation?	Eda KILIÇ
Paper 17 F 2 F	NASA and Boeing's Joint Sustainable Aircraft Project: Theoretical Review on X-66	Ramazan ÇOBAN

Session -7d (Concurrent): Posters and *Exhibition* ***University of Kyrenia Grand Library - Ground Floor***		
ALL DAY	*Cyprus transportation history photo exhibition*	Izzet Derkan, *Chief ATCO in Ercan Airport*
ALL DAY	***Posters***	**Presented By**
01	*A novel solution to sustainable aviation fuel: Susteps project*	*Abdullah Zahid Turan*
02	*Electrical aircraft engine systems and an economic cost benefit analysis*	*Tahmineh Raoofi*
03	*Importance of maintenance in aeronautics and aviation*	*Emmanuel Chibulu*
04	*Safety and sustainability in aviation*	*Liberty Maraire*
05	*Sustainable fuels and alternative energy sources*	*Baraka Wa Mpunga*
06	*Green skies ahead Integration of blended SPK Sustainable Aviation Fuel in Pegasus Airlines*	*Safaa Maskineh* *Erturk Berke Bayraktar*

Session -8 (Common): Opening of Day 2 -D2105- ERCAN		
09.30	Opening Remarks	Prof.Dr.Gökmen Dağlı
09.40	Administrative Briefing	Aviation Club
09.50	Gifts and prizes offered	
10.10	Best Paper's Announcement	

Session -9a (Concurrent Breakout Session): *How Can Aviation Companies Enhance Safety Culture?* **FACE TO FACE (Audio and Video Recorded) - D2202 - GEÇİTKALE**		
10.30 11.30	FOCUS GROUP DISCUSSION	Lead Discussants: Dr.Ramazan Çoban & Dr.Ayberk Tutkun Session Facilitator: Aviation Club

Session -9b (Concurrent Breakout Session): *How Can Aviation Institutes Enhance Safety Training?* **FACE TO FACE (Audio and Video Recorded) - D2105- ERCAN**		
10.30 11.30	FOCUS GROUP DISCUSSION	Lead Discussants: Dr.H.Duygu Özalp and Dr.Tarık Güneş Session Facilitator: Aviation Club

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OPENİNG SPEECH

Cengiz Mesut BÜKEÇ

Distinguished Guests, Esteemed Researchers, Industry Leaders, and Respected Academicians,
It is an immense pleasure and honor to welcome you all to this prestigious Congress on Aviation Safety and Sustainable Aviation Practices. On behalf of the organizing committee, I extend my deepest gratitude to each and every one of you for your participation, contribution, and commitment to this vital field.

First and foremost, I would like to express our heartfelt appreciation to our supporting agencies, whose unwavering encouragement and resources have made this event possible. Their belief in the significance of aviation safety and sustainability has provided us with a strong foundation to explore innovative solutions and share groundbreaking research. Among the esteemed organizations and individuals who honor us with their presence today are the distinguished leaders and managers of TÜBİTAK, the driving force behind research in our country; the dedicated academicians from leading universities shaping Türkiye's aviation sector; the representatives of professional aviation organizations; the esteemed managers of International Ercan Airport; the key players from ground handling companies; the quality managers of Boeing and Airbus; and the quality and safety managers of ERAH Flight Academy, our esteemed partner in flight training. We are also privileged to welcome veteran aviation professionals whose expertise has become a hallmark in the industry.

A special thanks to the Günsel Family and the top management of our esteemed university for their continuous support and dedication to fostering an environment where academic excellence meets real-world impact. Your vision and leadership play a crucial role in advancing knowledge and practice in aviation.

This Congress comes at a time when aviation stands at a crossroads. The industry is undergoing a transformational shift, balancing the ever-growing demands for air travel with the urgent need for sustainability and enhanced safety measures. Today, as we gather experts, scholars, and professionals from diverse backgrounds, we aim to address some of the most pressing challenges and opportunities in the aviation sector.

The research presented in this Congress highlights the profound depth and diversity of contemporary aviation studies. From green marketing in airports to digital twin technology for safety management, from AI aided optimizing aircraft movements to investigating the relationship between supervision and motivation among airline employees, our discussions promise to be insightful and thought-provoking.

On the first day of our Congress, you will be able to follow the keynote speeches and presentations of distinguished speakers, followed by panels attended by representatives of leading aviation companies in our country, civil society organizations and academics who stand out with their works that are compatible with the theme of our Congress. Please feel free to contribute to the discussions.

One of the central themes that will emerge in our discussions is the intersection of safety and sustainability. Aviation safety has always been paramount, yet its connection with sustainability is now more crucial than ever. Papers such as "Green Maintenance Practices in Aircraft," "Holistic Outsourcing Strategies in Airlines: Integrating Sustainability, Innovation, and

Safety," and "NASA and Boeing's Joint Sustainable Aircraft Project: A Theoretical Review on X-66" will provide us with valuable perspectives on the innovative strategies being adopted globally.

Likewise, the role of technology in aviation safety cannot be understated. Studies such as "Examining Aircraft Accidents Through Exploratory Data Analysis (EDA) for Aviation Safety" and "Application of the Cognitive State Model for Preventing Apron Accidents" underscore the importance of data-driven insights in accident prevention and overall industry improvements.

Another critical component of this Congress is the exploration of human factors and organizational dynamics in aviation safety. Papers such as "An Insidious Human Factor in Aircraft Maintenance Tasks: A Theoretical Study on Complacency" and "The Role of Human Factors in Enhancing Safety and Efficiency in Various Industries" will provide us with deeper insights into the human element of aviation and how we can create systems that minimize errors and improve operational efficiency.

Sustainability is not just about reducing emissions or adopting green technologies—it also encompasses economic resilience, regulatory frameworks, and social responsibility. Papers such as "Green Skies Ahead: Integration of Blended Sustainable Aviation Fuel" and "Resilience and Sustainability of Turkish Airports in Extraordinary Situations" will showcase how the industry is adapting to environmental challenges and ensuring long-term operational viability.

Furthermore, regional and global perspectives will be shared, addressing issues such as airspace sovereignty, policy development, and sustainability strategies across different airline companies. As we navigate an evolving geopolitical and economic landscape, it is imperative that we collaborate across borders to build a more resilient and sustainable aviation industry.

At this point, I would like to acknowledge the dedicated researchers and industry practitioners who have submitted their works, bringing forth innovative ideas and transformative solutions. Your hard work and expertise enrich this Congress, ensuring that our discussions are based on solid research and real-world applications.

As we embark on this journey of knowledge exchange, I encourage all participants to engage in meaningful discussions, build valuable connections, and seek collaborative opportunities that will drive the future of aviation toward greater safety, efficiency, and sustainability.

Finally, I would like to thank our dream team. They have worked incredibly hard during the long months we have been preparing for this Congress, which is the first of its kind in the TRNC. They will continue to provide incredible support by managing the sessions, discussions and workshops throughout our Congress. I would like to express my gratitude to them in front of all of you. There will definitely be some setbacks. We are breaking new ground, please forgive our shortcomings. Never hesitate to ask for help from our administrative team.

Once again, I extend my sincerest gratitude to each of you for being a part of this significant event. Let us work together to shape the future of aviation, ensuring that it remains a safe, sustainable, and forward-thinking industry for generations to come.

Thank you again all, and I wish you all a successful and enlightening Congress!

CONTENT ANALYSIS OF AIRPORT REVENUE STRUCTURES IN TERMS OF GREEN MARKETING ACTIVITIES [1, 2]

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Abstract

Today's businesses design their production functions and prefer environmentally friendly production technologies, considering consumers' environmental sensitivities. This is because, in today's world, it is not enough for businesses to merely meet consumers' desires and needs; they must also fulfill their social responsibilities and be environmentally conscious. In this context, the concept of green marketing, which is a long-term business strategy, emerges. Under current conditions, airport operators focus on green marketing practices to both increase their revenues and be sensitive to consumer demands and social issues. This situation is reflected in the airport revenue structure, diversifying the sources of income. Within the scope of airport sustainability revenues, three distinct revenue categories are identified: economic revenues, social revenues, and environmental revenues.

This study examines the top 10 airports of 2024 according to the Skytrax ranking. During the data collection phase, literature review and content analysis methods were employed, utilizing the annual reports published by the airports. As a result, the changing and differentiating airport revenue structures over time were analyzed based on the sustainability data obtained from the selected airports.

Keywords: Green Marketing, Airport, Airport Revenue Structures.

DIGITAL TWIN IN AVIATION SAFETY: THE FUTURE OF SAFETY MANAGEMENT [1]

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Abstract

This study focuses on the role of digital twin technology in improving aviation safety and operational efficiency by optimizing the physical and financial components of the aviation supply network. The research investigates how real-time data integration and advanced digital modeling contribute to safer, more efficient, and sustainable aviation practices. The primary objective is to assess the transformative impact of digital twins on flight operations, air traffic management, aircraft maintenance, and airport infrastructure, while identifying challenges that hinder their widespread adoption. A comprehensive literature review was conducted along with the analysis of selected case studies from leading aviation stakeholders such as Airbus and major international airports. This dual approach provides both theoretical insights and practical applications of digital twin systems in the aviation sector. The findings reveal that digital twin technology enables real-time synchronization, predictive maintenance and optimized resource management, leading to significant reductions in unexpected failures and operational costs. Additionally, digital twins improve airspace utilization, enhance ground operations, and contribute to sustainable facility management. However, major obstacles such as high initial investment costs, cybersecurity vulnerabilities, and a lack of standardized regulations have been identified as critical challenges to adoption. Despite these obstacles, digital twins represent a paradigm shift in aviation safety management, moving the industry from reactive measures to proactive, data-driven strategies. By leveraging big data analytics, artificial intelligence, and the Internet of Things, digital twins have tremendous potential to create a safer, more efficient, and environmentally sustainable aviation ecosystem. This study provides a new perspective by synthesizing digital twin applications across multiple aviation domains (flight operations, air traffic management, and ground infrastructure) through an integrated analysis. It highlights emerging gaps in regulatory frameworks and suggests avenues for future research, thereby providing original insights into the field of aviation safety and digital transformation.

Keywords: Aviation Safety, Digital Twin, Artificial Intelligence, Big Data, Sustainable Aviation Ecosystem.

PANOPTICON PERCEPTION AND WORK DEDICATION IN AIRLINE EMPLOYEES: THE RELATIONSHIP BETWEEN SUPERVISION AND MOTIVATION [1]

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Abstract

The main purpose of this research is to examine the effects of the Panopticon perception that airline employees are exposed to at work on their work dedication. Panopticon perception is discussed in four dimensions: "Positive Panopticon", "Negative Panopticon", "External Responsibility" and "Viewing Consciousness". The effects of these dimensions on employees' work commitment levels have been examined in detail. According to research findings, positive Panopticon perception stands out as an important factor that increases employees' commitment and motivation to work. When employees perceived workplace surveillance mechanisms to ensure safety and order, they showed greater dedication to their work. Particularly in sectors requiring high security such as aviation, the positive effects of this perception on employee motivation and performance have been observed.

On the other hand, the negative perception of Panopticon had negative effects on employees. The feeling of constant surveillance increased employees' stress levels, reduced their job satisfaction, and strengthened their tendency to leave work. This pressure created by negative perception has negatively affected employees' motivation and commitment at work.

The research also found that awareness of being watched has a positive effect on the vigor level of employees. Knowing the tools by which employees are being monitored increased their perception of security, which positively affected their energy at work. However, it was observed that awareness of being watched did not have a significant effect on general work dedication and absorption. These findings reveal that designing workplace surveillance policies in a balanced, transparent and employee-friendly manner can have positive effects on employee engagement and performance.

Keywords: Panopticon Perception, Work Engagement, Positive and Negative Panopticon, Surveillance, Employee Motivation.

A TOOL FOR AIRCRAFT TAIL ASSIGNMENT IN DEMAND OPTIMIZATION IN AIRLINE OPERATIONS [1]

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Abstract

Airlines operate in a highly competitive environment and strive to maximize their revenue by optimizing resource utilization to gain a competitive advantage. In this context, optimizing aircraft allocation for flights is of critical importance for revenue maximization. In airline operations, fleet and aircraft assignment are based on demand forecasts in the beginning of the tariff, so when the passenger and/or cargo demand differs from the forecast for a particular flight, the assigned aircraft resource needs to be reevaluated accordingly. The aim of this study is to form a tool that allows for aircraft assignment based on the evaluation of aircraft performance, characteristics, costs, and revenues, particularly in response to changes in demand, ultimately optimizing profit and minimizing losses in airline operations. Data for creating the tool was obtained from the Airline Operation Control Center (AOCC) department of an airline. As a result of this study, it can be reported that a TOOL has been created using Microsoft Excel program, which enables the evaluation of passenger and cargo demands based on maximizing profit and minimizing losses.

Keywords: Aircraft Assignment, Demand Optimization, AOCC, Tool, Airline Operations.

HOLISTIC OUTSOURCING STRATEGIES IN AIRLINES: INTEGRATING SUSTAINABILITY, INNOVATION AND SAFETY ACROSS ALL OPERATIONS [1, 2]

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Abstract

This paper investigates the potential of holistic outsourcing strategies to enhance the performance of the airline industry across three key dimensions: sustainability, innovation, and safety. The airline industry faces significant challenges in balancing cost-effectiveness with the increasing demands for environmentally responsible operations, technological advancement, and unwavering safety standards. Traditional outsourcing, often viewed primarily as a cost-reduction tool, is evolving into a strategic lever for achieving holistic improvements across these interconnected domains. This research explores how airlines can leverage outsourcing to achieve greater operational efficiency, minimize their environmental footprint, accelerate technological adoption, and strengthen safety protocols. We examine the integration of sustainability into outsourcing contracts through clear environmental KPIs and SLAs, the role of outsourcing in accessing specialized expertise and cutting-edge technologies to drive innovation, and the importance of outsourcing in enhancing safety through specialized expertise and advanced technologies. The paper further analyzes the synergistic relationship between sustainability, innovation, and safety within holistic outsourcing strategies, highlighting the need for a unified strategic vision and robust risk management frameworks. We discuss the challenges of managing complex outsourcing relationships and propose future research directions focusing on the development of sophisticated models for managing integrated outsourcing strategies, the optimal balance between in-house capabilities and outsourced expertise, and the development of standardized metrics for evaluating the effectiveness of these strategies. The study employs a mixed-methods approach, combining quantitative surveys of airlines with qualitative interviews and case studies to gain a comprehensive understanding of the subject matter. The resulting analysis offers valuable insights for both academic researchers

and airline industry practitioners seeking to optimize their operations while fulfilling their environmental, technological, and safety responsibilities. The research acknowledges the limitations inherent in relying on self-reported data and the rapidly evolving nature of the airline industry, ensuring transparency and strengthening the overall credibility of the findings.

Keywords: Aviation Sustainability, Green Aviation Strategies, Aviation Safety Management, Holistic Outsourcing, Aviation Climate Action.

APPLICATION OF THE COGNITIVE STATE MODEL FOR PREVENTING APRON ACCIDENTS AND ENSURING SAFETY: A CASE STUDY [1]

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Abstract

It is not possible to ensure perfect safety in aviation. Especially in a sector that involves the human factor so much, it is important to ensure maximum safety rather than absolute safety. For this, the risk must be minimized. Ensuring safety is very important for the smooth running of operations. The concept of accidents in aviation is at a critical point. While accidents can occur at various stages, these accidents have many costs. An accident on the ground affects not only a flight but also the entire operation process at the airport. An accident on the apron can bring the entire operation to a standstill. In this context, it is essential to prevent accidents and ensure safety. Within the scope of this study, the accident that took place on the apron as a result of the collision of Turkish Airlines and Asiana Airlines planes at Istanbul Atatürk Airport on 13.05.2018 will be examined within the framework of "Apron accident prevention and cognitive state model." This accident, which will be examined using the content analysis method, will be based on the final accident report prepared by the Ministry of Transport and Infrastructure, Transportation Safety Investigation Center. Within the scope of the study, the aim is to reveal the human factors that contributed to the accident. It aims to examine these factors in terms of cognitive state and environmental situation and to understand which factors are effective in the occurrence of the accident. As a result, in line with the findings, it aims to contribute to future studies and ensure apron safety. This study aims to minimize the accidents that will occur on the apron, to prevent indirect or direct costs, and to reveal a sustainable safety level.

Keywords: Safety Management System, Human Factors in Aviation, Safety Strategies, Situational Awareness, Accident Investigation Model.

GREEN MAINTENANCE PRACTICES IN AIRCRAFT [1]

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Abstract

In the 21st century, businesses are emphasizing their social responsibilities in order to gain an advantageous position against their competitors. The aviation sector is also aware of its responsibilities in preventing the damages caused by global warming and climate change. Applications such as green airports, use of recycling materials, efficient use of resources, removal of substances harmful to nature from production, and use of biofuels are trying to reduce the carbon footprint in nature. In this area, green maintenance practices in aircraft are important in terms of the sustainability of the aviation sector in protecting the environment with the support of technological developments. In this study, green maintenance practices in the aviation sector are discussed in three groups. These are; aircraft design, green practices in the maintenance process, and design of the maintenance environment. In addition, the regulations in national and international legislation regarding green maintenance practices are also included. The aim of this study is to design a model that supports the operational needs of aircraft and creates a maintenance environment that complies with high environmental standards.

Keywords: Sustainability, Green Maintenance, Aircraft, Aviation Sector.

THE RELATIONSHIP BETWEEN ENVIRONMENTAL SUSTAINABILITY DISCOURSES AND FINANCIAL PERFORMANCE IN THE AVIATION INDUSTRY: A LEGITIMACY THEORY PERSPECTIVE [1, 2]

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Abstract

The aim of this study is to examine the relationship between environmental sustainability discourses and financial performance of companies operating in the aviation industry within the framework of legitimacy theory. Legitimacy theory suggests that businesses seek to gain legitimacy by aligning their actions with social norms and values. In this context, it was investigated whether environmental sustainability discourses have a direct relationship with financial performance. The sample of the study consists of the top 30 airline companies in the Skytrax 2024 ranking. The annual and sustainability reports of these companies were examined using the content analysis method and the obtained data were subjected to statistical tests and correlation and regression analyses were performed. The analysis results show that there is no significant relationship between financial performance and sustainable environmental discourse performance. This finding, in line with legitimacy theory, reveals that environmental sustainability discourses are used as part of corporate legitimacy and reputation strategies rather than gaining financial gain. At the same time, as a result of the study, it was determined that the ranking made by Skytrax was also considered outside the financial performance variable and that the awards given as a result of this ranking were a legitimacy tool.

Keywords: Sustainability Performance, Aviation Industry, Financial Performance, Legitimacy Theory.

GREEN MARKETING STRATEGIES IN AIRLINE BUSINESSES [1]

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Abstract

The number of businesses entering the aviation sector has increased day by day after liberalization. Businesses in the sector use different strategies to increase their market share and achieve high profit margins. The strategies used are determined according to the market, competitors and customer expectations. With the developments in technology and industry, it is faster and easier to meet these expectations. Developments in technology and industry come to the fore with positive results in every area of life, but these developments have also brought about many pollutions. These pollutions have also caused many environmental problems, especially global warming and climate change. As the negative effects of these problems on living beings began to appear in serious dimensions, the awareness of social responsibility has awakened in consumers and businesses. The aviation sector, which attracts attention with its high carbon footprint, is also trying to make arrangements in its activities with this awareness. With these arrangements, businesses that prove that they are environmentally friendly are given the title of green business. With this title, businesses gain an advantage over their competitors in the market. Green marketing strategies that businesses that want to gain a competitive advantage can implement will be evaluated in terms of marketing mix dimensions.

Keywords: Aviation Industry, Sustainability, Green Marketing.

ASSESSMENT OF AIRCRAFT MAINTENANCE TRAINING PROCESSES IN TERMS OF AVIATION INDUSTRY COMPETENCIES [1]

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Abstract

Aircraft maintenance training programs are planned and implemented in accordance with the standards established by national and international authorities, just as with the training processes of all aviation personnel. Institutions authorized to provide maintenance training are required to deliver both theoretical and practical instruction within the designated hours. Moreover, these training sessions are conducted by instructors with specific competencies in classrooms and workshop environments that meet the necessary requirements. Despite these established standards and regulatory oversight, there are inconsistencies and deficiencies in the planning and implementation of aircraft maintenance training. The competencies expected by the aviation industry are often overlooked in the development of training programs, as well as in the delivery and assessment of training. Consequently, graduates often fail to meet industry expectations. This study examines the extent to which aircraft maintenance training programs and their implementation align with the competencies set by the aviation industry, identifies existing deficiencies, and proposes solutions to address these issues.

Keywords: Aircraft Maintenance Operations, Aircraft Maintenance Training, Personnel Competencies.

EXAMINING AIRCRAFT ACCIDENTS THROUGH EXPLORATORY DATA ANALYSIS (EDA) FOR AVIATION SAFETY [1, 2]

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Abstract

Aircraft accidents are among the most critical issues in aviation safety, and understanding their causes is essential for improving airline operations. This study aims to analyze the causes and impacts of aircraft accidents using Exploratory Data Analysis (EDA) methods. Data on 679 accidents recorded between 2000 and 2023 with detailed reports were obtained from the open source Aircraft Accident Archives Bureau (BAAA-acro). The dataset includes key variables such as the flight phase during which the accident occurred, cause of the accident, aircraft type, and the number of fatalities. The study provides a detailed analysis of the annual trends in aircraft accidents, their distribution across flight phases, and the relationship between aircraft type and accident causes. The findings reveal that 50.3% of aircraft accidents are caused by human error, while 25.3% result from technical failures. A significant portion of accidents occur during takeoff and landing phases, and certain types of accidents are associated with higher fatality rates. These analyses provide valuable insights for enhancing aviation safety measures. In particular, a deeper understanding of accident causes can play a crucial role in airport operations, flight planning, and aviation safety policies. Future research may improve model accuracy by incorporating additional factors such as weather variables and aircraft maintenance data.

Keywords: Aviation Safety, Flight Safety, Exploratory Data Analysis (EDA), Causes of Aircraft Accidents.

SUSTAINABILITY ACTIVITIES OF SME'S IN THE DIGITAL WORLD: THE CASE OF KOCAELI REGION [1, 2]

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Abstract

Technological advancements, global population growth, and emerging climate issues have exacerbated environmental problems, emphasizing the necessity of circular economy initiatives. With the digitalization of industries and the transformation of institutional operations, the importance of sustainability has increased. In this context, the sustainability and digitalization efforts of SMEs, which serve as the driving force of industrial production, are of great significance. Considering the dynamics of the globalized market, SMEs are expanding their operations with an environmentally friendly approach, integrating digital technologies to reduce energy consumption and minimize their carbon footprint. Today, SMEs that internalize sustainability practices utilize digital technologies to conduct their operations in a more environmentally sustainable manner. For SMEs that are sensitive to environmental issues, sustainability reporting plays a crucial role in disclosing their efforts toward a cleaner environment. This study aims to conduct a detailed analysis of the relationship between sustainability and digital transformation among SMEs in the Kocaeli region. A survey will be conducted, and the collected data will be analyzed using SPSS to assess the sustainability of the services provided by SMEs. The selection of the Kocaeli region is particularly significant due to its high number of Technoparks and Organized Industrial Zones. The findings of this research are expected to serve as a roadmap for today's startups and the SMEs of the future.

Keywords: Sustainability, Digitalization, Green Economy, SME.

THE IMPORTANCE OF ORAL AND DENTAL HEALTH FOR FLIGHT CREW [1, 2, 3]

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Abstract

Along with advances in air travel area, oral and dental health issues related to flight safety increases. Regular dental check-ups, especially for flight crew, are crucial for maintaining health and flight safety. Although Turkey has contributed to aviation dentistry with case reports and clinical studies, literature on the subject remains limited. Research shows that only 1.8% of dentists are knowledgeable about aviation dentistry practices. Dentists must understand how high altitudes affect oral and dental health to support flight safety effectively. Flight crew should undergo comprehensive dental examinations twice a year by specialists in aviation dentistry. These examinations should assess dental caries, periodontitis, TMJ function, and prosthetic restorations. Appropriate treatment plans should be provided when necessary. Additionally, storing of intraoral radiographies and cast models are recommended for identification purposes in case of air accidents. Despite the long-standing existence of aviation dentistry, further research is still needed. Dentists should investigate the effects of flying and high altitudes on oral health and physiology. Moreover, there is a growing need for specialists in aviation and space dentistry to enhance Turkey's contributions to this field.

Keywords: Aviation Medicine, Aviation Dentistry, Barodontalgia, Aerodontalgia.

METHODOLOGICAL DIFFERENCES OF AIR TRAFFIC CONTROLLER SELECTION PROCESSES IN TURKEY: AN EVALUATION BASED ON UNIVERSITY-AIR NAVIGATION SERVICE PROVIDER COMPARISON AND ICAO STANDARDS [1, 2]

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Abstract

This study examines the methodological differences in candidate selection processes for air traffic controller (ATCO) training programs across institutions in Turkey. While universities administer special aptitude tests following the Higher Education Institutions Exam (YKS) to assess candidates' spatial awareness, multitasking ability, and core cognitive skills, the State Airports Authority (DHMİ) prioritizes academic and linguistic proficiency through the Public Personnel Selection Exam (KPSS) and Foreign Language Proficiency Exam (YDS). Candidates who pass these thresholds are then evaluated via the FEAST (First European Air Traffic Controller Selection Test), a standardized assessment tool developed by the European Organisation for the Safety of Air Navigation (EUROCONTROL). The FEAST exam rigorously measures profession-specific competencies, including abstract reasoning, visual memory, reaction speed, and decision-making under stress.

Although the General Directorate of Civil Aviation (SHGM) audits training curricula for compliance with EUROCONTROL standards, it does not directly intervene in selection methodologies. This study aims to critically compare these institutional selection mechanisms against the competency framework established by the International Civil Aviation Organization (ICAO).

Keywords: Air Traffic Controller (ATCO) Selection, ICAO Competency Framework, Methodological Discrepancies.

THE IMPORTANCE OF IMPROVING POWER QUALITY IN AVIONIC SYSTEMS
[1, 2, 3]

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Abstract

The increasing use of both commercial and passenger aircraft has revealed the necessity of increasing the efficiency of aircraft. The development of technology has also increased the intensity of use of electronic and electrical systems in aircraft. Transient failures and effects of electrical and electronic systems, which are intensively used, threaten the safety of aircraft.

Since the use of electricity and electronics in aircraft and the quality of energy are directly related to the safety of aircraft, improving the power quality is of great importance. In our study, the effect of a temporary out-of-limit event in the electrical system on the system was demonstrated in practice. Changes in the atmospheric conditions of the world threaten the safety of aircraft electronic systems and therefore flight safety. It has been demonstrated that the insulation values to be used in aircraft should be increased. The changes in the electrical fields in the atmosphere and the danger caused by the number of lightning strikes on aircraft and the height at which they occur reveal the necessity of making changes in insulation systems

Keywords: Power Quality, Avionics, Electricity, Electronics, Aircraft Power.

AN INSIDIOUS HUMAN FACTOR IN AIRCRAFT MAINTENANCE TASKS: A THEORETICAL STUDY ON COMPLACENCY [1]

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Abstract

The purpose of this study is to theoretically examine the concept of complacency, which is one of the common human factors that cause employees to make mistakes during aircraft maintenance tasks in the aviation sector. Complacency can be defined, in general terms, as a temporary or long-term psychological state that can cause a decrease in attention, alertness and awareness of dangers due to the self-confidence and satisfaction of an individual. Complacency is an insidious human factor that can cause judgment errors in the technician or contribute to errors due to the constant repetition of many maintenance tasks and controls. Complacency is a condition that develops over time in the aircraft maintenance sector. As a maintenance technician gains knowledge and experience over time, his/her self-confidence and satisfaction with himself and his performance will develop. The fact that a technician does not record the work he has done during a maintenance task or records and signs a task he has not done is a sign of complacency. Especially in tasks that involve controls and repetitive tasks, the technician's failure to find a fault several times may cause him to feel self-confident, complacent and complacent in subsequent tasks. As a precaution against complacency in maintenance tasks; The maintenance technician must always follow approved maintenance procedures, use checklists, train himself to find errors or faults in inspection tasks, focus mentally on his task, give equal importance to all inspection items, never assume work that has not been done or checked, never sign off on such work, and learn from the mistakes of others.

Keywords: Complacency, Aircraft Maintenance, Human Factor, Dirty Dozen.

NASA AND BOEING'S JOINT SUSTAINABLE AIRCRAFT PROJECT: THEORETICAL REVIEW ON X-66 [1]

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Abstract

The purpose of this study is to theoretically examine the sustainable experimental aircraft project X-66, which has been jointly developed by NASA and Boeing in recent years. NASA and Boeing have collaborated to design, develop and produce the X-66 aircraft by bringing together their expertise and resources. This collaboration is seen as an important step that can break new ground for a sustainable future in aviation. The X-66 aircraft will use many cutting-edge technologies as a proof of NASA and Boeing's continuous search for innovation. The aircraft aims to revolutionize sustainable aviation by reducing fuel consumption and carbon emissions. The aircraft will use an extra-long and thin wing design, known as the Transonic Truss-Braced Wing, fixed with cross-brace struts, and PW1000G Geared Turbofan (GTF) engines developed by Pratt & Whitney to increase aircraft efficiency and reduce carbon emissions. The collaboration aims to develop a sustainable aircraft series with a capacity of 130-210 passengers to shape the future of aviation. The first flight of the X-66 aircraft, which is currently in production, is planned to take place in 2028. Once completed, the X-66 is expected to be 30% more fuel efficient than today’s fuel-efficient aircraft models such as the Airbus A320neo and Boeing 737 MAX. NASA is expected to contribute $425 million and Boeing $725 million over the life of the project.

Keywords: X-66, Sustainable Aircraft, NASA, Boeing.

THE EFFECT OF AIR TRANSPORT ON TRNC TOURISM IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT GOALS [1, 2]

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Abstract

This research questions the relationship between air transportation and the tourism industry in the context of the Sustainable Development Goals (SDGs). By addressing the problem with a focus on TRNC, it will explain how the tourism industry, which benefits from air transportation, contributes to sustainable development and social development, using official economic and social official data. Thus, the macroeconomic weaknesses of the current situation as well as the social and economic threats at the strategic level will be fully identified by comparing them with both the global data and data in the literature. The research strategy to be followed aims to strengthen sustainable development by interpreting this definition by field experts. In this context, data will be collected through semi-structured interviews and the findings obtained through descriptive analysis will be classified and interpreted in the context of the SDGs. Finally, recommendations for restructuring aviation in the north of the island in order to positively increase the impact of air transportation with expert aviators will be created according to the findings obtained as a result of the Focus Group Discussion.

Keywords: Air Transport, SDGs, Tourism Industry.

ESTABLISHING AND MAINTANING AN EFFFECTIVE AVIATION POLICY IN AN UNSECURE ENVIRONMENT [1, 2]

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Abstract

Establishing and maintaining effective aviation policies in an environment dominated by distrust is one of the biggest challenges facing the aviation industry. This paper focuses on the definition and causes of the unsafe environment in civil air transportation and how aviation policies can be shaped under these conditions. Insecurity can arise from a variety of factors, such as terrorist attacks, political instability, economic fluctuations, and epidemics. In such environments, aviation policies need to be flexible, resilient and proactive. International civil aviation organizations and leading states in global air transportation play an important role in the safe, efficient and orderly functioning of the aviation sector. States and organizations also have significant influence in determining and implementing international aviation policies. International cooperation and coordination are the two key elements that ensure the success of these policies. Considering current security threats and wars, it can be seen that the elements that need to be taken into account in establishing international aviation policies vary. Effective aviation policies include tightening security measures, developing crisis management and emergency plans, ensuring effective cooperation between different stakeholders of the sector, and adopting technological innovations. Increasing airport security, developing passenger screening systems and personnel training are of great importance, especially in regions under threat of terrorism. In times of political instability, international cooperation and diplomatic efforts play a critical role in ensuring the sustainability of the aviation industry. During economic fluctuations, effective implementation of fiscal policies and subsidies is necessary to ensure the financial sustainability of the aviation industry. In health crises such as pandemics, raising hygiene standards, implementing social distance measures and using contactless

technologies play an important role in protecting passenger safety and health. This paper provides a comprehensive analysis and makes recommendations on how aviation policies should be established in an unsecure environment. The goal is to make the aviation industry more resilient and sustainable by increasing its capacity to cope with the uncertainties it faces. Implementation of the recommended policies will not only help overcome current crises but also ensure that the sector is prepared in the face of future uncertainties. Additionally, constantly reviewing and updating these policies will help develop a proactive approach to new emerging threats. In this context, it is vital to establish effective dialogue and cooperation between policy makers and sector leaders.

Keywords: Aviation Security, Aviation Policies, Security Challenges.

INTEGRATION OF UAV SUPPORTED AIRPORT EMERGENCY RESPONSE SYSTEMS WITH AIR TRAFFIC CONTROL [1, 2]

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Abstract

Landing and takeoff phases at airports represent critical processes where air traffic experiences peak density and the probability of incidents reaches its highest level. Traditional emergency response methodologies encompass a range of limitations related to response time, operational coordination, and impacts on air traffic. This study examines the effectiveness of emergency response frameworks augmented by unmanned aerial vehicles (UAVs) operating in coordination with air traffic control (ATC). The role of UAVs in enhancing airport operations is critically assessed through capabilities such as accelerated incidents assessment, real-time data transmission, and navigation support for emergency response units. Additionally, the technological framework, regulatory requirements, and operational protocols necessary for the seamless integration of this system with ATC are systematically analyzed. Supported by simulations and case studies, the research highlights the potential of UAV-assisted response systems in strengthening safety measures at airports. The findings indicate that integrating UAVs into air traffic management systems facilitates faster and more efficient responses to incidents occurring during landing and takeoff phases.

Keywords: Unmanned Aerial Vehicles, Air Traffic Control, Emergency Response, Airport Safety, Landing and Take-off Accidents.

FUTURE PROSPECTS OF EASTERN MEDITERRANEAN AIRSPACE SOVEREIGNTY DISPUTES [1, 2, 3]

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Abstract

On December 20, 2024, two French fighter jets, which are stationed at Paphos under the 2017 Defense Cooperation Agreement between France and the Greek Cypriot Administration, conducted low-altitude flights over the Lefke region of Northern Cyprus. Turkish Republic of Northern Cyprus has condemned France for violating its airspace and for escalating tensions in the Eastern Mediterranean, an area which is already volatile. Those tensions are rooted in the protracted Cyprus issue which led first to the deployment of the United Nations Peacekeeping Force in 1964, and then to Turkey's military intervention in 1974. Despite the fact that diplomatic efforts have not resulted in the desired result, they have been successful in maintaining the ceasefire that was established after the events of 1974. However, maintaining the ceasefire has been increasingly difficult due to disputes arising from competition over maritime and airspace rights. The purpose of this study is to examine how a strategic agreement on maritime and airspace delimitation could resolve sovereignty-related issues in a manner that would ensure a sustainable future. It argues that such an agreement could sustain peace by fostering cooperation between the European Union and Turkish side on the development of renewable sources in the region.

Keywords: Flight Information Region, Cyprus, Turkey.

SUSTAINABILITY IN AVIATION: IMPORTANCE AND APPLICATIONS OF THE SOCIAL DIMENSION [1, 2]

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Abstract

The concept of sustainability in the aviation sector has three basic dimensions: environmental, economic, and social. Issues such as emission reduction, fuel efficiency, and cost-effectiveness are the environmental and economic dimensions of sustainability, at the same time, passenger satisfaction, employee health, and harmonious relations with society are the social dimensions that directly affect the sector's success. Investments made in the social dimension of sustainability create a wide range of positive effects, from customer satisfaction to employee productivity and from social brand awareness to brand reputation, and thus positively affect the overall sustainability performance of the sector. Therefore, to ensure social sustainability in the aviation sector, awareness should be increased by coordinating studies between the public, private sector, and academic circles. In this context, this paper aims to examine the social dimension of sustainability in the aviation sector within the framework of passenger comfort, employee health, and activities compatible with society in light of studies in the relevant literature and national and international practices. For this purpose, to make a description with a situation analysis on the topics within the scope of the research, the studies in the relevant literature will be examined using the systematic literature review method. Since it aims to define and classify existing studies in an orderly manner toward a specific topic or question, the research model is descriptive. The research design was determined as systematic scanning since the relevant studies were selected and analyzed. The research findings are important because they will contribute to future studies.

Keywords: Aviation Industry, Sustainability, Social Dimension of Sustainability.

SUSTAINABILITY STRATEGIES OF AIRLINE COMPANIES IN TURKEY: COMPARATIVE ANALYSIS OF WEBSITE CONTENTS [1, 2]

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Abstract

Sustainability is an important strategic factor that increases airline companies' awareness of environmental responsibility and competitiveness. Since airline companies operating in Turkey create sustainability strategies within the scope of their corporate policies and possibilities, the sustainability perspectives of airline companies may differ. Although there are studies conducted on the sustainability practices of airline companies globally, no study has been found that comparatively examines the strategies of companies in Turkey in this area. In this context, the research aims to comparatively analyze the sustainability strategies of airline companies operating in Turkey and how they present them to the public within the framework of the information they share on their websites. The sustainability reports, environmental policies, carbon emission reduction targets, social responsibility projects, and governance structures published on the companies' websites were evaluated using the content analysis method as the research method. According to the findings, it was observed that the sustainability focuses differ among companies; some adopt policies that are more compatible with global standards, while some airline companies provide detailed information on sustainability, and others fall short in this area. This research is important because it will reveal the current status of sustainability practices of airline companies in Turkey, form the basis for further research, and offer suggestions for developing more effective policies in the sector.

Keywords: Aviation Industry, Sustainability, Sustainability Strategy.

SUSTAINABLE AVIATION: INNOVATIVE SOLUTIONS AND FUTURE TRENDS [1, 2]

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Abstract

Sustainable development in civil aviation requires a balance between environmental responsibility, economic growth and operational efficiency. Innovative solutions developed to minimize the ecological footprint play a critical role in the future of aviation. This study examines technological developments in the field of sustainable aviation through a literatüre review method. The findings show that scientific research and technological innovations aimed at reducing carbon emissions are accelerating under the influence of regulatory institutions and environmental organizations. Alternative fuel technologies, advanced propulsion systems and circular economy principles stand out. While Sustainable Aviation Fuels (SAF) are critical in reducing dependency on fossil fuels, hydrogen and electric aircraft, hybrid-electric systems increase fuel efficiency. Artificial intelligence-supported fuel optimization and flight planning systems reduce fuel consumption by optimizing air traffic routes. Lightweight composite materials and 3D printing technologies provide fuel savings and waste reduction in production and maintenance processes. Zero-emission operations at airports, renewable energy integration and aircraft recycling support sustainable aviation. Regulatory frameworks and international collaborations are increasingly effective in setting carbon neutral targets and promoting green technologies. The integration of these innovations will accelerate the transition to a green future in the sector while maintaining operational efficiency and aviation safety.

Keywords: Sustainable Aviation, AI Optimization, Circular Economy, Carbon Neutral.

GREEN TRANSFORMATION STRATEGY IN BUSINESSES: THE FUTURE OF THE 'GREEN AIRLINE' PROJECT IN THE AIRLINE INDUSTRY [1, 2]

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Abstract

The airline industry, one of the important building blocks of the global economy, provides service to almost every corner of the world and competition is increasing among different airline companies worldwide. Sustainability activities are gaining momentum as the most important competitive advantage of recent times. Sustainability, which is a subject that concerns not only national and international aviation organizations but also the entire society, attracts attention in the airline industry in terms of social and economic sustainability, especially the increasing environmental impacts of flights. Therefore, the strategies that airline companies will carry out and the projects they will develop in the field of sustainability are gaining importance. This study discusses the green transformation strategy in the airline industry. Green transformation refers to a comprehensive change towards environmentally sustainable practices, technologies and policies in various segments of society. In order to carry out the 'green airline' process and achieve success in the airline industry, a green transformation strategy can be used. It will be examined how the airline industry, one of the most important means of transportation in the modern world, provides great contributions to society in terms of environmental, economic and social sustainability with a green transformation strategy. Especially in the aviation sector, which is directly affected by the rapid change in technology and global policies in the world, the environmental sustainability efforts of airline companies can be effective.

Keywords: Green Transformation Strategy, Sustainability, Green Airline, Airline Industry.

OPTIMIZATION OF AIRCRAFT TURNAROUND TIME IN COMMERCIAL CIVIL AVIATION INDUSTRY [1]

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Abstract

For economic and social reasons, the total flight frequency, number of passengers carried, amount of cargo and total kilometers flown are increasing every year in the airline transportation sector. This increase in traffic can cause disruptions and delays at airports and in air traffic. Delays and congestion in the services provided negatively affect all businesses and customers directly or indirectly participating in the process. In this report, the subject of the research is determined as the optimization of all activities that start from the moment the aircraft touches down on the runway, until it is parked in the ramp area where the most intensive activities are carried out together and until it is ready for the next flight. By developing the optimization model by utilizing real data, it will be possible to contribute to the optimization of revenues by improving the capacity utilization of airline and airport operators, to optimize the duration of ground services received by late-arriving aircraft according to the previously planned departure time, and to offer a solution proposal in response to the demand that is expected to increase continuously. The study is designed as a simulation. Statistical analyses will be conducted by using the ramp services and air traffic information received from an airline company in 2024 from an airport where they operate. Then, the relationships between the processing times and the resources used at each station will be revealed with the simulation to be created. The simulation was used to create a daily operation model with discrete event modeling software. After the validation and verification of the model, the model will be run to determine whether the theory of constraints can improve the operation performance processes in this environment. The efficiency of the model should suggest a management philosophy for the operations of the company responsible for ground handling, a resource allocation method to improve performance measurements, and new equipment to be used.

Keywords: Aviation Security, Aviation Policies, Security Challenges.

SHORT-TERM WIND SPEED PREDICTION BASED ON ARTIFICIAL INTELLIGENCE [1, 2, 3]

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Abstract

The utilization of renewable energy resources is mainly related to the problem of the prediction precision of wind speed. Based on wind speed data, definition of wind energy potential emphasis on ensuring the efficiency and reliability of wind energy systems. The objective of this work is to present a comprehensive review of artificial intelligence (AI) techniques applied to forecast short-term wind speed. The study compares systematically six different AI models ranging from machine learning models like high-capacity models that comprise Random Forests, Support Vector Machine, autoregressive moving average (ARMA), Linear and Logistic Regression to more complex models like Long Short-Term Memory (LSTM) networks. The models are trained and validated against extensive historical records of wind speeds. This paper covers some analysis related to the hourly data collected at the west of the Mediterranean Sea (Mugla City at the Latitude: 556335 and Longitude: 4070184 [ED-50 formats]), between 2001 and 2002. The study highlights the greater significance of new predictive analytics as a move towards ending the issues of incorporating renewable energy sources into traditional power systems. The study also provides useful insight into AI-based forecasting system design and implementation, paving the way for new breakthroughs in environmental applications.

Keywords: Wind Energy, Sustainability, Data Driven Predictions, Machine Learning, Artificial Intelligence.

REVIEW OF SUSTAINABILITY PRACTICES IMPLEMENTED BY AIRLINE COMPANIES OPERATING IN TURKEY [1, 2, 3, 4]

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Abstract

Population growth on a global scale, acceleration of industrialization and excessive consumption triggered by technological developments have caused a rapid decrease in non-renewable resources, disruption of natural balance and deepening of environmental problems; This situation has caused the principle of sustainability to gain increasing importance. In recent years, sustainability has been adopted by all countries and businesses, and important policies have been developed to reduce environmental impacts on a global scale. The aviation sector, in particular, has an important place in sustainability studies due to its high carbon emissions and environmental impacts. Within the scope of Annex 16-Environmental Protection-Aircraft Noise published by the International Civil Aviation Organization (ICAO), airline companies have been assigned certain environmental responsibilities and various regulations have been introduced in this direction. Airlines operating in Turkey also develop various sustainability practices and carry out projects in this field in order to comply with global standards. In this study, the sustainability practices of airline companies operating in Turkey have been examined comprehensively, and the way the sustainability issue is addressed has been evaluated with the bibliometric analysis method, one of the content analysis methods.

Keywords: Aviation Companies, Sustainability Practices, Sustainability, Bibliometric Analysis.

GREEN TRANSFORMATION AND SUSTAINABLE GROW KITS [1, 2]

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Abstract

Changing consumer needs, climate change and technological developments have made it necessary for societies to transform. Digitalisation appears as a dynamic mechanism in all areas of the sector. The agriculture and food industry, which is the driving force of the industry, is transforming to become sustainable. Today, as in history, the imperatives of climate change have increased the demands of individuals to access high-yielding and organic products. As current studies reveal, consumers' environmental awareness is important for future generations. While the motto of high efficiency in less space is developing, it is seen that there are innovative changes in the transport sector. Especially in air transport and maritime transport, consumers' demands for access to fresh products come to the fore. In addition, it is seen that entrepreneurs develop innovative methods for existing problems. Global companies that prioritise green transformation efforts must take consumer demands into consideration. Grow Kits, which respond quickly to the needs of many sectors within the scope of smart agriculture studies, have reached an important point in the current situation. While sustainability systems are developing day by day, smart agriculture emerges as a fast solution that meets high efficiency and demand. In this research, using the secondary source scanning method, one of the qualitative research methods, initiatives working in the field of Grow kits will be scanned. The research will serve as a road map that can inspire entrepreneurs working in the field of smart agriculture and is expected to contribute to the literature.

Keywords: Green Transformation, Grow Kit, Sustainability, Entrepreneurship.

SMART HR PRACTICES FOR AVIATION: HOW AI IS TRANSFORMING AIRPORTS' AND AIRLINES' SERVICES AND PRACTICES [1]

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Abstract

As all other industries civil aviation is set to change considerably over the next decades and attracts attention due to its applications related to innovative technology and smart applications. Artificial Intelligence and smart applications are driving the future of digital aviation. AI forces replacing and/or cooperating with current human resources have a great impact on the future of Aviation. In the management of airports and airline companies AI can be used as a supportive force for detecting and tracking passengers, luggages, unsecure items or chemicals, developing customer services and passenger experiences, supporting ground services, flying and controlling airplanes, routing airplanes and vehicles, improving computer systems, etc. In this article benefits, challenges, and legal implications of adopting AI and smart technologies in aviation industry is tried to be explored. AI supporting human resources is still developing and can be considered as a new topic. Recent and current practices are still being tested and it can be an arguement that theories in this area are insufficient. Therefore recommendations for interdisciplinary collaborations and implications for aviation sector are tried to be provided in this study.

Keywords: Artificial Intelligence, Human Resources Management, Civil Aviation, Airports, Airlines.

"DIRTY DOZEN" IN AVIATION: COMMUNICATION BASED ACCIDENTS [1, 2]

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Abstract

Aviation safety remains a paramount concern, with human factors contributing significantly to incidents and accidents. The "Dirty Dozen" model, initially proposed by Gordon Dupont, identifies twelve common human factors leading to errors in aviation operations with communication being a critical element influencing flight safety. Therefore, miscommunication has been a leading cause of aviation accidents, resulting from ambiguous phrasing, language barriers, lack of standard phraseology, and misinterpretation of critical information. Miscommunication may arise among flight crew members, air traffic controllers, ground operations, or maintenance personnel, fostering an environment where errors build and escalate into significant safety risks. This paper examines communication-based accidents, highlighting key incidents where failures in verbal or written communication contributed to catastrophic outcomes such as Midair Collision, Air Canada Flight 759 and the Airblue Flight 202 The study examines, through case studies and human factors analysis, how insufficient communication among pilots, air traffic controllers, and maintenance personnel may increase hazards, especially in situations requiring prompt decision-making to avoid tragic outcomes. Furthermore, this paper discusses preventive measures, including Crew Resource Management (CRM) to enhance teamwork, situational awareness, and assertive communication; standardized communication protocols, such as ICAO phraseology, aimed at eliminating ambiguity; and technological innovations like data link communication systems, real-time translation tools, and artificial intelligence-driven speech recognition to minimize errors in pilot-controller interactions. This study analyzes failures and their repercussions, revealing weaknesses in existing aviation communication methods and aiding initiatives to bolster safety culture, reduce human error, and promote operational reliability in high-risk settings. Enhancing communication procedures is vital for averting future incidents and maintaining optimal safety standards in the aviation sector.

Keywords: Dirty Dozen, Aviation Safety, Communication Failure, Human Factors, Crew Resource Management (CRM).

ADVANCING AIRPORT FACILITIES FOR HYBRID AND ELECTRIC AIRCRAFT [1,2]

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Abstract

The aviation industry aims to achieve net-zero environmental impact by 2050. To reach this ambitious goal, aviation stakeholders propose a combination of various strategies, including the adoption of next-generation aircraft. However, the shift toward greener aviation is not without obstacles. Specifically, it requires specialized ground infrastructure to support emerging aircraft powertrains. This study categorizes airport ground equipment requirements based on powertrain types, including all-electric and hybrid-electric configurations. All-electric aircraft utilizing battery systems demand high-power charging stations, battery swapping infrastructure, and advanced electrical safety management systems. Fuel-cell-powered aircraft require hydrogen storage, high-pressure refueling stations, leak detection systems, and hydrogen-specific safety protocols. Hybrid-electric aircraft, depending on their configuration, necessitate a combination of traditional fossil fuel or sustainable aviation fuel (SAF) refueling facilities, hydrogen storage and refueling infrastructure, and electrical charging stations, all integrated with comprehensive safety requirements. Additionally, aircraft stands must be adapted to safely and efficiently accommodate different energy sources. The findings emphasize the need for airports to develop integrated, multi-energy infrastructure with robust safety measures to accommodate the diverse powertrain technologies emerging in aviation.

Keywords: Future Airport, Ground Infrastructure, Battery Charging, Hydrogen Refueling, Safety Management.

THE ROLE OF NON-GOVERNMENTAL ORGANIZATIONS IN THE DEVELOPMENT OF TÜRKİYE'S AEROSPACE INDUSTRY WORKFORCE FROM A SUSTAINABILITY PERSPECTIVE [1, 2]

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Abstract

The rapid growth of the Turkish aerospace industry has heightened the demand for a highly skilled workforce, encompassing mechanical engineers, aeronautical engineers, and maintenance personnel, even manned and unmanned air vehicles' pilots. While government agencies and private sector actors play a significant role in workforce development, epistemic communities, and non-governmental organizations (NGOs) have also emerged as key contributors, facilitating training programs and professional development initiatives for this qualified workforce. Despite their increasing influence in the aerospace industry over time, the role of NGOs in workforce development has not been widely addressed in scientific research, making it an important and noteworthy area of study. This study investigates how these organizations contribute to skill formation, career development, and labour market sustainability within the Turkish aerospace industry. Following this aim this research will address three key questions: (i) What are the main strategies undertaken by epistemic communities and NGOs that produce and/or sustain the production of knowledge and technology in the fields of the aerospace industry to support the development of the technical workforce? (ii) How do NGOs collaborate with educational institutions, industry stakeholders, and regulatory bodies to enhance technical education and training in the aerospace industry? (iii) What challenges do NGOs face in addressing workforce needs, and how can their contributions be optimized? To uncover these questions, this study adopts a qualitative research approach, including semi-structured in-depth interviews with representatives of epistemic communities and/or NGOs, researchers and/or educators working in education, research, and training institutions, and policymakers. Additionally, content analysis of policy documents, NGO reports, and workforce development programs will provide further insights. This study

will develop recommendations to enhance the effectiveness of NGO-led workforce development strategies based on the current outlook of Türkiye's aerospace industry. Additionally, the study aims to strengthen collaboration between NGOs, research and education institutions, and public actors to ensure a sustainable and highly skilled workforce.

Keywords: Aerospace Industry, Workforce Development, Non-Governmental Organizations (NGOs), Epistemic Communities, Sustainability.

SUSTAINABLE SUPPLY CHAIN IN AVIATION [1, 2, 3]

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Abstract

The aviation industry significantly contributes to global connectivity and economic development but is also responsible for approximately 2.5% of worldwide CO2 emissions. A major challenge lies in the sector's complex supply chain, which involves high energy consumption, resource use, and waste generation. This study examines sustainable supply chain practices in aviation and strategies to mitigate environmental impact. Key aspects include the structure of the aviation supply chain, existing challenges, and approaches to enhance sustainability. Strategies such as lightweight composite materials, green logistics (route optimization and sustainable aviation fuels), circular economy practices (aircraft part recycling), and digital monitoring (blockchain for emissions tracking) are explored. Case studies from Boeing, Airbus, and Heathrow Airport demonstrate successful implementation of eco-friendly initiatives, including fuel efficiency improvements, hydrogen-powered aircraft development, and electrification of ground operations. The research highlights the economic benefits of sustainability, such as reduced fuel costs, improved operational efficiency, regulatory compliance, and enhanced brand reputation. Moving forward, the aviation industry must accelerate sustainable aviation fuel adoption, invest in green technologies, and collaborate globally to meet net-zero emission targets by 2050.

Keywords: Sustainable Aviation, Green Logistics, Circular Economy, Aviation Supply Chain, Carbon Reduction.

NOISE POLLUTION REDUCTION IN URBAN AIRPORTS [1, 2, 3]

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Abstract

Urban airports significantly contribute to noise pollution, an increasing environmental issue exacerbated by the expansion of air transportation. People living in densely populated areas surrounding airports face adverse effects such as health problems, reduced quality of life, and decreased property values due to the high noise levels generated by constant air traffic. This study investigates strategies for reducing noise pollution at urban airports and proposes sustainable solutions. The sources of noise pollution—including aircraft engines, takeoff and landing processes, ground service operations, and road traffic near airports—are examined in detail. Technological and operational solutions for noise reduction are explored. Technological approaches include quieter aircraft engines, electric and hybrid aircraft, and noise barriers around airports. Additionally, operational measures such as optimized takeoff and landing procedures, preferential runway use, flight restrictions at certain hours, and noise monitoring systems are identified as effective methods to minimize the environmental impact of airports. Successful noise management strategies implemented at major airports, including Heathrow, Schiphol, and Changi, are analyzed as examples of innovative solutions adopted at a global scale. The primary objective of this study is to develop a sustainable and environmentally friendly aviation model by providing concrete recommendations for reducing airport-related noise pollution. The research will compare and analyze potential noise reduction methods and establish optimized noise management policies for both existing and newly constructed airports. This study aims to support informed decision-making in aviation noise management by offering practical solutions for airport managers, airline companies, and policymakers.

Ultimately, the strategies developed based on research findings will help minimize the environmental impact of urban airports and produce innovative and applicable solutions to protect public health.

Keywords: Airports, Noise Pollution, Sustainability, Noise Reduction Strategies, Sound Insulation.

GREEN SKIES AHEAD INTEGRATION OF BLENDED SPK SUSTAINABLE AVIATION FUEL IN PEGASUS AIRLINES [1]

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Abstract

This research explores the benefits of using Synthetic Paraffinic Kerosene as a Sustainable Aviation Fuel in Pegasus Airlines' operations. The aim of the research is to promote the use of green fuels in A321 fleet providing a preliminary cost analysis before and after deploying SAF fuel replacing the A1 jet fuel for the route between Lefkosa and Adana based on hypothetical scenarios, providing also some operational changes, and strategic considerations to invest in the implementation of SPK fuel. The study gives a clear outline for taking up and offsetting the additional cost, ranging from seeking financial incentives, establishing partnerships, enhancing operations, implementing green passenger charges, and adopting corporate social responsibility initiatives. The main goal of this paper is to incrementally step up the percentage of the SPK blend up to its full usage. By making investments in renewable energy power plants, Pegasus Airlines is able to reinforce its operational autonomy and independence toward A1 jet fuel and continue with sustainability support, other airlines considering it an example for sustainable airline.

Keywords: Turkish aviation industry, Aviation Carbon Emissions Reduction, Environmental Sustainability, SPK, Cost Analysis.

RESILIENCE AND SUSTAINABILITY OF TURKISH AIRPORTS IN EXTRAORDINARY SITUATIONS [1, 2]

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Abstract

The resilience and sustainability of Turkish Airports in extraordinary situations are conjugate approaches. In fact, although the cases are intertwined, their coverage states and reflexes are different. Sustainability aims to further rehabilitate the existing conditions of the airport by covering predictable and foreseeable situations, and to maintain uninterrupted services by taking into account the environmental, social, economic and operational balance. Strength is; It manifests itself by how prepared one is when exposed to a sudden/unexpected/extraordinary situation. In order to ensure the strength of the airport, the critical structures of the airport should be equipped to continue their service uninterruptedly with their functions and key personnel in all forms and conditions. Otherwise, the airport will lose its strength and in this case, the durability of the airport will not be mentioned and its sustainability will deteriorate. Commissioning again; Its duration and cost are proportional to the size of the shock event and the damage it causes. Some shock events and extraordinary situations not only start at a single airport and risk the durability of that airport, but also affect other airports it interacts with on a regional, national and/or international basis. Sometimes, it can affect many airports simultaneously on a global basis (as in the Covid 19 epidemic); In this case, the survival of airports is also tested by their preparedness, the strength of their financial structure, and the resilience, awareness, and dedication of their key personnel. In this paper, the resilience of airports in the world and in our country to shock-chronic events is investigated, and it has become essential to include airport Resilience Plans in the safety management system, sustainability plans and emergency plans.

Keywords: Airport Resilience, Sustainable Airport, Risk Management.

INNOVATIVE GREEN AVIATION: A MODEL PROPOSAL BASED ON SOCIAL AND SUSTAINABLE MANAGEMENT SYSTEMS IN AIRPORT ECOSYSTEMS [1]

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Abstract

The aviation sector, which is a major contributor to global connectivity, is undergoing a transformative shift towards sustainability, with increasing environmental concerns related to aircraft emissions and noise at airports. As concerns about climate change and environmental impact intensify, the aviation sector is embracing green technologies to reduce its carbon footprint and pave the way for a more sustainable future. Innovations ranging from aircraft design to sustainable fuels, ground handling solutions and efficient air traffic management are reducing the environmental impact of aviation. Studies have shown that a 1% increase in annual airport movements leads to a 1.05% increase in environmental impacts, a 1% increase in aircraft size leads to a 1.8% increase and a 1% increase in aircraft age leads to a 0.69% increase in environmental impacts. When the literature is examined, it is seen that although there is a lot of information on sustainable buildings, there are few studies focusing on green airports and their impacts on cities. In this context, this study aims to propose a sustainable airport model and seeks to answer the following question: What are the sustainability practices that a sustainable airport model should include? In order to draw an insightful picture of the green airport model, a mixed qualitative methodology was used in the study and an inductive research approach was followed, proceeding from the general to the specific. This study aims to develop a methodological framework for energy experts, airport stakeholders and policy makers and is expected to be a reference material.

Keywords: Innovation Management, Green Aviation, Airport Ecosystem, Sustainable Management System.

ORGANIZATIONAL STRESS MANAGEMENT: THE CASE OF THE CABIN CREW MEMBER

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ABSTRACT

Individuals working in organizational environments are exposed to various stresses from time to time due to the tasks and roles they undertake. In addition to their work environments, other individuals they interact with also play a role in the sources of organizational stress for individuals. Stress not only affects individuals but also causes negative effects on the organization. Performance changes due to stress negatively affect productivity and also reduce the quality of life of individuals. In this study, a qualitative research design was used to examine the effect of organizational stress on cabin crew members. Also, individual and organizational resources were examined within the scope of stress management. In the study conducted specifically for Pegasus Airlines, which flies to Northern Cyprus and has the highest number of TRNC citizens, 17 (seventeen) cabin crew members and 17 (seventeen) personnel residing in Northern Cyprus, the data through surveys were evaluated in general and by grouping them according to demographic characteristics. The study has the quality to shed light on the steps to be taken to improve the working conditions of personnel working in the aviation sector, specifically for TRNC cabin crew members.

Keywords: Organizational Stress, Stress Management, Stressors, Cabin Crew Member

SUSTAINABLE AVIATION TECHNOLOGIES AND GREEN [1, 2]

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Abstract

Sustainable aviation, for the purpose of leaving a healthy world for future generations and reduce environmental impact has become a major focal point. The aviation sector is a major source of global carbon emissions. Green this paper to examine the development of sustainable solutions and technologies in the aviation industry, especially electric planes, aviation biofuels applications and will focus on carbon neutral. In recent years, the development of alternative fuel technologies and environmentally friendly aircraft, to overcome the obstacles of sustainable aviation has gained a huge momentum. The development of electric aircraft, plays an important role in reducing carbon emissions. Especially designed for short haul flights, electric airplanes, has great potential to minimize the environmental impact of the aviation industry. In addition, renewable energy sources such as biofuels and synthetic fuels, fossil fuels are used instead constitutes an important alternative for flights and sustainable. Another important aspect of flight operations in the airports and aviation technology Green energy efficiency and waste management facility. Smart Airports, digitization and sustainable infrastructures to reduce environmental impacts while improving the passenger experience with it. In this paper, the latest developments on sustainable aviation, current technologies, and the possible effects of these technologies on the future of the aviation industry will be discussed. In addition, policies that are required to accelerate the transformation of the sector Green, business units and investments and will focus on steps to be taken to promote sustainability in the aviation industry will be discussed.

Keywords: Sustainable Aviation, Green Technologies, Electric Planes, Biofuels, Carbon Neutral Aviation.

SUSTAINABILITY PRACTICES AT AIRPORTS AND THE EVALUATION OF AIRPORTS IN TÜRKİYE [1]

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Abstract

In recent years, airports have faced increasing pressure to adopt sustainable practices due to their significant environmental and social impacts. Airports are frequently criticized for their contribution to carbon emissions, noise pollution, and energy consumption, highlighting the need for greater transparency regarding their socioeconomic and environmental effects. As a result, stakeholders demand that airports take responsibility for their impacts and manage them in a more sustainable and resilient manner. Sustainability in airports is a multifaceted concept that must be addressed from environmental, social, and economic perspectives. Like other actors in the aviation sector, airports develop sustainability strategies and actively integrate them into their operations. This study examines sustainability policies implemented at airports globally while assessing the current state of Turkish airports. In this context, a comparative evaluation is conducted based on international standards and trends to identify key areas that require improvement. Furthermore, the findings aim to contribute to the literature on sustainable airport management and support airports' transition toward greener operations in Türkiye.

Keywords: Sustainability, Airports, Aviation, Airport Management.

GREEN AVIATION IN THE MIDDLE EAST: PAVING THE PATH TO SUSTAINABLE AIR TRAVEL [1, 2]

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Abstract
The aviation industry is under increasing pressure to address its environmental impact, with growing concerns over carbon emissions, fuel consumption, and the long-term sustainability of air travel. Middle Eastern airlines, strategically positioned at key global aviation hubs, are uniquely positioned to lead the region towards a greener and more sustainable future. This paper examines the emerging trends and practices of green aviation within the Middle East, focusing on the initiatives adopted by prominent regional carriers to reduce their environmental footprint. Focusing on key players such as Emirates**,** Qatar Airways, and Etihad Airways**,** the paper highlights how these airlines are adopting green aviation strategies, including the transition to fuel-efficient aircraft, investment in sustainable aviation fuels (SAFs), and innovative flight operations designed to reduce fuel consumption and emissions. The study delves into Emirates' commitment to reducing carbon emissions through modernizing its fleet and Qatar Airways' efforts to achieve carbon neutrality by 2050. Etihad Airways is also examined for its pioneering work in SAF research and its sustainable flight operations program, which includes optimizing flight routes and minimizing fuel usage. The paper explores the role of government policy, international agreements such as the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), and regional collaborations in driving green aviation efforts. It also discusses the challenges Middle Eastern airlines face, including infrastructure limitations, high fuel costs, and the need for further technological innovations. This study concludes that while Middle Eastern airlines face unique challenges in adopting green aviation practices, their ongoing investments in innovation, technology, and sustainability are essential to achieving both environmental and economic goals.

Keywords: Green Aviation, Middle Eastern Airlines, Aviation Sustainability, Fuel Efficiency, Emirates, Qatar Airways, Etihad Airways.

ARE OUR FLIGHTS SAFE(R) NOW?: THINKING THROUGH FLIGHT CREW AND CABIN CREW HEALTH REGULATIONS FOR IMPROVING FLIGHT SAFETY [1]

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Abstract
In January and February 2025, news about high profile plane crashes reignited debates around safety of air travel. While details of the accidents heightened anxiety among general public, civil aviation experts asserted that air travel is the safest way of transportation. In contrast to this unwavering trust for overall safety of air travel, the controversy among experts and policy makers about the role of human interventions in causing and preventing civil aviation accidents remains heated. This study seeks answers to the question: In what ways and to what extent does flight crew and cabin crew health impact flight safety, and why? It seeks answers to this question through a study of the changes in regulations concerning flight crew and cabin crew health and safety in the first quarter of the 21st century. The review focuses particularly on the periods following civil aviation accidents for which the impact of human interventions have been questioned. By utilizing a scoping review methodology, the study analyzes the literature from international aviation authorities, publicly available reporting and academic research to identify key health themes addressed by current regulations. Through an analysis of principles and practices concerning physical health, mental health and well-being of flight crew and cabin crew, the review aims to think through the rationale behind the existing regulations, the extent to which they address flight crew and cabin crew specific occupational stressors while drafting regulations. The review aims to advance understanding of the ways in which the existing regulations adapt to emerging data and evidence from scholarly research, account for lessons learned and engage in forward looking, preventive, innovative and participatory policy processes. The study will conclude with a brief discussion on trends and gaps in research on the nexus between flight crew and cabin crew health and flight safety, and its futures.

Keywords: Flight Crew Health, Flight Safety, Flight Safety Regulations, Europe, North America.

CO2 EMISSIONS IN THE AVIATION SECTOR: VALIDITY OF THE CLUB CONVERGENCE HYPOTHESIS AND THE IMPACT OF POLICY RESPONSES TO THE COVID-19 PANDEMIC [1]

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Abstract

The aviation sector has been one of the sectors most affected by the various policy responses implemented to control the COVID-19 pandemic. Stay-at-home orders as well as national and international travel restrictions/controls implemented during the pandemic have had significant economic impacts on the sector, as they are the main determinants of the decline in demand for air transportation services. Additionally, global CO_2 emissions from air transportation have fallen significantly during this period. In this study, firstly, the validity of the club convergence hypothesis for CO_2 emissions of the aviation sector in 138 countries was tested using monthly data for the period 2020-2022. Then, the effects of the control and restriction policies implemented during the COVID-19 pandemic on the CO_2 emissions of the aviation sector were tried to be revealed for all countries included in the analysis and also for the convergence clubs by using panel data analysis methods. According to the findings, although the hypothesis that aviation sector CO_2 emissions converge is rejected for all 138 countries included in the analysis, four potential convergence clubs were identified. Panel data analysis results indicate that the impacts of policy responses to the COVID-19 pandemic, such as stay-at-home orders and national and international travel controls/restrictions, on aviation sector CO_2 emissions differ significantly for different convergence clubs.

Keywords: Aviation Sector, CO_2 Emmissions, Club Convergence, COVID-19, Policy Responses.

LOOKING UP OR FLYING: IS IT ENOUGH TO CLOSE THE GENDER GAP IN AVIATION? [1]

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Abstract

Studies conducted on the aviation sector reveal the existence of a major gender inequality. There is a gender imbalance among women in the fields of piloting, aircraft maintenance technicians, and air traffic controllers, and among men in cabin services. In particular, biases and stereotypes that the general nature of aviation is socially masculine bring discrimination (Yanıkoğlu, 2020; Woods et al., 2024). Similar biases also apply to male cabin crew members employed in a service job that is considered feminine. Studies have shown that biases affect the success of female employees in the aviation sector in particular (Ragbir et al., 2021; Sobieralski and Hubbard, 2019). Ensuring gender equality in every field is also among the Sustainable Development Goals. Although the number of minority gender personnel in these fields increases with each passing year, gender balance and equality cannot be achieved. A study conducted by the International Civil Aviation Organization has proven that this distinction is still valid today, with women making up only about 4.69% of pilots, 21.12% of all air traffic controllers, and 3.1% of all air maintenance technicians in the world (ICAO, 2024). On the other hand, 20.75% of cabin crew are men (Pilot Institute, 2022). At the World Air Transport Summit, the International Air Transport Association (IATA) launched the 25by2025 initiative, which aims to increase the number of women in leadership roles in aviation. Similarly, the Turkish Civil Aviation Authority established the Civil Aviation Gender Balance Development Commission (SHGMTCDGK) and the Civil Aviation Gender Balance Development Directive (SHT-TCD) was created by this commission. The study aims to determine the current status of gender distribution rates of air traffic controllers, aircraft maintenance technicians, pilots and cabin crew employed in the civil aviation sector in Turkey by comparing them with international aviation statistics, to reveal the problems encountered in the profession due to gender and what needs to be done to achieve gender equality in aviation.

Keywords: Air Transport, Inequality, SDG, Woman, Bias.