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PROCEEDINGS

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FOREWORD

The aviation sector showed significant development especially after World War II, and became the transportation sector with rapid technological and structural changes. Due to the speed provided by the developments in both technology and transportation, passenger and cargo transportation have also made a significant progress. This has been an important factor in the growth and development of the aviation industry. The aviation sector and air transport are now clearly seen to play an increasingly important role in implementing the countries' trade policies, and in improving international relations through facilitating exports, tourism and geographical expansion. In this context, the aviation industry not only contributes to the national economy and the real economy in the production of products and services, but also provides a complementary service that undertakes important intermediary duties in areas such as tourism and foreign trade. Therefore, the aviation sector, which is of such importance and is more affected by global events and economic relations than other sectors, needs to be analyzed in detail in order to solve the problems and ensure its sustainability. For this reason, as the University of Turkish Aeronautical Association, we have organized the 5th International Aviation Management Conference on 18-19 November 2021.

In this conference, where we considered 'Sustainability' as the main theme, topics such as aviation management, airline management, air cargo and logistics, operational activities in aviation, and aviation law were opened for discussion. The conference was announced to the relevant departments and academicians of all universities in Turkey, as well as to academics working on aviation management in foreign countries. All submitted studies have been subject to double blind referee process and a total of 32 research papers were accepted to be presented.

This book contains the extended abstracts of the papers presented during the conference. As such, we sincerely hope that this will be a valuable document contributing to the increased quality and quantity of research in the Aviation field.

I would like to offer my thanks to all participants, our organizing committee and scientific committee members who have contributed to the realization of INTAVIC 2021, and editorial board members who have put their valuable efforts in the preparation of this e-book of abstracts.

Prof. Dr. Dursun BİNGÖL
Head of Organization Committee

SESSIONS

Session I	**Airline Management I** Session Chair **Prof. Dr. Yıldırım SALDIRANER**
Session II	**Airline Management II** Session Chair **Assoc. Prof. Dr. Dilek KOÇAK**
Session III	**Air Transportation Industry** Session Chair **Assoc. Prof. Dr. Göknur Arzu AKYÜZ**
Session IV	**Environment and Sustainability I** Session Chair **Assoc. Prof. Dr. Vildan DURMAZ**
Session V	**Environment and Sustainability II** Session Chair **Prof. Dr. Şükrü AKDOĞAN**
Session VI	**Human Resources** Session Chair **Prof. Dr. Dursun BİNGÖL**
Session VII	**Special Topics I** Session Chair **Prof. Dr. Nevsan ŞENGİL**
Session VIII	**Special Topics II** Session Chair **Assoc. Prof. Dr. Yaşar KÖSE**

Conference Program (First Day)

SESSION I / AIRLINE MANAGEMENT I	SESSION CHAIR Prof. Dr. Yıldırım SALDIRANER	13.00 – 14.15

ABSTRACT TITLES & AUTHORS

THE COMPARISON OF AIRLINE BUSINESS MODELS AND MARKETING MIX STRATEGIES ON THE CASE OF SOUTHWEST AND AMERICAN AIRLINES
Rsc. Asst. Esra CİVELEK, Prof. Dr. Özlem ATALIK

OUTSOURCING OF SERVICES AT AIRLINES IN TURKEY: AN EXAMINATION OF SIX AIRLINES
Rsc. Asst. Furkan KARAMAN, Prof. Dr. Özlem ATALIK

INTERNAL AND EXTERNAL ANALYSIS OF AIRLINE INDUSTRY: FUTURE OF THE INDUSTRY ACCORDING TO SECTORAL REPORTS
Rsc. Asst. Hasan Buğra IŞILAR, Rsc. Asst. Simay Göksu KORKMAZ, Rsc. Asst Mert AKINET

SUSTAINABILITY BY STRATEGIC APPROACHES FOR AVIATION SECTOR IN GLOBAL CRISIS (COVID 19)
Assoc. Prof. Dr. Suat BEGEÇ, Mücahit YALÇINKAYA

SESSION II / AIRLINE MANAGEMENT II	SESSION CHAIR Assoc. Prof. Dr. Dilek KOÇAK	14.30 – 15.45

ABSTRACT TITLES & AUTHORS

IN- FLIGHT PRODUCT DIVERSITY AND PRICE COMPARISON
Bekir Tuncer

DOES FLIGHT CREW WORK MOTIVATION AND ENTHUSIASM CHANGE WITH INCREASING TENURE? THE CASE OF TURKISH AIRLINES
Erdem Şahin

THE IMPACT OF THE COVID-19 PANDEMIC ON TURKISH AIRLINES AND AEROFLOT OPERATIONS IN 2020
Prof. Dr. Alexander Eremichev, Ivan Gershkovich, Instructor Marif Aslanov

EXAMINING THE CONSCIOUS AWARENESS LEVELS OF AVIATION EMPLOYEES ACCORDING TO DEMOGRAPHIC VARIABLES: THE CASE OF FRAPORT TAV ANTALYA AIRPORT
Dr. Mustafa CANBEK, Dr. Musa GÜNGÖREN, Assoc. Prof. Dr. Engin KANBUR

SESSION III / AIR TRANSPORTATION INDUSTRY	SESSION CHAIR Assoc. Prof. Dr. Arzu Göknur AKYÜZ	16.00-17.15

ABSTRACT TITLES & AUTHORS

AN INDEPTH ANALYSIS OF THE DOMESTIC AIR TRANSPORT NETWORK OF TURKEY WITH COMPLEX NETWORK THEORY 2003-2020
Dr. Berkcan Uyar

IMPACT OF THE COVID-19 PANDEMIC ON THE AVIATION ECONOMY
Prof. Dr. Mehmet Hanifi ASLAN, Specialist Fırat Cem DOĞAN

FUTURE TRENDS AND CHALLENGES IN AIR FREIGHT LOGISTICS
Dr. Adem PINAR

Conference Program (Second Day)

SESSION IV / ENVIRONMENT AND SUSTAINABILITY	SESSION CHAIR Assoc. Prof. Dr. Vildan DURMAZ	09.00 – 10.15

ABSTRACT TITLES & AUTHORS

SUSTAINABLE AIRPORT TRANSFORMATION: A CASE STUDY ON AMSTERDAM SCHIPHOL AIRPORT
Dr. Hakan RODOPLU, Zeynep YÜCEL

SUSTAINABILITY OF RENEWABLE ENERGY RESOURCES AT AIRPORTS AND AIRPORT POLICIES
Berk Van, Lec. Dr. Serap Gürsel

A BETTER AIRSPACE FOR SHARING: AVIATION-BIRD COEXISTENCE
Dr. Xiaoyu O. Wu

THE ROLE OF TRADE COSTS IN THE RELATIONSHIP BETWEEN AIR TRANSPORTATION AND SUSTAINABILITY
Ümit Çelebi

SESSION V / ENVIRONMENT AND SUSTAINABILITY	SESSION CHAIR Prof. Dr. Şükrü AKDOĞAN	10.30 -11.45

ABSTRACT TITLES & AUTHORS

IMPACT OF THE EUROPEAN UNION'S RENEWABLE ENERGY LAW AND POLICY ON THE INTERNATIONAL CIVIL AVIATION
Halil Çeçen

EFFECT OF MARKET STRUCTURE ON AVIATION SUSTAINABILITY
Assist. Prof. Dr. H. Cenk ERKİN, Rsc. Asst. Rafet DEMİR

MARKETING STRATEGIES FOR SUSTAINABILITY IN THE CIVIL AVIATION INDUSTRY: COVID-19 PANDEMIC ERA IN TURKEY
Fatma İrem KONYALIOĞLU, Tevfik TUN, Burçin HAPAK

ENVIRONMENTAL SUSTAINABILITY AND METHODS USED
İremnur Keskin, Lec. Dr. Serap Gürsel

SESSION VI / HUMAN RESOURCES	SESSION CHAIR Prof. Dr. Dursun BİNGÖL	13.30-14.45

ABSTRACT TITLES & AUTHORS

THE EFFECT OF ORGANIZATIONAL CULTURE ON CREW RESOURCE MANAGEMENT IN TURKISH CIVIL AVIATION
Lec. Mehmet Tuncay, Lec. Dr. Alper Bahadır DALMIŞ

UNDERSTANDING PEER SUPPORT SYSTEM: EXAMPLE OF TALPA-MDA
Assist. Prof. Dr. Esma Görkem Ersoy

A QUALITATIVE RESEARCH ON THE PROBLEMS FACED BY WOMEN IN THE AVIATION SECTOR
Sabiha Annaç Göv, Gökhan Aktürk

EFFECTS OF TIME PRESSURE IN THE AVIATION INDUSTRY: RESEARCH FOR THE DEVELOPMENT OF TIME PRESSURE SCALE
Assoc. Prof. Dr. Emrah KOPARAN, Dr. Onur ÇAPKULAÇ, Sertaç ZOBU

SESSION VII / SPECIAL TOPICS	SESSION CHAIR Prof. Dr. Nevşan ŞENGİL	15.00-16.15

ABSTRACT TITLES & AUTHORS

REFLECTIONS OF THE STRATEGIES APPLIED IN THE BOEING 737-MAX CRISIS MANAGEMENT ON PASSENGER PERCEPTION
Assist. Prof. Dr. Habibe Güngör

ISTANBUL AIRPORT ANALYSIS WITHIN THE FRAMEWORK OF THE AEROTROPOLIS STRUCTURE
Assist. Prof. Dr. Hakan RODOPLU, Ece Karamanoğlu

A COMPARISON BETWEEN EUROPEAN UNION&TURKEY'S CIVILIAN UNMANNED AIRCRAFT SYSTEMS (UAS) REGULATIONS
Atty. Çağlar ALTUN

RESEARCH OF SPECIAL SERVICES PROVIDED TO PASSENGERS WITH DISABLED AT AIRPORTS
İ.Gülina KAFAOĞLU, Gözde UZUN, Mehmet YILDIZ, Yiğit FRİHAT

Conference Program (Second Day)

SESSION VIII / SPECIAL TOPICS II	SESSION CHAIR Assoc. Prof. Dr. Yaşar KÖSE	16.30 – 18.00

ABSTRACT TITLES & AUTHORS

ENVIRONMENTAL-FRIENDLY UNMANNED AERIAL SYSTEMS: LIFE-CYCLE ASSESSMENT FOR SUSTAINABILITY PURPOSES
Dr. Jacob Joshua Shila

CRISIS AND CRISIS MANAGEMENT: AN ASSESSMENT ON THE USE OF AVIATION IN FOREST FIRES
Assist. Prof. Dr. Salim KURNAZ, Osman Nuri Sunar

INVESTIGATION OF MILITARY AIRCRAFT ACCIDENTS OCCURING IN TURKEY
Lec. Barış Işıldak, Assist. Prof. Dr. Murat Kemal KELEŞ, Assoc. Prof. Dr. Aşkın ÖZDAĞOĞLU

METEOROLOGICAL TECHNOLOGIES FORESIGHT AND TECHNOLOGY PROCUREMENT STRATEGIES RECOMMENDATIONS
Assist. Prof. Dr. Özkan Yavuzyılmaz, Lec. Simla Durmuş

HAZARDOUS WASTE MANAGEMENT AT THE AIRPORTS IN TURKEY
Lt. Harun Elbeyi, Assist. Prof. Dr. Meriç H. Gökdalay

Table of Contents

Session I

Session Chair

Prof. Dr. Yıldırım SALDIRANER

THE COMPARISON OF AIRLINE BUSINESS MODELS AND MARKETING MIX STRATEGIES ON THE CASE OF SOUTHWEST AND AMERICAN AIRLINES

Esra CİVELEK
University of Turkish Aeronautical Association, Rsc. Asst.
Özlem ATALIK
Eskişehir Technical University, Prof. Dr.

Abstract

Purpose *– Airlines adopt different business models and determine different marketing mix in order to survive in the competitive market dynamics (Teece, 2010). The main purpose of the study is to investigate the reflects of airline business models on marketing mix. This study aims to examine the similar and different aspects of the marketing mix of low-cost airline and full-service airline on the example of Southwest and American airlines.*

Design / Methodology / Approach *– Airline companies organize marketing mix components to meet the needs and expectations of consumers in order to gain recognition and competitive power in the market (Şengür, and Şengür, 2012). The business models adopted by airline companies shape the activities of the companies in the market. In this study, based on full-service and low-cost business models, the similarities and differences created by business models in the market are analyzed in the case of Southwest and American Airlines. In this study, related books, articles, websites, reports, and blogs were investigated, and necessary information is obtained about the marketing mix (7P), marketing activities and marketing strategies of American Airlines and Southwest Airlines as content analysis. Then, marketing mix aspects were classified under 'product', 'distribution', 'price', 'promotion', 'physical evidence's, 'people' and 'process' themes for airline companies. The marketing mixes of these airlines which adopt different business models are compared.*

Findings *– This study indicated that although the two airlines adopt different business models, there are some similarities and differences in their market mix. Airlines must survive in the competitive environment with their strategic management (Mason and Morrison, 2008). According to the competitiveness level of the market, airlines can demonstrate different marketing strategies.*
In this study's case, while American Airlines is full-service carrier, Southwest Airlines is low-cost carrier. Both of two airlines are from United States of America and airline industry of USA is competitive and also saturated. Therefore, the strategic management of these two airlines in the competitive market is very important. This study indicates that although the two airlines adopt different business models, there are some similarities and differences in their market mix because of competition (e.g., Peter and Olson, 2010; Koo, Mantin and O'Connor, 2011; Fu, Jin, Liu, Oum and Yan, 2019; Miles and Mangold, 2005; Law and Leung, 2000; Chen and Chang, 2005).
For product strategy, while Southwest Airlines serves no-frill flight in short-haul, American Airlines has catering and entertainment service in long haul. Although both have different flight classes, American

Airlines has more diversified flight classes than Southwest Airlines. For price strategy, Southwest Airlines' main motivation is low fares for passenger, but American Airlines makes different pricing strategies. For place strategy, even though both are from USA, they have different destinations and flight network strategy. For promotion strategy, American Airlines and Southwest Airlines indicated similar features as having frequent flier program and using online platforms for communicating with customers (American Airlines, n.d.a.; Southwest Airlines, n.d.a).

For physical evidence strategy, Southwest Airlines has limited type of airplane which provide cost advantage, but American Airlines fleet has many types of airplanes which help airline to differ from others. Employees seem one of the most efficient success factors for both as people strategy. For process strategy, both provide necessary services as pre-flight, in-flight, and post-flight services by themselves and their shareholders. American Airlines uses hub and spoke network, but Southwest Airlines' flight network is point to point. Because of differentiation of flight network, some processes are dissimilar. In addition, American Airlines is member of Oneworld strategic alliance, so its processes have code-sharing, joint venture, block seat (American Airlines, n.d.b.; Southwest Airlines, n.d.b; Southwest Airlines, n.d.c.).

Originality / Value *– There are gaps in the literature on the explanation and comparison of the airline business model and the marketing mix. This study provides a managerial perspective for airline businesses as it explores the links between airline business models and marketing mixes. These topics are important for the competitive position of airlines in the market.*

Keywords *– 7P Marketing Strategies, Airline Business Models, Full-Service Airlines, Low-Cost Airlines, Marketing Mix.*

References

American Airlines, (n.d.a). https://www.aa.com/i18n/travel-info/experience/travel-experience.jsp (Date of Access: 10.10.2021).

American Airlines, (n.d.b). https://www.aa.com/i18n/travel-info/experience/planes/planes.jsp (Date of Access: 10.10.2021).

Chen, F. Y. and Chang, Y. H. (2005). Examining airline service quality from a process perspective. Journal of Air Transport Management, 11(2), 79-87

Fu, X., Jin, H., Liu, S., Oum, T. H. and Yan, J. (2019). Exploring network effects of point-to-point networks: An investigation of the spatial patterns of Southwest Airlines' network. Transport Policy, 76, 36-45.

Koo, B., Mantin, B. and O'Connor, P. (2011). Online distribution of airline tickets: Should airlines adopt a single or a multi-channel approach?. Tourism Management, 32(1), 69-74.

Law, R. and Leung, R. (2000). A study of airlines' online reservation services on the Internet. Journal of Travel Research, 39(2), 202-211.

Mason, K. J. and Morrison, W. G. (2008). Towards a means of consistently comparing airline business models with an application to the 'low cost' airline sector. Research in Transportation Economics, 24(1), 75-84.

Miles, S. J., & Mangold, W. G. (2005). Positioning Southwest Airlines through employee branding. Business horizons, 48(6), 535-545.

Peter, J. P. and Olson, C. O. (2010). Consumer Behavior & Marketing Strategy (Nineth edition). NY: McGraw-Hill.

Southwest Airlines, (n.d.a.). https://www.southwest.com/airfare-types-benefits/ (Date of Access: 09.10.2021).

Southwest Airlines, (n.d.b.). https://www.southwest.com/rapidrewards/overview (Date of Access: 12.10.2021).

Southwest Airlines, (n.d.c.). https://www.southwest.com/html/travel-experience/in-the-air.html?CLK=SWAEXP-INTHEAIR (Date of Access: 11.10.2021).

Şengür, F. K. and Şengür, Y. (2012). Havayolu İş Modelleri: Kavramsal Bir Analiz. 20. Ulusal Yönetim ve Organizasyon Kongresi, İzmir: Dokuz Eylül Üniversitesi.

Teece, D. J. (2010). Business Models, Business Strategy and Innovation. Long Range Planning, 43(2-3), 172-194.

OUTSOURCING OF SERVICES AT AIRLINES IN TURKEY: AN EXAMINATION OF SIX AIRLINES

Furkan KARAMAN
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Özlem ATALIK
Eskişehir Technical University, Prof. Dr.

Abstract

Purpose – *Businesses are making great efforts to gain a competitive advantage over their competitors, to maximize their profits and to minimize their costs. Airline companies are undoubtedly one of these companies. Airline companies are increasingly attaching importance to outsourcing to gain competitive power in increasingly challenging business environments, but it cannot be said that these practices can always be successful. In this research, the outsourcing of services at airlines such as Turkish Airlines, Pegasus, SunExpress, Freebird, Onurair and Corendon was examined and analyzes were performed on the methods they applied.*

Design / Methodology / Approach – *In this study, six aircraft acquisition and ownership of airline companies operating in Turkey, engineering and aircraft maintenance, catering and corporate identity and brand management in the outsourcing area were examined. The study population consisted operating in Turkey, Turkish Airlines, Pegasus, SunExpress, Corendon, consists of Freebird and Onurair. Considering that outsourcing is a highly advantageous strategy for airline companies from time to time, a content analysis was made for these six airline companies. The data used in the analysis were obtained through telephone conversations instead of one-on-one interviews due to the pandemic. Secondary data sources were also used.*

Findings – *The findings of the study are that the outsourcing of aircraft acquisition and ownership, engineering and aircraft maintenance, catering and corporate identity and brand management is (1) undertaken entirely by its own division or affiliate, (2) partly undertaken by its own division or partly owned subsidiary, partly outsourced (3) Outsourcing used in connection with the partially owned subsidiary or joint venture (4) completely dependent on the external supplier, was investigated.*

Originality / Value – *Airline companies prefer outsourcing to focus on superior cost factors such as lower costs, full specialization, learning and economies of scale and gain greater reach; Another potential benefit is that flexibility is maximized. Jones and Hesterly (1997) argue that "under conditions of demand uncertainty, firms are split into autonomous units, mainly through outsourcing or subcontracting." (Jones and Hesterly, 1997). This decoupling increases the ability to respond to a wide variety of contingencies because resources can be reallocated cheaply and quickly. It is conceivable that, given their rapidly changing environments, six airlines may face increased outsourcing. A study on the outsourcing of airlines operating in Turkey and adopting different strategies has not been conducted before. This situation highlights the importance of the study.*

Keywords – *Outsourcing, Aircraft Acquisition and Ownership, Engineering and Aircraft Maintenance, Catering Service, Corporate Identity and Brand Management.*

References

Albert, S., & Whetten, D. A. (1985). Organisational identity in L. L. Cummings ve B. M. Staw (eds.), Research in Organisational Behaviour, 7, Greenwich CT: JAI Press.

Al-kaabi,H., Andrew Potter and Mohamed Naim, "An outsourcing decision model for airlines' MRO activities" Journal of Quality in Maintenance Engineering, Vol. 13 No. 3, 2007, pp. 217-227.

Belasen, A. (2008). The theory and practice of corporate communication. California: Sage Publications.

Browne M., and Jullian A., (2001). Logistic and Supply-Chain Management, Pergamon.

Çınar, S.(2004). Turizm İşletme Belgeli Yiyecek İçecek İşletmelerinde Menü Planlama ve Fiyatlandırma: İstanbul Örneği. Yüksek Lisans Tezi, Sakarya Üniversitesi, Sosyal Bilimler Enstitüsü, Sakarya.

Doig, S.J., Howard, A., Ritter, R.C., 2003. The hidden value in airline operations. McKinsey Quarterly 4, 104–115.

Gary Beckler, "Co-Makership Relationships in European Distribution," The International Journal of Logistics Management, 2 (1), 1991, pp. 48-51.

Greaver, M. F. (1999). Strategic Outsourcing: A Structured Approach to Outsourcing Decisions and Initiatives. New York: Amacom Publications.

GÜL, H. (2005). Dış kaynak kullanma nedenleri ve taşıdığı riskler: imalat sanayiinde bir uygulama, Bandırma İİBF Yönetim ve Ekonomi Araştırmaları Journal, 3(4), 157- 184.

Handfield, R. (2006). A brief history of outsourcing. Retrieved from https://scm.ncsu.edu/scm-articles/article/a-brief-history-of-outsourcing.

Hooghiemstra, R. (2000). Corporate communication and ımpression management – new perspectives why companies engage in corporate social reporting. Journal of Business Ethics, 27, 55-68.

Internet: http://web.shgm.gov.tr/tr/preview/4268-shy145 (Date of Access: 12/08/2021)

Internet: https://turkishtechnic.com/TR/Hakkimizda/Organizasyon-Semasi (Date of Access: 31/08/2021)

Internet: https://turkishtechnic.com/TR/Hakkimizda/Ust-Yonetim (Date of Access: 12/08/2021)

Internet: https://turkishtechnic.com/TR/Hakkimizda/Yonetim-Kurulu (Date of Access: 31/08/2021)

Internet: https://www.beycon.com.tr/dis-kaynak-kullanimi-tarihcesi.html (Date of Access: 20/08/2021)

Internet: https://www.corendonairlines.com (Date of Access: 20/08/2021)

Internet: https://www.flypgs.com (Date of Access: 08/09/2021)

Internet: https://www.flypgs.com/pegasus-hakkinda/yetki-ve-sertifikalarimiz (Date of Access: 10/08/2021)

Internet: https://www.freebirdairlines.com (Date of Access: 08/09/2021)

Internet: https://www.freebirdairlines.com/tr/bakim-muhendislik.asp (Date of Access: 12/08/2021)

Internet: https://www.iata.org/en/programs/ops-infra/engineering/ (Date of Access: 20/08/2021)

Internet: https://www.onurair.com (Date of Access: 20/08/2021)

Internet: https://www.onurair.com/tr/kurumsal/detay/Onur-Air-Teknik/15/23/0 (Date of Access: 05/08/2021)

Internet: https://www.sunexpress.com (Date of Access: 20/08/2021)

Internet: https://www.turkishairlines.com (Date of Access: 08/09/2021)

James Ott, "Costs, Competition Drive Labor Issues," Aviation Week & Space Technology, Vol l43, Iss. 21 (Nov. 20, 1995), pp. 46-48.

Jones, C., Hesterly, W.S., 1997. A general theory of network governance: exchange conditions and social mechanisms. Academy of Management Review 22, 911–946.

Julie J. Gentry and David B. ~llenga, "Using Logistics Alliances to Gain a Strategic Advantage in the Marketplace," Journal of Marketing Theory and Practice, VoL 4, No.2 (Spring 1996), pp.38-39.

Michie! R. Leenders, and Jean Nollett, "The Gray Zone in Make or Buy," Journal of Purchasing and Materials Management, Vol 13, No.3 (1984), p. 13.

Munjal, S., Requejob, I., & K.Kundu, S. (2018). Offshore outsourcing and firm performance: Moderating effects of size, growth and slack resources. Journal of Business Research, doi: 10.1016/j.jbusres.2018.01.014

Mustafa Tanyeri ve Aytekin Fırat, Rekabet Değişkeni Olarak Dış Kaynak Kullanımı, Dokuz Eylül Üniversitesi Sosyal Bilimler Dergisi, 2005, Cilt:7, Sayı:3, s.269.

Pierre Condom, "Is Outsourcing the Winning Solution?" Interavia Business & Technology, Vol. 49, No. 578 (May 1994), p. 34.

Pilling, M., 2005. Capacity crossroads. Airline Business 21, 50–52.

Quinn, J. B., & G. Hilmer, F. (1994). Strategic outsourcing. Sloan Management Review, 35(4), 43-55.

Rieple, A., Clive Helm, “Outsourcing for competitive advantage: An examination of seven legacy airlines ” Journal of Air Transport Management, Volume 14, Issue 5, September 2008, pp. 280-285.

Sönmez, R. (2008). 4 ve 5 Yıldızlı Konaklama İşletmelerinde Banket (Ziyafet) Hizmetleri Yönetimi (Ankara İlinde Bir Uygulama). Yüksek Lisans Tezi, Balıkesir Üniversitesi Sosyal Bilimler Enstitüsü, Balıkesir.

Sullivan, D., “The outsource solution”, National Petroleum News, January 1993, p. 68.

Ulli Arnold, New Dimensions of Outsourcing: A Combination of Transaction Cost Economics and The Core Competencies Concept, European Journal ofPurchasing & Supply Management, Vol:6, 2000, s.23-24.

Yıldız,Ö. E. (2016). Turistik Ürün Olarak Gastronomi. (Ed.: Hülya Kurgun, Demet Bağıarn Özşeker), Gastronomi ve Turizm. Detay Yayıncılık, Ankara.

INTERNAL AND EXTERNAL ANALYSIS OF AIRLINE INDUSTRY: FUTURE OF THE INDUSTRY ACCORDING TO SECTORAL REPORTS

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Abstract

Purpose *- Aviation has advanced technically, organizationally and economically since the flight of the first aircraft, and has developed different activities and operational processes in new areas. However, these advances and developments have both positive and negative aspects. Critical events arround world have always great impact on strategic components of countries and industries. Those developments might be both positive and negative for concerning field. In both cases, it may require development, corrective actions and change in terms of general understanding and application. The changing world as a result of technological advances has a significant impact on the aviation industry, which is a sensitive and important element on the basis of countries. As a result of the changes experienced, the activities of the airline companies as required by their own structures in the face of various situations can be an effective strength in favor of the companies, while the insufficient points may emerge as a kind of weakness. In addition, the aviation industry, as a country's face to the outside, is greatly affected by global-scale crises, events, sectoral developments and paradigm shifts. These external factors can create opportunities for companies in the industry as well as create unexpected threats for the industry. In this respect, the current situation of the global airline industry and the future implications of the all industry developments will be analyzed and evaluations will be made based on market outlook, passenger feedbacks, industry forecasts, future forecasts, security and safety reports of ICAO, IATA, FAA, CAA, Boeing and Airbus. In our study, it is aimed to reveal the strengths and weaknesses of the companies operating in the industry, as well as the opportunities and threats arising from external factors, by considering the activities, operational processes, expectations, financial situations and human resources of the airline industry. Scope of study covers the global airline industry and its implications.*

Design / Methodology / Approach *- Evaluations were made using the qualitative SWOT analysis method, accompanied by the quantitative data obtained from the reports prepared by the regulatory and advisory organizations for the air transportation industry. Quantitative data consists of total spending of air transportation industry, number of passenger traveled, revenue passenger kilometres (RPKs), cargo ton kilometres (CTKs), labour costs, number of employment, unit labour cost, fuel costs, spendings and their fluctuations on annual basis.*

Findings –*In the paper,it has been determined that the strengths of the airline industry are increased demand and air traffic, market structure and well trained personnel, while its weaknesses are technical infrastructure, capacity constraints, complex network and personnel optimization. On the other hand, external threats, mostly consist of factors such as economic crises, wars, epidemics, safety and security threats, weather conditions, fuel prices and lack of personnel. All kinds of technological progress, investment, improvement of operational processes, mutual communication and partnership among industry members create opportunities for the industry.*

Originality / Value - *The study contributes to the literature in terms of evaluating the reports and statements of airline companies, international institutions and organizations about the current and future situation of the airline industry in this context.*

Keywords – *Aviation, Airline Industry, Internal and External Analysis, Sector Analysis*

References

Airbus. (2020). *Global Market Forecast 2019-2038.* Leiden, Netherlands: Airbus.

Belobaba, P. (2002). *Handbook of Airline Economics.* McGrawHill.

Belobaba, P. P., & Jain, H. (2013). Alliance revenue management in practice: Impacts of bid price sharing and dynamic valuation. *Journal of Revenue and Pricing Management*, 475-488.

Belobaba, P., Odoni, A., & Barnhart, C. (2016). *The Global Airline Industry.* Chichester: John Wiley and Sons Ltd.

Boeing. (2021). *Commercial Market Outlook 2021–2040.* Illinois, USA: Boeing.

CAA. (2021). *CAA CAP 1223- Framework for an Aviation Security Management System (SeMS).* London: United Kingdom Civil Aviation Authority.

FAA. (2020). *Aviation Forecasts.* Washington, DC, USA: FAA.

IATA. (2018). *Future of the Airline Industry.* Montreal, Canada: IATA.

IATA. (2019). Iata Global Passenger Survey Highlights. In International Air Transportation Association.

IATA. (2020). *20 Year Passenger Forecast.* Montreal, Canada: IATA.

IATA. (2021). *Economic Per formance of the Airline Industry.* Montreal: International Air Transportation Association.

ICAO. (2021). *Security is Everyone's Responsibility!* ICAO Security and Facilitation: https://www.icao.int/Security/Security-Culture/Pages/default.aspx adresinden alındı

SUSTAINABILITY BY STRATEGIC APPROACHES FOR AVIATION SECTOR IN GLOBAL CRISIS (COVID 19)

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Abstract

Purpose – *The aim of this article is to reveal views and Strategic Aviation Management (SAM) approaches, which can inspire the sustainability in aviation during global crisis.*

Design / Methodology / Approach – *In this article, we will present the literature review, face-to-face interview methods with the crew currently flying in airlines based in Southeast (SE) Asia, and experiences based on traditional and cultural factors. Also, the precautions versus Covid 19 applied by local authorities are taken into consideration.*

Findings – *The Covid 19 global disease has caused about 400,000 aviation employees fired, furloughed, or notified they may lose their positions and jobs. Greatest effects have occurred in the areas related to economics in aviation. It has been caused approximately, $ 371 billion loss of gross customers operating incomes of airlines and entire decrease of 2,699 million passengers. The 43 commercial airlines had gone collapsed during the period, and Airports Council International (ACI) Europe defined that 193 (mostly local) of the 740 airports in Europe were also threatening bankruptcy. For these unexpected reasons, the aviation sector has become complicated and been faced with chaotic environment. Although many airlines were bankrupted, some airlines were increased revenues by strategic partnerships, such as merger and acquisitions during the crises. Crises requires long term approaches rather than the current solutions. Strategy is an approach of action planned to achieve a long-range or overall aim. Strategic approach causes a rapid response and change in many spheres, from social life to the aviation sector.*

Originality / Value – *This article has an original feature for sustainability current global crises by Strategic Aviation Management approaches as it will present face-to-face interview methods and experiences based on experimental factors with currently flying crew in SE Asian aviation sector and provides up-to-date information on the aviation industry.*

Keywords – *Aviation, Global Disease, Management, Strategy, Sustainability.*

References

ICAO (26 October 2021), Effects of Novel Coronavirus (COVID-19) on Civil Aviation: Economic Impact Analysis, Montréal, Canada, Economic Development, Air Transport Bureau, Available at http://www.asma.org/asma/media/AsMA/Travel-Publications/COVID-19/Effects-of-Novel-Coronavirus-(COVID%E2%80%9019)-on-Civil-Aviation-Economic-Impact-Analysis.pdf

Slotnic, D (May 12, 2020), Some of the world's airlines could go bankrupt because of the COVID-19 crisis, according to an aviation consultancy. Business insider. https://www.businessinsider.com/

Kelly, J. (Feb 1, 2021), Airlines Lost Over 400,00 Workers—United Airlines Announced Another 14,000 Jobs May Be Lost, Introducing the Forbes.com subscription. Access 30.10.2021 14:05

Session II

Session Chair

Assoc. Prof. Dr. Dilek KOÇAK

IN-FLIGHT PRODUCT DIVERSITY AND PRICE COMPARISON

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Abstract

Purpose *– In-flight purchasing behavior is an important issue as it creates ancillary revenue for airlines as well as being preferred by passengers. Among the ancillary revenues; paid seat sales, extra baggage allowance, in-flight entertainment package sales, sales of equipment transportation services such as sports equipment, and paid in-flight catering sales to stand out. Airlines, which offer all of the ancillary revenue items to the passengers as pre-flight offers, offer only in-flight refreshments, which are the subject of the study, during the flight. In the first stage of the research, the in-flight catering variety of the airlines carrying out domestic scheduled passenger transportation in Turkey was revealed. In the second stage, the economy class ticket prices of the flag carrier airline, which offers free in-flight refreshments as part of the core service, and relatively low-cost airlines that offer paid in-flight refreshments, including and excluding in-flight catering, were compared. By emphasizing the importance of in-flight refreshments in increasing ancillary revenues, suggestions will be made for airline operators and passengers.*

Design / Methodology / Approach *– The fact that competition is increasing day by day and the damage caused by the Covid-19 pandemic to the industry is huge, causing airlines to concentrate more on revenue-increasing efforts. In order to reduce the costs of in-flight refreshments and to generate ancillary revenue, airlines have reduced the standard refreshments they offer, as well as increased their paid catering options. IdeaWorks' report about airlines ancillary revenues for 2020 also supports this. According to the report, the share of ancillary revenue in Wizz Air's total income has reached 55%. In the same report, Pegasus Airlines from Turkey ranks 8th with an ancillary revenue rate of 33.8%, with average ancillary revenue of $16.31 per passenger. In the research, the paid and free products and services offered to economy class passengers by airlines carrying out scheduled domestic passenger transportation in Turkey were determined by content analysis.*

Findings *– In the research, the paid and free products and services offered to economy class passengers by airlines carrying out scheduled domestic passenger transportation in Turkey were determined by content analysis. Sandwiches and water are served free of charge on domestic flights. It is seen that the serving of hot drinks has been terminated within the scope of Covid-19 measures. It has been determined that Anadolujet Airlines, which continues its activities as a sub-brand of Turkish Airlines, has paid refreshments on international flights and only water on domestic flights. It has been determined that SunExpress airlines, which was jointly established by TA and Lufthansa Airlines, do not offer free catering for low-priced standard ticket passengers, and that there is a high variety of catering for domestic and international flights. Paid refreshments are also available at Pegasus airlines. It is seen that catering and other ancillary revenue products and services are offered in additional packages and/or individually for a fee. In general, it is seen that additional products and services are more affordable for passengers if they are purchased in a package rather than individually. In the second*

stage of the research, the prices of services and in-flight products offered by the flag carrier TA for a future flight were compared with the prices of paid services and products in other airlines that can be defined as low-cost (Anadolujet, SunExpress, Pegasus). The domestic destinations from which the said 4 airlines operate non-stop flights were determined and the most affordable flight was selected, and the basic service, the air ticket, and the paid and free refreshments offered were compared. When only the ticket price is compared, it has been determined that the most affordable ticket is in SunExpress, and the most expensive ticket is in TA. When the standard services and products offered by TA, including tickets, catering and in-flight entertainment are included in the ticket price, when purchased with a fee from other airlines, it has been determined that the most expensive ticket is with Pegasus Airlines and the cheapest ticket is with SunExpress Airlines. It has been determined that the paid offer of standard services reduces the difference between ticket prices, and the ticket prices of airlines that can be considered as low-cost approach the airline operating as the flag carrier. It is important to increase the revenues of the airlines and to increase the ancillary revenue generating products and services. At the same time, by reducing the free products, operational processes can be shortened and time can be saved, and the workload of the cabin crew can be reduced at the same time. Increasing the paid products and services will also increase the passenger's demand, which will increase the passenger's occupancy rate. At the same time, the costs of the operational process for paid products and services will be covered from here, preventing extra costs to the airline business, and the profits from ancillary revenues will increase. It is obvious that paid and free in-flight refreshments and in-flight entertainment options play an important role in enriching the travel experience of children. For this reason, it is considered that it will gain more importance in terms of both flight costs and flight comfort, especially when passengers with children make their decisions by looking at the in-flight treats and services offered.

Originality / Value *– The ticket price is one of the most influential factors in the purchasing decision process in air travel. In addition to the ticket price, it has also been emphasized in previous studies that the variety of products / services offered and their prices can be effective in the purchasing decisions of customers. The research is unique in that it reveals that the products/services offered and their prices should be taken into consideration rather than just the ticket price, and that sometimes what seems expensive is actually lower, and on the contrary, what looks cheap is more expensive.*

Keywords *– Airline marketing, Airline ancillary revenues, In-flight catering, In-flight purchasing.*

References

Hoszman, A. (2015). Typology of ancillary revenue in airlines. Journal of Management and Financial Sciences, 8(22), 57-68.

Klislinar, E., & Widjaja, A. W. (2020). Analysis of Willingness to Pay for Ancillary Revenue of Full Service Airline (The Case of Garuda Indonesia). KnE Social Sciences, 1213-1230.

Önen, V. & Karabulut N. (2018) Havayolu Uçak İçi İkram Satış Tahmin Modeli Bir Havayolu Uygulaması. Avrasya Sosyal ve Ekonomi Araştırmaları Dergisi, 5(3), 100-121.

Sengur, F. K., Ustaomer, T. C., & Uzgor, M. (2017). A research on ancillary product buying intentions of domestic airline passengers in Turkey. Journal of Management Marketing and Logistics, 4(4), 456-464.

Warnock-Smith, D., O'Connell, J. F., & Maleki, M. (2017). An analysis of ongoing trends in airline ancillary revenues. Journal of Air Transport Management, 64, 42-54.

2021 CarTrawler Yearbook of Ancillary Revenue,
https://ideaworkscompany.com/wp-content/uploads/2021/09/2021-Ancillary-Revenue-Yearbook.pdf

DOES FLIGHT CREW WORK MOTIVATION AND ENTHUSIASM CHANGE WITH INCREASING TENURE? THE CASE OF TURKISH AIRLINES

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Abstract

Purpose – *There is a strong impression about Turkish Airlines' flight crews that their work enthusiasm and motivation change with increasing tenure. In the study, it was aimed to investigate whether there is such a change, and if there is, whether factors such as age, work experience, gender, marital status and education level have an effect on this or not.*

Design / Methodology / Approach – *This thesis will try to answer the questions with the five main hypotheses as shown below.*
H1: Flight crew's work motivation levels differ according to sociodemographic attributes, with increasing tenure.
H2: Flight crew's work motivation levels differ according to work life attributes, with increasing tenure.
H3: Flight crew's work enthusiasm levels differ according to sociodemographic attributes, with increasing tenure.
H4: Flight crew's work enthusiasm levels differ according to work life attributes, with increasing tenure.
H5: There is positive correlation between the work motivation and work enthusiasm of flight crew.
Universe and Sample: n = (N t2 p q) / (d2 (N-1) + t2 p q), Salant & Dillman (1994) formula used to calculate the sample size. At the end of the data collection process, 235 surveys were evaluated and analysed. The data in the research was collected through an online questionnaire form. There are 7 questions in total to determine the gender, age, education status, marital status, working time in the aviation sector, working time in the company and position in the flight crew at the personal information form. Intrinsic Motivation (IM) Scale, Extrinsic Motivation (EM) Scale and Work & Well-being Survey used to measure motivation and work & well-being levels of flight crew. SPSS 20 program was used to analyse the data obtained in the study.

Findings – *A Summary of Results / Hypotheses*
Hypotheses Acceptance / Rejection
H1a2: Flight crew's extrinsic motivation levels differ according to gender. Acceptance
H3a1: Absorption levels of flight crew personnel differ according to gender. Acceptance
H3a2: Vigor levels of flight crew personnel differ according to gender. Acceptance
H4c2: Vigor levels of flight crew personnel differ according to position in the flight crew. Acceptance
H5a: There is a positive correlation between the intrinsic motivation and absorption level of the flight crew. Acceptance

H5b: There is a positive correlation between the intrinsic motivation and vigor level of the flight crew. Acceptance

H5c: There is a positive correlation between the intrinsic motivation and dedication level of the flight crew. Acceptance

Originality / Value – *Flight crews are the airlines' most important account executives. By taking on more responsibilities than many other employees in the service sector, they affect passenger satisfaction, company profitability, and thus sustainability in line with their business performance. Employee motivation is also directly related to the sustainability of performance (Chaudhry, 2008). Similar to motivation, work enthusiasm can also vary over time and from person to person. It is important to examine the change in employee motivation and enthusiasm over time. Otherwise, employee's productivity level starts to decline. At this stage, companies must recognize the problem.*

Keywords – *Extrinsic Motivation, Flight Crew, Intrinsic Motivation, Work Enthusiasm*

References

Açıkgöz, B. (2009). Evaluation of the relationship between work attachment and work stress and the health effects of the type of organizational culture in Zonguldak province center first level health institutions. Specialty Thesis in Medicine. Zonguldak Karaelmas University Faculty of Medicine, Zonguldak.

Adair, J. (2013). Effective Motivation. İstanbul: Babıali Kültür Publication.

Ademoğlu, R. (2020). Investigation of the effect of psychological contract on work engagement: A research in the aviation sector. Master's Thesis, Yıldız Teknik University Social Sciences Institute, İstanbul.

Agyemang, C., & Ofei, B. (2013). Employee work engagement and organizational commitment: a comparative study of private and public sector organizations ın Ghana. European Journal Of Business And Innovation Research, 1(4), 20-33.

Ağraz, S. (2006). Contribution of airline companies to employment. Master Thesis. Istanbul University Institute of Social Sciences Istanbul.

Ak, B. (2009). Arrangement and Display of Data. Ankara: Asil Publication.

Aktunç, İ. (2013). Cabin crew description. Journal Of Turkish Airlines Flight Training Department Cabin Interphone. 1, 9-10.

Alarcon, G. M., & Edwards, J. M. (2011). The relationship of engagement, job satisfaction and turnover intentions. Stress and Health, 27, 294-298.

Algan Atabay, T. (2019). A field study to determine the effect of personality characteristics of employees on work commitment levels and burnout behaviors. Unpublished Master's Thesis, Dokuz Eylül University, Social Sciences Institute, İzmir.

Alsat, Ç. (2016). An application for determining the effects of the factors affecting employee motivation on job satisfaction. Doctoral Thesis. Selçuk University Institute of Social Sciences, Konya.

Altok, T. (2009). A comparative research on factors affecting employees' motivation in service and manufacturing businesses. Master Thesis, Süleyman Demirel University Institute of Social Sciences, Isparta.

Andrew, O. C., & Sofian, S. (2012). Individual factors and work outcomes of employee engagement. Procedia-Social and Behavioral Sciences, 40, 498-508.

Arslan, P. L. (2013). Employee motivation (Serik State Hospital Example), Master Thesis. Beykent University Institute of Social Sciences, İstanbul.

Asio, J. M. R., & Jimenez, E. (2020). Professional development, organizational climate, supervisory rapport and overall satisfaction of employees: An attitudinal study. International Journal of Scientific Research in Multidisciplinary Studies, 6(4), 34-40.

Aslan, M., & Doğan, S. (2020). A theoretical perspective on the interaction of extrinsic motivation, intrinsic motivation and performance. Journal of Süleyman Demirel University Vizyoner, 11(26), 291-301.

Aslanadam, B. (2011). Motivation of health personnel and related research, Unpublished Master's Thesis, Dokuz Eylül University Institute of Social Sciences, İzmir.

Atılgan, H. (2006). Item and test statistics, Measurement and Evaluation in Education, 1, 353-375.

Attridge, M. (2009). Measuring and managing employee work engagement: A review of the research and business literatüre. Journal of Workplace Behavioral Health, 24(4), 383-398.

Bakan, G. (2011). Örgütsel Stratejilerin Temeli Örgütsel Bağlılık, Kavram, Kuram, Sebep ve Sonuçlar. Ankara: Gazi Kitabevi.

Bakker, A. B. (2011). An evidence-based model of work engagement. Current directions in psychological science, 20(4), 265-269.

Bakker, A. B., & Demerouti, E. (2008). Towards a model of work engagement, Career Development International, 13(3), 209-223.

Bakker, A. B., & Leiter, M. (2017). Strategic and proactive approaches to work engagement. Organizational Dynamics, 46(2), 67-75.

Bakker, A. B., & Schaufeli, W. (2008). Positive organisational behavior: engaged employees in flourishing organizations. Journal of Organizational Behavior, 29(2), 147-154.

Bakker, A. B., Albrecht, S. L. & Leiter, M. P. (2011). Key questions regarding work engagement. European Journal of Work and Organizational Psychology. 20(1), 4-28.

Bakker, A. B., Schaufeli, W. B., Leiter M. P. & Taris, T. W. (2008). Work engagement: an emerging concept in occupational health psychology. Work & Stress. 22(3), 187-200.

Bal, E. (2009). Gönülçelen Şirketler. İstanbul: Beta Yayıncılık.

Baltaş, A. (2009). The personality of the cabin crew. Journal of TASSA Airlines Cabin Crew Association, 9, 22-23.

Banihani, M., Lewis, P. & Syed. J. (2013). Is work engagement gendered? Gender in Management: An International Journal. 28(7), 400-423.

Barbuto Jr, J. E., & Scholl, R. W. (1999). Leaders' motivation and perception of followers' motivation as predictors of influence tactics used. Psychological Reports, 84(3), 1087-1098.

Başoda, A. (2017). Work engagement: A conceptual analysis. In Pursuit of History- International Journal of History and Social Studies, 9 (17), 71-98.

Bezuidenhout, A., & Cilliers, F. (2010). Burnout, work engagement and sense of coherence in female academics at two universities in South Africa. 36(1), 1-10.

Brislin, R. W., Florencio, Kabigting Jr., Macnab, B., Zukis, B., & Worthley, R. (2005). Evolving perceptions of Japanese workplace motivation. International Journal of Cross-Cultural Management, 5(1), 87-104.

Cazan, A. M. (2015). Learning motivation, engagement and burnout among university students, Procedia-Social and Behavioral Sciences, 187, 413-417.

Cento, A. (2009). The airline industry: Challenges in the 21st Century, Springer, Berlin.

Ceylan, A. (2010). Employment and Labor Relations in Aviation Sector, Master Thesis, Marmara University Institute of Social Sciences, Istanbul.

Chaudhry, S. M. (2008). Enhancing motivation and work performance of the salespeople. The International Journal of Applied Management and Technology, 6(1), 161-181.

Chen, C. F., & Kao, Y. L. (2014). Investigating the moderating effects of service climate on personality, motivation, social support, and performance among flight attendants. Tourism Management, 44, 58-66.

Chen-Shu, C. (2017). Paternalistic leadership and cabin crews' upward communication: The motivation of voice behavior. Journal of Air Transport Management, 62(4), 44-53.

Crawford, E., LePine, J., & Rich, B. (2010). Linking job demands and resources to employee engagement and burnout: a theoretical extension and meta-analytic test. Journal of Applied Psychology, 95(5), 834-848.

Çakır, G. (2009). Motivation tools and locus of control variable according to the demographic characteristics of employees, Unpublished Master's Thesis. Celal Bayar University, Social Science Institute, Manisa.

Çapan, B. (2018). The effect of competencies in the scope of reward on the motivation of worker: Sample of aviation sector. Doctoral Thesis, İzmir Kâtip Çelebi University, Social Sciences Institute, İzmir.

Çırpın, B. K., & Kurt, D. (2016). Service Quality Measurement in Airline Transportation. Journal of Transportation and Logistics, 1(1), 83-98.

Çiçekçioğlu, N. (2003). Hizmet Sektöründe Havacılık Uygulamaları: Teori, Pratik ve Değerlendirme. Bursa: Ulus Yayın Dağıtım A.Ş.

Çolak, N. (2013). Meeting the Changing Expectations in the Aviation Sector with Training and the Role of Cabin Crew in This Process. Journal of Turkish Airlines Turkish Aviation Academy, 6, 38-39.

Davis, G. L., & Bordieri, J. E. (1988). Perceived autonomy and job satisfaction in occupational therapists. American Journal of Occupational Therapy, 42(9), 591-595.

Demerouti, E., Bakker, A., & Gevers, J. (2015). Job crafting and extra role behavior: the role of work engagement and flourishing. Journal of Vocational Behavior, 91, 87-96.

Demir, A. Z. (2016). Air transport sector, İstanbul New Airport and the need for human resources planning, Journal of Academic Social Research, 4 (25), 79-94.

Dereli, C. S. (2012). Uçak Düşse Siz mi Kurtaracaksınız? Kokpitten Bakış, 4(21), 8-9.

Dökmen, T. (2003). Customer Satisfaction in Airline Companies and the Effect of Employee-Customer Comparison on Customer Satisfaction, Doctoral Thesis. Anadolu University Institute of Social Sciences, Eskişehir.

Durmaz, İ. B. V. (2019). The effect of relation between perceived stress and work engagement on decision to leave the job in airline passenger transport industry. Journal of Al Farabi, 3(1), 59-69.

Dündar, S., Özutku, H., & Taşpınar, F. (2007). The effect of intrinsic and extrinsic motivation tools on employee motivation: an empirical review. Journal of Commerce and Tourism Education Faculty, 2, 105-119.

Eren, E. (2010). Örgütsel Davranış ve Yönetim Psikolojisi, İstanbul: Beta Yayıncılık.

Eren, K., Engin, A. S., Pakalın, M. A., & Beköz, Ü. (2019). Job descriptions, employment requirements and determination of the place and form of employment of flight attendants. Journal of Civil Aviation, 1, 4-6.

Ergül, E. (2009). Communication skills in aviation environments. Selcuk University Faculty of Communication Journal, 6(1), 99-106.

Ersarı, G., & Nakyikok, A. (2012). The role of stress management techniques in internal and extrinsic motivation of employees. Atatürk University Journal of Social Sciences Institute, 16(1), 81-101.

Ertürk, R., & Aydın, B. (2015). Investigation of primary and secondary school teachers' perceptions of organizational justice and intrinsic motivation, International Journal of Educational Sciences, 2 (4), 233-246.

Eryiğit, O. (2019). The Relationship Between Job Satisfaction and Motivation: A Research in the Retail Industry, Unpublished Master's Thesis, Bahçeli University, Social Sciences Institute, İstanbul.

Fredrickson, B. L., & Joiner, T. (2002). Positive emotions trigger upward spirals toward emotional well-being. Psychological science, 13(2), 172-175.

Gellatly, I. R., Meyer, J. P., & Luchak, A. A. (2006). Combined effects of the three commitment components on focal and discretionary behaviors: A test of Meyer and Herscovitch propositions, Journal of Vocational Behavior, 69(2), 331-345.

Gençoğlu, T. (2012). Working Guide for Cabin Crews in Civil Aviation. Ankara: SGHM Publication.

Gerede E. (2015). Air Transportation Regulations and Economic Theory and Practice in Turkey, Ankara: Sivil Havacılık Genel Müdürlüğü Yayınları.

Gill, D. S. (2007). Employee selection and work engagement: do recruitment and selection practices influence work engagement? Doctoral Thesis. Kansas State University, Manhattan.

Gorgievski, M. J., Bakker A B., & Schaufeli W. B. (2010). Work engagement and workaholism: Comparing the self-employed and salaried employees. The Journal of Positive Psychology, 5(1), 83-96.

Göktepe, E. A. (2016). The relationship between new career attitudes, perceived executive support, and job passion: A study, Unpublished Doctoral Thesis. Istanbul University Institute of Social Sciences, Istanbul.

Green, J., Liem, G. A. D., Martin, A. J., Colmar, S., Marsh, H. W., & McInerney, D. (2012). Academic motivation, self-concept, engagement, and performance in high school: Key processes from a longitudinal perspective. Journal of Adolescence, 35(5), 1111-1122.

Gülsever, F. (2016). The effect of nepotism in terms of institutionalization in hospitals on commitment and alienation to work. Master Thesis. Marmara University Institute of Health Sciences, Istanbul.

Gümüş, S., & Sezgin, B. (2012). Motivasyonun Örgütsel Bağlılığa ve Performansa Etkisi. İstanbul: Hiperlink Yayınları.

Günay, İ. (2016). Evaluation of the effects of burnout syndrome on organizational commitment, motivation and the intention to leave: a study in Antalya-Kundu hotels region. Master Thesis. Akdeniz University Institute of Social Sciences, Antalya.

Gündüz, A. (2009). The effects of managers 'behaviors in the management process on employees' motivation: an application in educational institutions, Master's Thesis. Beykent University Institute of Social Sciences, İstanbul.

Gürbüz, T. İ. (2015). The effect of emotional intelligence abilities on problem solving: the case of cabin crews in the field of civil aviation, Master's Thesis. Beykent University Institute of Social Sciences, Istanbul.

Gürbüz, T. İ., & Sözen, İ. (2016). A study on the effect of cabin crew emotional ıntelligence abilities on problem solving. BUJSS. 9(1), 39-60.

Haque, M. F., Haque, M. A., & Islam, S. (2014). Motivational theories – A critical analysis. ASA University Review, 8(1), 60-68.

Harputluoğlu, D. D. (2015). Job Passion and the Effect of Work-Family-Work Conflict on the Intention to Leave: A Practice in Hospitality Business Çanakkale Onsekiz Mart University, Institute of Social Sciences, Çanakkale.

Hasanuddin, R., & Sjahruddin, H. (2017). The structure of emotional intelligence, spiritual intelligence and its relationship with work enthusiasm and auditor performance. Structure, 3(1), 67-85.

Hatipoğlu, S., & Örücü, E. (2018). The effect of psychological empowerment on work addiction: an application for health sector employees. Journal of Management and Economics Studies, 16(4), 98-115.

Hernandez, B., Stanley, B., & Miller, L. (2014). Job embeddedness and job engagement: recommendations for a supportive social work environment. Human Service Organizations: Management, 38(4), 336-347.

Hughes, J. C., & Rog, E. (2008). Talent management: a strategy for improving employee recruitment, retention and engagement within hospitality organizations. International Journal of Contemporary Hospitality Management, 20(7), 743-757.

IATA, (2015). Fatigue Management Guide For Airline Operators, https://www.iata.org/contentassets/39bb2b7d6d5b40c6abf88c11111fcd12/fatigue-management-guide_airline20operators.pdf

Işıkçı, S. O. (2018). Organizational attractiveness perception of individuals receiving civil aviation cabin services training, Master's Thesis. Beykent University Institute of Social Sciences, Istanbul.

İbicioğlu, H., Özdaşlı, K., & Yılmaz, T. (2014). A research on intrinsic and extrinsic motivation factors of professional accountants. Mehmet Akif Ersoy University Journal of Social Sciences Institute, 5(9), 93-105.

İnce, C., & Gençay, İ. C. (2017). Tools used in providing employee motivation: a research in uludağ winter hotels. International Journal of Turkish World Tourism Research, 2(2), 112-126.

İşbitir, D. (2018). The effects of motivation methods used in civil aviation performance of cabin attendants. Master's Thesis, Beykent University Institute of Social Sciences, Istanbul.

Jacobs, H. (2013). An Examination of psychological meaningfulness, safety, and availability as the underlying mechanisms linking job features and personal characteristics to work engagement. Doctoral Thesis, Florida International Unıversity, Florida.

Jose, G., & Mampilly, S. R. (2014). Psychological empowerment as a predictor of employee engagement: an empirical attestation. Global Business Review, 15(1), 93-104.

Kahn, W. A. (1990). Psychological conditions of personal engagement and disengagement at work. Academy of Management Journal, 33(4), 692-724.

Kalaycı, Ş. (2006). SPSS Applied Multivariate Statistics Techniques, Ankara: Asil Publication.

Kaliannan, M., & Adjovu, S. N. (2015). Effective employee engagement and organizational success: a case study. Procedia- Social and Behavioral Sciences, 172, 161-168.

Kanfer, R., & Ackerman, P. L. (2004). Aging, adult development, and work motivation. Academy of Management Review, 29(3), 440-458.

Kanfer, R., Frese, M., & Johnson, R. E. (2017). Motivation related to work: A century of progress. Journal of Applied Psychology, 102(3), 338.

Kanten, P. (2016). İşe Adanma. Örgütlerde Davranışın Aydınlık ve Karanlık Yüzü, Ankara: Nobel Akademik Yayıncılık.

Karaarslan, E. (2014). A study on improving service quality in airline passenger transport: the effect of cabin services on customer preferences. Master Thesis. Istanbul University Institute of Social Sciences, Istanbul.

Karataş, M. T. (2019). Job engagement, job crafting and employee performance interaction: A survey in an aviation company. Master's Thesis, Bahçeşehir University Institute of Social Sciences, Istanbul.

Keating, A. L., & Heslin, P. A. (2015). The potential role of mindsets in unleashing employee engagement. Human Resource Management Review, 25, 329-341.

Keser, A., & Yılmaz, G. (2009). Connecting to Work. Behavior in Working Life: Current Approaches. Kocaeli: Umuttepe Bookstore.

Kmiec, J. J. (2010). A study of the effectiveness of a pilot training program in an organizational setting: an intervention for work engagement. Doctoral Thesis. University of Southern Mississippi USA.

Koçel, T. (2018). Business Management, Istanbul: Arkan Publishing.

Koenig, J., & Strauss, C. (2000). Supplements in airline cabin service. İn İnformation and Communication Technologies in Tourism, Springer, Vienna, 365-374.

Koyuncu, M., Burke R. J., & Fiksenbaum. L. (2006). Work engagement among women managers and professionals in a turkish bank: potential antecedents and consequences. Equal Opportunities International, 25(4), 299-310.

Kuyucak, F., & Şengür, Y. (2012). Airline business models: a conceptual analysis, 20th National Management and Organization Congress, İzmir, 24-26 May 2012.

Küçükozan, Y. (2015). Leadership and motivation theories: a theoretical framework. International Journal of Academic Management Sciences, 1(2), 103.

Lam, T., Hanqin Q. Zhang B., & Tom B. (2001). An investigation of employees' job satisfaction: the case of hotels in Hong kong. Tourism Management, 22(2), 157-165

Lantara, I. W. A. (2019). Effect of work motivation on employee performance with job satisfaction as intervening. İndonesia Tourism Development Corporation (ITDC). Jurnal Pendidikan Ekonomi Undiksha.

Lawler E., & Suttle, L. (1973). Expectancy theory and job behavior. Organizational Behavior and Human Performance. 9, 482-503

Locke, E. A., & Latham, G. P. (2006). New directions in goal-setting theory. Current directions in psychological science, 15(5), 265-268.

Luthans, F. (2011). Organizational Behavior: An Evidence-Based Approach. NewYork: McGraw-Hill Irwin.

Macey, W. H. et al. (2009). Employee Engagement: Tools For Analysis, Practice, And Competitive Advantage. London: Blackwell.

Macey, W., & Schneider, B. (2008). The meaning of employee engagement. Industrial and Organizational Psychology, 1(1), 3-30.

Maslach, C., & Leiter, M. P. (1997). The Truth About Burnout: How Organizations Cause Personal Stress and What To Do About It. San Francisco: Jossey-Bass.

Maslach, C., Schaufeli. W. B., & Leiter, M. P. (2001). Job burnout, Annual Review of Psychology, 52, 397-422.

McClelland, D. (2005). Achievement motivation theory. Organizational Behavior: Essential Theories of Motivation and Leadership, 46-60.

McConnell, C. R. (2011). Addressing employee turnover and retention: Keeping your valued performers. The Health Care Manager, 30(3), 271-283.

Mercanlıoğlu, Ç. (2012). The relationship between performance management in organizations and motivation of employees, Journal of Organization and Management Sciences, 4(1), 41-52.

Metin, Ü. B. (2010). The antecedents and consequences of burnout, work engagement and workaholism, Unpublished Master's Thesis, Middle East Technical University Institute of Social Sciences, Ankara.

Meyer, J., Becker, T., & Vandenberghe, C. (2004). Employee commitment and motivation: a conceptual analysis and integrative model. Journal of applied psychology, 89(6), 991.

Nameghi, E. N., & Ariffin, A. A. (2013). The Measurement scale of airline hospitality: cabin crew's performance perspective. Journal of Air Transport Management, 1(9), 1-9.

Newstrom, J. W., & Davis, K. (1993). Organizational Behavior: Human Behavior At Work. McGraw-Hill, Inc.

Norman, P., Boer, H., & Seydel, E. R. (2005). Protection motivation theory. Predicting health behaviour, 81, 126.

Okumuş, A., & Asil, H. (2007). Investigation of the effect of perception of service quality on the general satisfaction levels of airline passengers, Istanbul University Faculty of Business Business Journal, 36 (2), 7-29.

Orhaner, E., & Mutlu, S. (2018). The effect of job satisfaction of healthcare personnel on motivation, International Health Management and Strategies Research Journal, 4(1), 483-500.

Osterloh, M., & Frey, B. S. (2000). Motivation, knowledge transform and organisational forms. Organisation Science, 11(5), 538-550.

Önen, V. (2016). Havacılıkta Emniyet Kültürü-İklimi. Ankara: Nobel Yayınları.

Özdaşlı, K., & Akman, H. (2012). Gender and organizational status differentiation in intrinsic and extrinsic motivation: Türk Telekomünikasyon A.Ş. a research on their employees. Journal Of Süleyman Demirel University Visionary, 4(7), 73-81.

Özdevecioğlu, M. (2003). A study to determine the effects of perceived organizational justice on aggressive behaviors between individuals. Erciyes University Faculty of Economics and Administrative Sciences Journal, 78, 77-96.

Özer, P. S., & Topaloğlu, T. (2008). Content theories in motivation. Leadership and Motivation. 1-20.

Özkalp, E., & Meydan, B. (2015). Analysis of the Turkish reliability and validity of the Engagement Scale developed by Schaufeli and Bakker. Business, Power Industrial Relations and Human Resources Journal, 17(3), 1-19.

Öztürk, A. (2019). The effects of motivational factors on the staff in civil aviation ground handling and the investigation of the relationship between the motivational factors and the work performance, the case of Istanbul province, Master's Thesis İstanbul Okan University Institute of Social Sciences, İstanbul.

Paşamehmetoğlu, A., & Yeloğlu, H. O. (2013). Organizational Behavior, Istanbul: Beta Publishing.

Pienaar, J., & Willemse, S. A. (2008). Burnout, engagement, coping and general health of service employees in the hospitality industry. Tourism Management, 29(6), 1053-1063.

Plant, E. A., & Devine, P. G. (1998). Internal and external motivation to respond without prejudice. Journal of personality and social psychology, 75(3), 811.

Polat, Ö., Tuysuz, M., & Yener, R. (2018). A study on the impact of work engagement on motivation of librarians: evidence from Turkish private universities, Uşak University Journal of Social Sciences, 11(9), 191-206.

Prideaux, B., & Kim, S. (2006). The relationship between airline cabin service and national culture: a cabin crew perspective. Managing Tourism and Hospitality Services, 218-224.

Rhoden, S., Ralston, R., & Ineson, E. M. (2008). Cabin crew training to control disruptive airline passenger behavior: a cause of tourism concern? Tourism Management, 29, 538-547.

Riggio, R. E., Murphy, S. E., & Pirozollo, F. J. (2001). Multiple Intelligences and Leadership. London: Lawrence Erlbaum Associates Publishers.

Robbins, S., & Judge, T. (2012). Organizational Behavior. Ankara: Nobel Publishing.

Roberts, D. R., & Davenport, T. O. (2002). Job engagement: Why it's important and how to improve it. Employment Relations Today, 21-29.

Robson, C. (2002). Real World Research: a Resource for Social Scientists and Practitioner-Researchers. Oxford: Blackwell Publishers Ltd.

Rothbard, N. P., & Patil, S. V. (2011). Being There: Work Engagement and Positive Organizational Scholarship. New York: Oxford University Press.

Rothmann, S., & Rothmann, S. (2010). Factors associated with employee engagement in South Africa. SA Journal of Industrial Psychology, 36(2), 1-12.

Sabuncuoğlu, Z., & Tuz, M. (2008). Organizational Psychology. Bursa: Alfa Actual Publication.

Saks, M. A. (2006). Antecedents and consequences of employee engagement. Journal of Managerial Psychology, 21(7), 600-619.

Salant, P., & Dillman, D. A. (1994). How to Conduct Your Own Survey. New York: John Wiley and Sons.

Salmela-Aro, K., Hyvönen, K., Feldt, T., Kinnunen, U., & Mäkikangas, A. (2009). Young managers' drive to thrive: A personal work goal approach to burnout and work engagement. Journal of Vocational Behavior, 75(2), 183-196.

Schaufeli, W. B. (2013). What is Engagement? In Employee Engagement in Theory and Practice, London: Routledge.

Schaufeli, W. B., & Salanova, M. (2011). Work engagement: On how to better catch a slippery concept. European Journal of Work and Organizational Psychology, 20(1), 39-46.

Schaufeli, W. B., Salanova, M., Gonzalez-Romá, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A confirmative analytic approach. Journal of Happiness Studies, 3, 71-92.

Schaufeli, W. B., Taris, T. W., & Rhenen, W. (2008). Workaholism, burnout, and work engagement: three of a kind of three different kinds of employee wellbeing? Applied Psychology: An International Review, 57(2), 173-203.

Seijts, G. H., & Crim, D. (2006). What engages employees the most or, the ten C's of employee engagement. Ivey Business Journal, 70(4), 1-5.

Selen, U. (2016). Evaluation of employees perspectives on internal and external motivation techniques: local government example, Doctoral Thesis. Namık Kemal University Institute of Science, Tekirdağ.

Semerci, A. S. (2005). Business motivation and consequences: a case study in the central bank of turkey. Specialization Qualification Thesis. Central Bank of the Republic of Turkey General Directorate of Human Resources, Ankara.

Serinkan, C. (2008). Liderlik ve Motivasyon Geleneksel ve Güncel Yaklaşımlar. Ankara: Nobel Yayın Dağıtım.

Sevinç, H. (2015). Tools used in the motivation of public employees, The Journal of International Social Research, 8(39), 944-964.

SHGM, (2017). Cabin Crew, http://web.shgm.gov.tr/tr/havacilik-personeli/2138-kabin-memuru

SHGM, (2019). Instruction for Cabin Crew Basic Training Institutions, http://web.shgm.gov.tr/documents/sivilhavacilik/files/mevzuat/sektorel/taslaklar/2019/SHT-CCTO.PDF

SHGM, Minimum Requirements, http://web.shgm.gov.tr/tr/havacilik-personeli/2138-kabin-memuru, Date of Access: 05.12.2020.

Sığrı, Ü., & Basım, N. (2006). Analysis of employees' job satisfaction and organizational commitment levels: a comparative study in the public and private sector. Selcuk University Faculty of Economics and Administrative Sciences Journal of Social and Economic Research, 6 (12), 131-154.

Siddiqui, N. N., & Bisaria, G. (2018). Innovative Techniques of Motivation for Employee Retention in Aviation Industry. ANVESHAK-International Journal of Management, 7(1), 136-151.

Soares, M. E., & Mosquera, P. (2019). Fostering work engagement: The role of the psychological contract. Journal of Business Research, 101, 469-476.

Solmuş, T. (2004). İş Yaşamında Duygular ve Kişilerarası İlişkiler, İstanbul: Beta Basım.

Soydan, F. C., & Bahçecik, A. N. (2018). Examination of nurses' addiction to work level. Journal of Human Sciences, 15(4), 2289-2304.

Sökmen, A. (2014). Management and Organization. Ankara: Detay Publishing.

Sözen, C., Yeloğlu, H. O., & Ateş, F. (2009). Keeping silence against inequality: an empirical study on the motivation of blue-collar workers. Selçuk University Journal of the Institute of Social Sciences, (22), 395-408.

Steers, R. M., Mowday, R. T., & Shapiro, D. L. (2004). The future of work motivation theory. Academy of management Review, 379-387.

Suntur, A. S. (2012). Effects of work and employee qualifications on work satisfaction and motivation in the aviation industry. Doctoral Thesis, İstanbul Teknik University Graduate School of Natural and Applied Sciences, İstanbul.

Süzen, E. (2020). Innovation strategies and working motivations, effects on operating performance: An application in civil aviation operation. Doctoral Thesis, İstanbul Gelişim University Institute of Social Sciences, İstanbul.

Şahinbaş, F. (2018). Workplace friendship and commitment to work with a positive organizational behavior approach: a research on healthcare workers, Unpublished Master's Thesis, Hacettepe University Institute of Social Sciences, Ankara.

Şener, B. (2010). Modern Otel İşletmelerinde Yönetim ve Organizasyon. Ankara: Detay Yayıncılık.

Şimşek, M., & Öge, S. (2014). İnsan Kaynakları Yönetimi. Konya: Eğitim Yayınevi.

Şimşek, Ş., Akgemci, T., & Çelik, A. (2011). Davranış Bilimlerine Giriş ve Örgütlerde Davranış. Ankara: Gazi Kitabevi.

Taufek, M. B. H. F., Zulkifle, Z. B., & Sharif, M. Z. B. M. (2016). Sustainability in employment: reward system and work engagement. Procedia Economics and Finance. 35, 699-704.

Tezeken, Ö. (2015). A qualitative study on the views of trainers and administrators in airline operations related to the civil aviation cabin services training program. Master Thesis. Yeditepe University Institute of Educational Sciences, Istanbul.

Thiagaraj, D., & Thangaswamy, A. (2017). Theoretical concept of job satisfaction-a study. International Journal of Research-Granthaalayah, 5(6), 464-470.

Third, K. (2016). Job satisfaction and motivation. Master Thesis. Karadeniz Technical University Institute of Science, Trabzon.

Tınaz, P. (2013). Çalışma Yaşamından Örnek Olaylar: Motivasyon, İş Tutumları, İş Stresi, İletişim, Mülakat, Performans Değerlendirme, Eğitim, Örgüt İklimi, Örgüt Kültürü, İş Etiği, Mobbing. İstanbul: Beta Yayıncılık.

Tierney, P., Farmer, S. M., & Graen, G. B. (1999). An examination of leaders, medicine, and employee creativity: the relevance of accounts and relatives. Personnel Psychology, 52 (3), 591-620.

Tozkoparan, G. (2008). Liderlik ve Motivasyon (Geleneksel ve Güncel Yaklaşımlar), Ankara: Nobel Basımevi.

Tunçer, P. (2013). Performance evaluation and motivation in organizations, TCA Magazine, 87-108.

Turgut, T. (2011). Passion for work: Workload, flexible working hours, executive support and their relations with work-family conflict, Atatürk University Journal of Economics and Administrative Sciences, 25 (3-4), 155-179.

Turhan, M. (2011). Success Factors in Business. Istanbul: Beta Publishing.

Tutar, H. (2016). Organizational Behavior. Ankara: Detay Publishing.

Ulukuş, K. S. (2016). Motivation theories and leadership, Journal of Academic Social Research, 4(25), 247-262.

Uyar, G. (2015). Organizational commitment and motivation, Master Thesis. Beykent University Institute of Social Sciences, İstanbul.

Weiqi, C. (2007). The structure of secondary school teacher job satisfaction and its relationship with attrition and work enthusiasm. Chinese Education & Society, 40(5), 17-31.

Yazıcıoğlu, Y., & Erdoğan, S. (2004). SPSS Applied Scientific Research Methods, Ankara: Detay Publishing.

Yelkenci, M. (2006). Civil Aviation Training Processes, Ankara: SGHM Publication.

Yıldırım, Bekir, A. (2007). The effects of globalization process on airline companies an application on total quality management in THY A.O., Master Thesis. Marmara University Institute of Social Sciences, Istanbul.

Yılmaz, E. (2015). The importance of ground handling in airline transportation and analysis of ground handling human resources: the case of Esenboğa Airport, Master Thesis. Turkish Aeronautical Association University Institute of Social Sciences, Ankara.

Yıluzar, H. (2016). The relationship between person-organization harmony and commitment to work and organizational commitment: a research in the health sector. Unpublished Master's Thesis, Akdeniz University Institute of Social Sciences, Antalya.

Yildirim, B. I., Uysal, F., & Ilgaz, A. (2019). Personnel selection in airline companies: an application with ARAS method. Süleyman Demirel University Journal of Social Sciences Institute, 2(33), 219-231.

Zhang, H., Ju, Y. H., & Guangjun, X. I. (2018). The effect analysis of Maslow's hierarchy of needs theory in elderly patients with stroke. Chinese Journal of Practical Nursing, 34(14), 1060-1064.

THE IMPACT OF THE COVID-19 PANDEMIC ON TURKISH AIRLINES AND AEROFLOT OPERATIONS IN 2020

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Abstract

Purpose *- The steady growth of commercial aviation transportation has been observed after the Second World War and especially in the last 35-40 years. Even the global crises of 1998 and 2008 could not significantly hinder this growth. However, the COVID-19 pandemic came and air transport suffered the greatest losses. Turkish Airlines and Aeroflot (Russia Federation) are the flag carriers of their respective countries. The purpose of this work is to study the work of Turkish Airlines and Aeroflot in the context of the COVID-19 pandemic. Quarantine is still ongoing in many countries. Therefore, it is advisable to study and use the experience of the two most successful airlines in Eurasia.*

Design / Methodology / Approach *- The article (1, 2019) compares the performance of Turkish Airlines and Aeroflot and shows the advantages and disadvantages of each airline. It is logical to continue this work and analyse how these airlines operate under conditions of the quarantine caused by the pandemic. The financial results of the activities of these two airlines for 2020 (2 and 3, 2020) were used to analyse their activities during quarantine.*

Findings *- It is shown that these two airlines have fewer losses during the pandemic than other Eurasia airlines. These results are discussed in more detail in the full text of the article.*

Originality / Value *- As far as we know, the work of these two airlines has not been considered in this aspect before. Since the COVID-19 pandemic is still not defeated, the results of this work can be used to improve the work of other airlines.*

Keywords: *Aviation transport, COVID-19, quarantine, airline, comparison, Turkish Airlines, Aeroflot.*

References

Eremichev A., Nesip Öğün M., Aslanov M., Beyar S. (2019) Comparison of Turkish Airlines and Aeroflot. Advantages and Disadvantages/ INTAVIC/4th International Aviation Management Conference p. 31-41.

https://investor.turkishairlines.com/en/financial-operational/annual-reports/1/2020

https://www.aeroflot.ru/xx-ru/news/archive/2020

EXAMINING THE MINDFULNESS LEVELS OF AVIATION EMPLOYEES ACCORDING TO DEMOGRAPHIC VARIABLES: THE CASE OF FRAPORT TAV ANTALYA AIRPORT

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Abstract

Purpose- *Along with the world order, the aviation industry is also developing and changing. This change in the industry brings many positive and negative aspects. It is thought that the way to increase positive events and to eliminate negative events or to reduce their effects may be related to the level of mindfulness of the employees. In this study, it is aimed to investigate whether the mindfulness levels of aviation employees differentiate according to their demographic characteristics.*

Design / Methodology / Approach- *Data of the research were collected from 259 employees of Fraport TAV Antalya Airport by online survey method in September 2021. The first part of the survey includes questions about the demographic characteristics of employees, while the second part contains questions about the level of mindfulness. The "Mindful Attention Awareness Scale" was used in the study, and the reliability value of the scale determined as 0,85. Variance and t-test analyses were used to determine how the mindfulness levels of aviation employees differentiate according to their demographic characteristics.*

Findings- *Findings indicate that the mindfulness levels of aviation employees significantly differ depending to age and total seniority, however, there is no significant difference depending to gender, marital status, education, managerial responsibility, working style and seniority in the organization.*

Originality / Value- *In the context of the sensitive work environment of airports, employees are expected to pay attention to each case and situation they encounter while they are working. This can be an explanation why demographic variables exhibit limited significant differences at their mindfulness levels. New research with different demographic variables in different airports can generate available data to observe how mindfulness levels of employees distinguish.*

Keywords - *Mindfulness, Demographic Variables, Aviation Employees*

References

Aktepe, İ., & Tolan, Ö. (2020). Bilinçli farkındalık: güncel bir gözden geçirme. Psikiyatride Güncel Yaklaşımlar, 12(4), 534-561.

Altunışık, R., Coşkun, R., Bayraktaroğlu, S., & Yıldırım, E. (2004). Sosyal Bilimlerde Araştırma Yöntemleri: SPSS Uygulamalı. İstanbul: Sakarya Kitabevi.

BBC. (2015). Taiwan TransAsia pilot shut wrong engine, data confirms. https://www.bbc.com/news/world-asia-33358707

BBC. (2013). Brazil trial over plane crash that killed 199. https://www.bbc.com/news/world-latin-america-23609524

Brown, K. W., Ryan, R. M., & Creswell, J. D. (2007). Mindfulness: Theoretical foundations and evidence for its salutary effects. Psychological inquiry, 18(4), 211-237.

Command of Aeronautics, (2007). Final Report A–Nº 67/Cenipa/2009.

Develi, A. (2020). Bilinçli Farkındalık. Sema Polatcı (Ed.), Kuramsal Temelleriyle Örgütsel Davranış Ölçekleri Rehberi içinde (s. 9-22). Ankara: Nobel.

Gautam, A., & Mathur, R. (2018). Influence of mindfulness on decision making and psychological flexibility among aircrew. Journal of Psychosocial Research, 13(1), 199-207.

Gürbüz, S., & Şahin, F. (2016). Sosyal bilimlerde araştırma yöntemleri. Ankara: Seçkin Yayıncılık.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R.E. (2010). Multivariate data analysis: A global perspective. 7th Edition, Pearson Education, Upper Saddle River.

Krieger, J. L. (2005). Shared mindfulness in cockpit crisis situations: An exploratory analysis. The Journal of Business Communication (1973), 42(2), 135-167.

Langer, E. J. (1997). The power of mindful learning. Addison-Wesley/Addison Wesley Longman

Naik, P., Harris, V., & Forthun, L. (2013). Mindfulness: an introduction. EDIS, 2013(8).

Siegel RD, Germer CK, Olendzki A (2009) Mindfulness: what is it? where did it come from? In Clinical Handbook of Mindfulness (Eds F. Didonna):17-35. New York, Springer.

Session III

Session Chair

Assoc. Prof. Dr. Göknur Arzu AKYÜZ

IN-DEPTH ANALYSIS OF THE DOMESTIC AIR TRANSPORT NETWORK OF TURKEY WITH COMPLEX NETWORK THEORY: 2003-2020

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Abstract

Purpose *– As the air transport market in Turkey has significantly developed over the last two decades, more airports and routes are introduced into the domestic air transport network. The expansion of domestic network of air transportation has peaked in 2019 with 239 direct city pairs (5 times more than in 2003) operated by 9 airlines. In 2003, the structure of the domestic network was centralised around Istanbul and partially Ankara. Over the years, this centrality has spread over more destinations and the network structure has changed considerably. Therefore, this research aims to illustrate and critically analyse the change within the domestic air transport network structure of Turkey over the last two decades to assess the strengths and weaknesses while reflecting the findings for future development.*

Design / Methodology / Approach *– Based on complex network theory, domestic airline network in Turkey is analysed as an undirected small-world and a scale-free network between 2003 and 2020. On top of the investigation of overall evolution of network measures (density, clustering coefficient, path lengths, diameter, and centrality measures) and the topological properties, a multi-layer framework with two layers (core and periphery layers) based on the k-core value is adopted to reveal different characteristics of various airports in terms of capacity flow. The capacity flow (σ) is defined as the total number of seats published by airlines on a city pair and implemented as the weight between two airports within a year. As a result, the interlayer traffic is measured for the multi-layer network using two different measures; (1) weighted degree centrality, and (2) weighted betweenness centrality. This reveals the connectivity of the airline network in Turkey over the years while reflecting the focus of capacity flow through different layers. Essentially, the key airports in terms of sustaining the connectivity among different destinations within different layers are ranked and grouped.*

Findings *– While the results are to be completed, the preliminary results show the extensive growth of the domestic network in Turkey over the last two decades. The multi-layer structure is shown to be applicable to Turkish domestic market even though previous applications of multi-layered network analysis were utilised for larger geographies. Within the core layer, eight airports are identified to be the backbone of the whole network while majority of airports, which are loosely connected to each other and to the core layer, are in the periphery layer. Based on the connectivity, the ranked airports present the importance of relative destinations within the whole network, and this highlights key airports that may be crucial for the domestic network integrity of Turkey in the future.*

Originality / Value *– Understanding air transport networks and their properties have always been an important aspect for economic and market analyses. There are different methodologies implemented to*

analyse various aspects of an air transport network. While one aspect includes developing specific models analysing hub connectivity within a network (i.e. airlines, regional/country) by identifying quantity and quality of connections, other aspects include assessment of a topology analysis in a broader view. Focusing on the topological aspect through the complex network theory, network structure and centrality have an important role in identifying passenger traffic flows by revealing the properties and the homogeneity of an air transport market. Previous research with the application of complex network theory in air transport present a wide range of examples from world-wide air transport networks to individual airline networks. Overall, the literature provides extensive knowledge on the topology analysis of different air transport network structures and properties. Within the Turkish air transport network domain, there has been research on hub and connectivity analysis, however, there is little or no research presenting the network analysis for the Turkish air transport network, specifically for the domestic network. In this research, the complex network theory is applied to assess the evolution of Turkish domestic air transport network with a large dataset dating back to 2003. Essentially, this analysis can present key information for decision makers and analysts based on the broad view of the network while the methodology can enhance the application of complex network theory within the air transport research.

Keywords *– centrality, complex network theory, domestic network in Turkey, multi-layered networks*

References

Albert, R., & Barabási, A. L. (2002). Statistical mechanics of complex networks. Reviews of modern physics, 74(1), 47. DOI: https://doi.org/10.1103/RevModPhys.74.47

Bagler, G. (2008). Analysis of the airport network of India as a complex weighted network. Physica A: Statistical Mechanics and its Applications, 387(12), 2972-2980. DOI: https://doi.org/10.1016/j.physa.2008.01.077

Barrat, A., Barthelemy, M., Pastor-Satorras, R., & Vespignani, A. (2004). The architecture of complex weighted networks. Proceedings of the national academy of sciences, 101(11), 3747-3752. DOI: https://doi.org/10.1073/pnas.0400087101

Bonnefoy, P., & Hansman, R. (2007). Scalability and evolutionary dynamics of air transportation networks in the United States. In 7th AIAA ATIO Conf, 2nd CEIAT Int'l Conf on Innov and Integr in Aero Sciences, 17th LTA Systems Tech Conf; followed by 2nd TEOS Forum (p. 7773). DOI: https://doi.org/10.2514/6.2007-7773

Crucitti, P., Latora, V., & Porta, S. (2006). Centrality measures in spatial networks of urban streets. Physical Review E, 73(3), 036125. DOI: https://doi.org/10.1103/PhysRevE.73.036125

Da Rocha, L. E. (2009). Structural evolution of the Brazilian airport network. Journal of Statistical Mechanics: Theory and Experiment, 2009(04), P04020. DOI: https://doi.org/10.1088/1742-5468/2009/04/P04020

Danesi, Antonio, 2006. "Measuring airline hub timetable co-ordination and connectivity: definition of a new index and application to a sample of European hubs," European Transport \ Trasporti Europei, ISTIEE, Institute for the Study of Transport within the European Economic Integration, issue 34, pages 54-74.

Doganis, R., & Dennis, N. (1989). Lessons in hubbing. The airline business.

Dorogovtsev, S. N., Goltsev, A. V., & Mendes, J. F. F. (2006). K-core organization of complex networks. Physical review letters, 96(4), 040601. DOI: https://doi.org/10.1103/PhysRevLett.96.040601

Du, W. B., Zhou, X. L., Lordan, O., Wang, Z., Zhao, C., & Zhu, Y. B. (2016). Analysis of the Chinese Airline Network as multi-layer networks. Transportation Research Part E: Logistics and Transportation Review, 89, 108-116. DOI: https://doi.org/10.1016/j.tre.2016.03.009

Du, W. B., Liang, B. Y., Hong, C., & Lordan, O. (2017). Analysis of the Chinese provincial air transportation network. Physica A: statistical mechanics and its applications, 465, 579-586. DOI: https://doi.org/10.1016/j.physa.2016.08.067

Gautreau, A., Barrat, A., & Barthélemy, M. (2009). Microdynamics in stationary complex networks. Proceedings of the National Academy of Sciences, 106(22), 8847-8852. DOI: https://doi.org/10.1073/pnas.0811113106

Guida, M., & Maria, F. (2007). Topology of the Italian airport network: A scale-free small-world network with a fractal structure?. Chaos, Solitons & Fractals, 31(3), 527-536. DOI: https://doi.org/10.1016/j.chaos.2006.02.007

Guimera, R., Mossa, S., Turtschi, A., & Amaral, L. N. (2005). The worldwide air transportation network: Anomalous centrality, community structure, and cities' global roles. Proceedings of the National Academy of Sciences, 102(22), 7794-7799. DOI: https://doi.org/10.1073/pnas.0407994102

Hua, G., Sun, Y., & Haughton, D. (2010). Network analysis of US air transportation network. In Data Mining for Social Network Data (pp. 75-89). Springer, Boston, MA. DOI: https://doi.org/10.1007/978-1-4419-6287-4_5

Latora, V., & Marchiori, M. (2002). Is the Boston subway a small-world network?. Physica A: Statistical Mechanics and its Applications, 314(1-4), 109-113. DOI: https://doi.org/10.1016/S0378-4371(02)01089-0

Logothetis, M., & Miyoshi, C. (2018). Network performance and competitive impact of the single hub–A case study on Turkish Airlines and Emirates. Journal of Air Transport Management, 69, 215-223. https://doi.org/10.1016/j.jairtraman.2016.10.003

Li, W., & Cai, X. (2004). Statistical analysis of airport network of China. Physical Review E, 69(4), 046106. DOI: https://doi.org/10.1103/PhysRevE.69.046106

Li, W. K., Miyoshi, C., & Pagliari, R. (2012). Dual-hub network connectivity: An analysis of all Nippon Airways' use of Tokyo's Haneda and Narita airports. Journal of Air Transport Management, 23, 12-16. https://doi.org/10.1016/j.jairtraman.2012.02.002

OAG, 2021. OAG Analytics [WWW Document]. OAG. URL https://analytics.oag.com/ (accessed 4.08.21).

Porta, S., Crucitti, P., & Latora, V. (2006). The network analysis of urban streets: a dual approach. Physica A: Statistical Mechanics and its Applications, 369(2), 853-866. DOI: https://doi.org/10.1016/j.physa.2005.12.063

Reggiani, A., & Nijkamp, P. (2007). Transport networks and metropolitan development: new analytical departures. Networks and Spatial Economics, 7(4), 297. DOI:10.1007/s11067-007-9033-8

Schneider, C. M., Moreira, A. A., Andrade, J. S., Havlin, S., & Herrmann, H. J. (2011). Mitigation of malicious attacks on networks. Proceedings of the National Academy of Sciences, 108(10), 3838-3841. DOI: https://doi.org/10.1073/pnas.1009440108

Sen, P., Dasgupta, S., Chatterjee, A., Sreeram, P. A., Mukherjee, G., & Manna, S. S. (2003). Small-world properties of the Indian railway network. Physical Review E, 67(3), 036106. DOI: https://doi.org/10.1103/PhysRevE.67.036106

Smith, D. A., & Timberlake, M. F. (2001). World city networks and hierarchies, 1977-1997: an empirical analysis of global air travel links. American Behavioral Scientist, 44(10), 1656-1678. DOI: https://doi.org/10.1177/00027640121958104

Suau-Sanchez, P., & Burghouwt, G. (2012). Connectivity levels and the competitive position of Spanish airports and Iberia's network rationalization strategy, 2001–2007. Journal of Air Transport Management, 18(1), 47-53. https://doi.org/10.1016/j.jairtraman.2011.08.004

Sun, X., & Wandelt, S. (2017, July). Does the Chinese airline network become more robust over time?. In 2017 Second International Conference on Reliability Systems Engineering (ICRSE) (pp. 1-6). IEEE. DOI: https://doi.org/10.1109/ICRSE.2017.8030725

Veldhuis, J. (1997). The competitive position of airline networks. Journal of air transport management, 3(4), 181-188. https://doi.org/10.1016/S0969-6997(97)86169-8

Verma, T., Araújo, N. A., & Herrmann, H. J. (2014). Revealing the structure of the world airline network. Scientific reports, 4, 5638. DOI: https://doi.org/10.1038/srep05638

Wang, J., Mo, H., Wang, F., Jin, F. (2011). Exploring the network structure and nodal centrality of China ' s air transport network : A complex network approach. J. Transp. Geogr. 19, 712–721. DOI: https://doi.org/10.1016/j.jtrangeo.2010.08.012

Wang, J., Mo, H., Wang, F. (2014). Evolution of air transport network of China 1930 – 2012. J. Transp. Geogr. 40, 145–158. DOI: https://doi.org/10.1016/j.jtrangeo.2014.02.002

Watts, D. J., & Strogatz, S. H. (1998). Collective dynamics of 'small-world'networks. nature, 393(6684), 440. DOI: https://doi.org/10.1038/30918

Xu, Z., & Harriss, R. (2008). Exploring the structure of the US intercity passenger air transportation network: a weighted complex network approach. GeoJournal, 73(2), 87. DOI: https://doi.org/10.1007/s10708-008-9173-5

Zhang, J., Cao, X. B., Du, W. B., & Cai, K. Q. (2010). Evolution of Chinese airport network. Physica A: Statistical Mechanics and its Applications, 389(18), 3922-3931. DOI: https://doi.org/10.1016/j.physa.2010.05.042

FUTURE TRENDS AND CHALLENGES IN AIR FREIGHT LOGISTICS

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Abstract

Purpose - *Air freight logistics plays a crucial role in the air transport chain and the globalized economy. This study tries to describe the challenges and trends in the air logistics sector considering the effects of sectoral competition, economic factors, and the Covid-19 pandemic.*

Design / Methodology / Approach - *Research design is made with a descriptive research approach, aimed at casting light on air freight logistics through a process of the literature review that enables to describe the challenges various aspects of both the future trends and challenges of air freight logistics.*

Findings - *The air cargo industry is heterogeneous where various types of players and traffic flow exist as the actors. Airports and airlines lie at the heart of most air freight logistics operations, other players are handling companies, customs brokers, and maintenance and fuel suppliers the air freight supply chain has three major actors: shippers, forwarders, and carriers. (Kupfer et al. 2017). Air carriers transport USD 6.8 trillion worth of goods each year, representing 35% of global trade by value. As an example of the range of air cargo loads, in a typical 24 h period, international air cargo transports 80,000 flowers, 140,000 tons of cargo, 200 racehorses, and 1.1 million smartphones (Bartle et al., 2021). The speed of air cargo is especially important in the transportation of perishable products over long distances and products that will provide advantages by the just-in-time production philosophy in the supply chain. Besides the fact that air cargo has a lower risk in cases of damage and loss, air cargo fees being very low compared to the price of valuable and time-sensitive products will make it even more valuable in the future (Yavaş and Arıcıoğlu, 2020). Despite its importance, air freight logistics gets relatively less attention from both theoretical and empirical types of research (Budd and Ison, 2015) The most effective drivers of the air freight industry sector are competition, volatility of oil price, the effect of cheaper sea shipping, overcapacity in the sector (Merkert et al. 2017; Air Cargo World, 2019) merchandise trade, and the share of manufactures in merchandise trade (Kupfer et al. 2017; Chao and Hsu, 2014). Besides, supply and demand balance for air freight logistics services and related infrastructure, the role of pricing in urban road freight transport, and information technologies in transportation affect air freight logistics.*
The Covid-19 epidemic, which has been struggling around the world since 2020, has highly affected the aviation industry. However, air cargo operations have remained relatively stable and awareness of the sector has increased. When we compare the air cargo dedicated flights with passenger flights worldwide, while there is a remarkable increase in air cargo dedicated flights in 2020, (which are more than 16 %) while both domestic and international passenger carried flights have declined dramatically (World Air Transport Statistics, 2021). Besides, the air cargo sector within the scope of combating the epidemic has undertaken an important task in the supply of medical equipment to the whole world and it has played an active role in the distribution of covid-19 vaccines worldwide. We may observe some

geographical effects in air freight logistics. In recent years, the relative ranking of the major cargo airports has changed quite dramatically with a noticeable decline in the relative importance of Western European and North American hubs (e.g., London and Miami) and a fairly dramatic rise in the significance of both East Asian and Middle Eastern airport operations. In 2000, 14 of the top 20 cargo airports in the world (by weight) were located in either the United States or Western Europe. By 2018, Shanghai, Dubai, Taipei, and Doha became emerging markets in trade and therefore, 10 of the top 20 cargo airports are now located within either East Asia or the Middle East. This geographic concentration and regional specialization may reshape the air freight logistics industry in the future (Debbage and Debbage, 2021). If the air freight industry grows steadily, the shortage of freight capacity might be a future challenge.

Air freight supply chains mostly rely on fossil fuels and so carbon emissions, therefore environmental trends like hydrogen fuel cells, renewable energy, etc. may affect the future of air freight logistics (Debbage and Debbage, 2019) The concept of the airport city (aerotropolis), (Kasarda and Lindsay, 2011) might shape the logistics infrastructure of a city regarded as a future trend. Another future trend might be integrators or express carriers (e.g., FedEx, UPS, and DHL) which provide door-to-door collection and delivery services have aircraft fleets and land vehicles. The integrators seem to own most assets of production throughout the logistics value chain, might meet most of the air freight logistic demand, and seems to be important actors in the future. Future trends and challenges and their potential effects are summarized in Table 1. As a conclusion of my study, "The Complex and Heterogeneous structure of the air freight industry" and "changes in oil prices" are the challenges that might have the most potential effect on air freight logistics. On the other hand "Advances in IT and E-commerce" and "Geographic concentration and regional specialization" might be the most effective trends in the future.

***Table 1**. Future Trends and Challenges*

No	***Future Trends and Challenges***	***Expected Potential Effect***
1	*The Complex and Heterogeneous structure of air freight industry*	*Mostly negative*
2	*Oil prices*	*Positive/Negative*
3	*Advances in IT and E-commerce*	*Positive*
4	*Geographic concentration and regional specialization*	*Positive/Negative*
5	*Share of manufactures in merchandise trade*	*Positive/Negative*
6	*Integrators or express carriers*	*Positive*
7	*Environmental trends*	*Negative*
8	*The concept of the airport city (aerotropolis)*	*Positive*
9	*Cheaper sea shipping*	*Negative*
10	*Covid like pandemics, (medicine supply chain)*	*Positive*
11	*Shortage of freight capacity*	*Negative*
12	*Demand and infrastructure balance of air freight logistics services*	*Positive/Negative*
13	*Low-Pricing in urban road freight transport*	*Negative*

Originality / Value *- There are few studies on future trends or challenges of air freight logistics, however, these studies are outdated and deal with trends or challenges of the issue, not both of them. So, this study is original as it is up to date, considering the Covid-19 era and covering both future trends and challenges of air logistics.*

Keywords *- Air freight logistics, supply chain, logistics management, future trends and challenges.*

References

Air Cargo World, (2019). The Power 25: Top Forwarders Face Turbulent Headwinds, June, 6–20.

Bartle, John R., Rebecca K. Lutte, and Deniz Z. Leuenberger (2021). "Sustainability and Air Freight Transportation: Lessons from the Global Pandemic" Sustainability 13, no. 7: 3738.

Budd, L., Ison, S., (2015). Air cargo mobilities: past, present and future. In: Birtchnell, T., Savitzky, S., Urry, J. (Eds.), Cargo Mobilities: Moving Materials in a Global Age. Routledge, New York, pp. 163–179.

Chao, C., Hsu, C. (2014). Cost analysis of air cargo transport and effects of fluctuations in fuel price. J. Air Transp. Manag. 35, 51e56.

Debbage, K., & Debbage, N. (2021). Air Freight Logistics. International Encyclopedia of Transportation, Elsevier.

Debbage, K., Debbage, N., 2019. Aviation carbon emissions, route choice and tourist destinations: Are non-stop routes a remedy? Annal. Tourism Res. 79, j.annals.2019.102765.

Kasarda, J., Lindsay, G., (2011). Aerotropolis: The way we will live next. Allen Lane, London.

Kupfer, F., Meersman, H., Onghena, E., & Van de Voorde, E. (2017). The underlying drivers and future development of air cargo. Journal of Air Transport Management, 61, 6-14.

Merkert, R., Van de Voorde, E., de Witt, J., (2017). Making or breaking – key success factors in the air cargo market. J. Air Trans. Manag. 61, 1–5.

Yavaş V., Arıcıoğlu B.(2020), Hava Kargo Sektörü, Adem, K. A. R. A. SOSYAL, BEŞERİ ve İDARİ BİLİMLER ALANINDA GÜNCEL ARAŞTIRMALAR CİLT II, Duvar Y.,s.165-186.

World Air Transport Statistics, (2021) Plus Edition, International Air Transport Association. Montreal, ISBN 978-92-9264-350-8.

Session IV

Session Chair

Assoc. Prof. Dr. Vildan DURMAZ

SUSTAINABLE AIRPORT TRANSFORMATION: A CASE STUDY ON AMSTERDAM SCHIPHOL AIRPORT

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Abstract

Purpose – *Concerns over global warming and environmental pollution made it necessary to take action to stop the rapidly deteriorating process. Global warming is related to many areas, one of these areas is undoubtedly aviation. The aviation industry has a great contribution to the spread of various emissions that cause global warming. Emissions from flights and the use of fossil fuels are the direct effects of aviation on global warming. In addition to these, it has indirect effects both inside the airport and in many different areas. This situation has pushed us to take precautions and focus more on sustainability. The concept of sustainability can be used in different subjects such as economic, social or environmental sustainability. (Portney, 2015) In this study, environmental sustainability is meant by the concept of sustainability. Since the past years, many programs and policies have been implemented in the name of sustainability in aviation, primarily under the leadership and cooperation of ICAO, IATA and ACRP (Airport Cooperative Research Program). In line with these policies, many sustainability studies from general to specific have been carried out and continue to be done. Some of these studies are flight-based such as fleet arrangement, fuel efficiency, flight waste, and some of them are for airports to be sustainable facilities. The indirect effects of aviation on the environment are largely related to airports. (IATA, tarih yok) (ICAO, 2019) (ACRP, 2016) There are many factors in the relationship of an airport with the environment, such as water and energy used by devices, heating and cooling systems, recycling, separation of toxic wastes, transportation to the airport, the relationship of the airport with natural life, noise and light pollution. (ACRP, 2016) In many airports, it is possible to see sustainability practices realized within the framework of these factors. Amsterdam Schiphol Airport is one of the exemplary airports that has made many practices on sustainability and has experienced and is living most of the sustainable airport transformation. (Schiphol Group, tarih yok) The airport is at 3+ level in the ACA-Airport Carbon Accreditation, the sustainable airport accreditation program of the International Airport Council-ACI (International Airport Council), which works on policies and practices with airports around the world. (ACA, no date) It is thought that it would be beneficial to examine and reveal the transformation of Schiphol Group and Amsterdam Schiphol Airport, which have successfully implemented many sustainability practices, due to these characteristics. In this study, it is aimed to draw attention to the concept of sustainable airport and to reveal the practices of Amsterdam Schiphol Airport, which is a successful example in this field, with various aspects.*

Design / Methodology / Approach – *Since the aim of the study is to reveal sustainability practices with various aspects, qualitative research was found appropriate. In the study, the data obtained by using the case study method, one of the qualitative research methods, were examined empirically in order to*

draw attention to the practices. Since it has sustainability practices in many different areas, Amsterdam Schiphol Airport was chosen as a case study in terms of ease of data collection. In the study, data obtained from data sources such as media, website materials, documents and reports were used. It is aimed to present the collected data in a way that sets an example by evaluating it within the scope of sustainability. The study focuses on the question of "which" sustainability practices are made and "how".

Findings *– When the data obtained from various sources are examined, it is seen that Amsterdam Schiphol Airport has successfully implemented many sustainability practices and supported these practices within the framework of a sustainable plan. As a result of the data collected from the sustainability reports and media materials examined, it was seen that the airport was successful in general sustainability practices. In addition, it has been seen that it is one of the leading airports in the field of "biofuels", which is expected to be heard more frequently in the future.*

Originality / Value *– When the national and international literature is examined, it is seen that there are many valuable works on the sustainable airport, and the works that put the sustainability practices into consideration in an empirical and qualitative way are rare. In order to better understand and assimilate the very valuable concept of sustainability, it is important to examine the different aspects of a particular airport and explain the practices in detail. It is thought that the study will be useful to the literature by serving this issue.*

Keywords *– Airport, energy management, global warming, sustainability.*

References

ACA (No date). Accredited airports across the world, Airport Carbon Accreditation Website, Access date: 28.09.2021 https://www.airportcarbonaccreditation.org/participants/europe

ACRP (2016). National Academies of Sciences, Engineering, and Medicine. ACRP Synthesis 77, Airport Sustainability Practices: A Synthesis of Airport Practice. Washington, DC: The National Academies Press. https://doi.org/10.17226/23644.

IATA (No date). Our actions for the environment, https://www.iata.org/en/programs/environment/, Access date: 04.10.2021

ICAO (2019). 2019 Environmental Report https://www.icao.int/environmental-protection/pages/envrep2019.aspx

Portney, Kent E., (2015). Sustainability, MIT Press, s.6.

Schiphol Group (No date). Moving towards sustainable aviation, https://www.schiphol.nl/en/schiphol-group/page/a-sustainable-future/ Access date: 04.10.2021

SUSTAINABILITY OF RENEWABLE ENERGY RESOURCES AT AIRPORTS AND AIRPORT POLICIES

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Abstract

Purpose – *The importance of renewable energy sources in the world is increasing day by day. With the Paris Climate Agreement, countries are taking steps to keep the world's increasing temperature value and increasing emission level constant and/or reduce it. Therefore, with this agreement, studies and regulations aimed at reducing the use of fossil fuels and increasing the use of renewable energy sources have been accelerated. According to studies, the aviation sector accounts for approximately 3 percent of the total greenhouse gas emissions of the European Union (EU) and more than 2 percent of global emissions in emission generation. With this percentage, aviation is among the top 10 sectors that produce the most emissions. Emissions produced differ according to the service production areas of aviation. One of the biggest shares is taken by the airport sector. According to international developments, airports; It has become mandatory to prepare an action plan on energy use, fossil fuel use, direct / indirect emission production amounts, and the sustainability of these issues. In the light of this information, the aim of this study is; To determine the renewable energy sources that can be used at airports, to examine the renewable energy use and energy efficiency policies of airports, and to supervise the sustainability of these energy sources. As mentioned above, as such studies and regulations are carried out on an international scale, renewable energy resources that can be used by people who have a direct / indirect relationship with airports in the aviation sector will be required more. At the same time, the sustainability of these renewable energy sources is of great importance for airports. Because airports are buildings with high use in terms of energy use and the potential to use scarce resources in the world is quite high.*

Design / Methodology / Approach – *In this study, information about renewable energy sources will be given initially, and a comparison will be made of which fossil energy source used in airports can be replaced by which renewable energy source. In the following sections, information about airports using renewable energy resources will be given and the contribution of renewable energy resources to these airports will be mentioned. In the last part, the definition of sustainability and "Which renewable energy sources can meet the basic requirements of sustainability and can be used sustainably at airports?" question will be answered.*

Findings – *The final findings of this research are as follows; Various renewable energy sources are available in various areas at airports. Airports will have to use renewable energy sources as there are emission reduction efforts on an international scale. Aviation organizations work to reduce the use of emissions and support airports on these issues. Since airports are long-term investments, it makes sense*

for airport management mechanisms to use renewable energy sources if environmental competencies exist. Energy sustainability is absolutely essential for airports, and airports can turn to renewable energy sources more decisively by reducing their energy dependency with various applications. One of the renewable energy sources, especially solar energy is a type of energy with high sustainability for airports.

Originality / Value – *This study examines the availability of renewable energy sources at airports, as well as how airports can facilitate the transition to renewable energy sources, with which policies. The sources to be examined were various books and articles, as well as the sources of international authorities. The part where the study makes a difference is that it examines the energy resources of airports that only produce on-site energy and conveys the full use of sustainable energy resources. This study helps to overcome the ideas that emission reduction and energy sustainability are difficult at airports.*

Keywords *– Solar Energy, Airports, Airports Energy Sustainability, Wind Energy, Airports Using Renewable Energy Sources, Renewable Energy Sources*

References

BAXTER, G., SRISAENG, P., WILD, G., (2018), An Assessment of Airport Sustainability, Part 2—Energy Management at Copenhagen Airport, Basel: Multidisciplinary Digital Publishing Institute Press.

CLEAN ENERGY FINANCE CORPORATION, (2020), Clean Energy And İnfrastructure: Pathway To Airport Sustainability, Sidney: AECOM Australia Pty Ltd.

INTERNATIONAL CIVIL AVIATION ORGANISATION, (2017), Renewable Energy for Airports, Montreal: International Civil Aviation Organisation Press

INTERNATIONAL CIVIL AVIATION ORGANISATION, (2020), A Focus On The Production Of Renewable Energy At The Airport Site, Montreal: International Civil Aviation Organisation Press

NATIONAL ACADEMIES OF SCIENCES, ENGINEERING, AND MEDICINE (2009), Guidebook on Preparing Airport Greenhouse Gas Emissions Inventories, Washington DC: The National Academies Press

NATIONAL ACADEMIES OF SCIENCES, ENGINEERING, AND MEDICINE (2015), Renewable Energy as an Airport Revenue Source, Washington DC: The National Academies Press

YEREL KANDEMİR, SUHEYLA., YAYLİ, MUSTAFA., (2016). Investigation of Renewable Energy Sources for Airports. 10.1007/978-3-319-34181-1_2.

YILDIZ, F., YILMAZ, M.., ÇELİK, A., İMİK E., (2020), Havalimanlarında Yenilenebilir Enerji Kaynaklarının Kullanılması, Journal of Aviation 4(1): 162-174

A BETTER AIRSPACE FOR SHARING: AVIATION-BIRD COEXISTENCE

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Abstract

Purpose – *The aim of this article is to argue the importance of creating an airspace operation that promotes human-wildlife coexistence especially in urban areas.*

Design / Methodology / Approach – *The research utilizes citizen science data of birds around Brisbane airports to demonstrate the aviation activities' impact on biodiversity. This research also present literature review regarding traffic noise's impact on birds' behaviors and the importance of urban environment for birds. The research use weather radar data to capture the birds density in vertical levels.*

Findings – *In the literature review, we found that urban area are very important to birds. Where human beings choose to build up a city is the place that was a habitat for many wild life. Urbanization causes habitat fragmentation of sensitive species. This will cause the loss of biodiversity in urban areas. The aviation activity also drives out sensitive species. The literature and citizen science data also indicates that we have a loss of biodiversity around the Brisbane airport due to noise and aviation activity. The radar data shows a strong overlapping activity area for drone operation and birds' activities. Both drones and birds have an activity altitude around 300m.*

Originality / Value – *Human – wildlife conflict (HWC) is a key topic when we are fighting against climate change and loss of biodiversity. In the aviation sector, bird strikes are the most common HWC issues. With the rapid development of drones and the increasing usage of drones, the aviation sector is facing HWC issues beyond drone-bird collision. The drone noise can cause disturbance to wildlife especially in breeding season. In the dawn of drone operation, we have not prepared our airspace with the mindset of human-wildlife coexistence.*

Keywords – *Human-wildlife conflict, aviation, drone, airspace management, urban planning.*

References

Peinecke, N., & Mühlhausen, T. (2022). Cargo drone airspace integration in very low-level altitude. In Automated Low-Altitude Air Delivery (pp. 247-262). Springer, Cham.

Summers, P. D., Cunnington, G. M., & Fahrig, L. (2011). Are the negative effects of roads on breeding birds caused by traffic noise?. Journal of Applied Ecology, 48(6), 1527-1534

Dominoni, D. M., Greif, S., Nemeth, E., & Brumm, H. (2016). Airport noise predicts song timing of European birds. Ecology and Evolution, 6(17), 6151-6159.

Beninde, J., Veith, M., & Hochkirch, A. (2015). Biodiversity in cities needs space: a meta-analysis of factors determining intra-urban biodiversity variation. Ecology letters, 18(6), 581-592.

THE ROLE OF TRADE COSTS IN THE RELATIONSHIP BETWEEN AIR TRANSPORT AND SUSTAINABILITY: A CROSS-SECTIONAL ANALYSIS

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Abstract

Purpose – *International trade has been increasing more than the nations income necessitating faster and higher volume of goods flowing cross borders at lower costs. While this has led to a rapid expansion of freight traffic and infrastructure projects in air transport, it has also been the source of intense criticism for its negative effects on environment. This study therefore aims to explore the link between development of air transport infrastructure and environmental sustainability by seeking to answer to what extent the level of trade costs play a mediator role in this relationship: does the increased level of extensiveness and condition of air transport infrastructure give rise to the deterioration of environmental sustainability? If so what role trade costs play in this?*

Design / Methodology / Approach – *This research is based on the cross sectional quantitative data of 73 countries for the years 2010, 2012, 2014 and 2016 with a sample size of 292 observations. The data is extracted from the secondary sources: the quality of air transport infrastructure from the World Economic Forum, environmental sustainability from the Sustainability Society Index, TH Köln and trade costs from the UN ESCAP. This research limits the analysis of trade costs to manufacturing goods. For bilateral trade costs, Turkey is used as a reporting country and the rest of the world countries as partners. As per the bilateral data for Turkey, Germany is used being its biggest trading partner in both directions. The research develops hypotheses in pairs amongst the variables. Then it follows Baron and Kenny method to conduct mediation analysis. To determine the mediator effects, Baron & Kenny method requires two main stages to complete. First, there must be a significant correlation between the variables. Second – with the inclusion of mediator variable into the research model – the previous effect of the independent variable on the dependent variable either to reduce or to disappear completely and become insignificant. Upon fulfilling these criteria, research conducts Sobel test further to check and validate mediation analysis.*

Findings – *The results of the test show that trade costs partially mediate the quality (extensiveness and condition) of air transport infrastructure and the environmental sustainability index. While increased level of trade costs has positive effect on the sustainability of environment, the negative impact of the extensiveness and condition of air transport infrastructure continues to keep its significance on the latter.*

Originality / Value – *The rise in international trade has led to a rapid expansion in air transport infrastructures connecting nations to global marketplace with higher volume of freight at lower costs – but not without any trade off: massive projects in air transport infrastructure have been conversely*

attracting many criticisms – if not violent actions – from the opponents due to their presumed adverse effects on the sustainability of the environment. And yet how much of that effect can actually be attributed to the role of trade costs is not very clear in the literature. With the advent of increasing importance of airfreight mode of transport, ongoing work is thus necessary to research the positive as well as negative effects among the variables and this particular research aims to fill this gap and contribute to the field further.

Keywords *– Air Transport Infrastructure, Cross Sectional Analysis, Environmental Sustainability, Mediation Effects, Trade Costs.*

References

Anderson, E. J. Wincoop, v. E. (2004). Trade Costs, National Bureau of Economic Research, Working Paper,10480, https://doi: 10.1257/0022051042177649.

Arvis, J-F. Duval, Y. Shepherd, B. Utoktham, C. Raj, A. (2015). Trade Costs in the Developing World: 1995-2012, Developing Trade Consultants, Working Paper, 2, 1-41.

Baron, R. Kenny, D. (1986). The Moderator - Mediator Variable distinction in Social Psychological Research: Conceptual, strategic and statistical Consideration. The Moderator - Mediator Variable distinction in Social Psychological Research, Journal of Personality and Social Psychology, 1173-1182. https://doi: 10.1037//0022-3514.51.6.1173.

Bartle, J.R. Lutte, R.K. Leuenberger, D.Z. (2021). Sustainability and Air Freight Transportation: Lessons from the Global Pandemic, Sustainability 2021, 13, 3738. https:// doi.org/10.3390/su13073738.

Behar, A. Venables, J. A. (2010). Transport Costs and International Trade, Department of Oxford, Discussion Paper Series, University of Oxford.

Beifert, A. (2016). Role of air cargo and road feeder services for regional airports – case studies from the baltic sea region, Transport and Telecommunication, 17, (2), 87-99, DOI 10.1515/ttj-2016-0008.

Belobaba, P. Odoni, A. Barnhart, C. (2016). The global airline industry, Wiley.

Dente M.R. S., Tavasszy, A. L. (2017). Impacts of trade related sustainability strategies on freight transportation: Modelling framework and application for France, Transportation Research Part D, 58 308–319, https://doi.org/10.1016/j.trd.2017.04.006.

Yee Van Fan, V. Y., Simon Perry, S., Klemes, J. J., Lee, T. C. (2018). Review on air emissions assessment: Transportation, Journal of Cleaner Production, 194, 673-684, https://doi.org/10.1016/j.jclepro.2018.05.151.

Fenleya, A. C., Machadob, V. W., Elton Fernandes, E. (2007). Air transport and sustainability: Lessons from Amazonas, Applied Geography, 27, 63–77, doi:10.1016/j.apgeog.2006.12.002.

Figueroa, M., Lah,O., Lewis M. Fulton, M. L., McKinnon,Geetam Tiwari, G. (2014). Energy for Transport, Annu. Rev. Environ. Resour., 39, 295-325, 10.1146/annurev-environ-031913-100450.

Graver, B., Zhang, K., Rutherford, D. (2019). CO2 emissions from commercial aviation, 2018, ICCT.

Hummels, L. D., Schaur, G. (2010). Hedging price volatility using fast transport, Journal of Int'l Economics, 82, 15-25.

IATA. (2021). Workshop on Environment and Sustainability, Webinar.

ICAO. (2012). Global Aviation and Our Sustainable Future, Rio +20.

ICAO. (2019). Environmental Report, Aviation and Environment.

Jakubiak, M. (2015). Environmental impact of air transport - case study of Krakow Airport, Logistyka 2.

Larson, P.D. (2021). Relationships between Logistics Performance and Aspects of Sustainability: A Cross-Country Analysis, Sustainability 2021, 13, 623, https://doi.org/10.3390/su13020623.

Limao, N. Venables J. A. (2001). Infrastructure, Geographical Disadvantage, Transport Costs, and Trade", The World Economic Review, 15, (3), 451-479. https://doi.org/10.1093/wber/15.3.451.

McMaster, W. (2021). The future of aviation in a world of sustainable transport, EGIS.

Morrell, S. P., Klein, T. (2019). Moving Boxes by Air the economics of international air cargo, Routledge (2.ed).

Mrazova, M. (2014). Sustainable development – the key for green aviation, Incas Bulletin, 6, 1, 109-122, DOI: 10.13111/2066-8201.2014.6.1.10.

Novy, D. (2011). Gravity Redux: Measuring International Trade Costs With Panel Data, Economic Enquiry, 51(1), 101-121. https://doi.org/10.1111/j.1465-7295.2011.00439.x.

OECD. (2008). The Environmental Impacts of Increased International Air Transport, International Transport Forum.

Sim S., Barry M., Clift R., Cowell S., J. (2007). The Relative Importance of Transport in Determining an Appropriate Sustainability Strategy for Food Sourcing, Int J LCA, 12 (6), 422-431, https://doi.org/10.1065/lca2006.07.259.

Sobel, M. (1982). Asymptotic intervals for indirect effects in structural equations models. Sociological methodology, 290-312. https://doi.org/10.2307/270723.

Staboulis, C. Natos, D. Tsakiridou, E. Mattas, K. (2020). International trade costs in OECD countries, Oper Res Int J, 20, 1177–1187. https://doi.org/10.1007/s12351-018-0388-z.

UN ECLAC. (2017). Air transport as a driver of sustainable development in Latin America and the Caribbean: challenges and policy proposals, 359, 7.

Wai-Ming To, Peter K., C., Lee. (2017). A Triple Bottom Line Analysis of Hong Kong's Logistics Sector, Sustainability 2017, 9, 388, MDPI, doi:10.3390/su9030388.

Session V

Session Chair

Prof. Dr. Şükrü AKDOĞAN

IMPACT OF THE EUROPEAN UNION'S RENEWABLE ENERGY LAW AND POLICY ON THE INTERNATIONAL CIVIL AVIATION

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Abstract

Purpose *–Regulations made in the European Union on the increase and promotion of renewable energy use set binding targets in the field of transportation besides electricity and heating & cooling. Within this scope, the binding target, which was set in the Directive 2009/28/EC as minimum 10% renewable energy use in each Member State by 2020, was updated in the Directive 2018/2001 as minimum 14% by 2030. Therefore, a regulatory framework was needed also in the civil aviation sector, which is a part of the field of transportation, to ensure an increase in renewable energy use. Statistically, 13.2% of the emissions in the EU in 2018 arose from the field of transportation, and direct emissions arising from the field of civil aviation constituted a 3.6% portion out of this amount. With these figures, civil air transportation ranked second with respect to emissions, behind only road transportation.*

A study on the CO_2 emissions in the civil aviation sector found that a person's round trip flight from Lisbon to New York causes an emission that is equivalent to the one produced by an average European Union citizen to heat his/her house for a year. If it is assumed that the field of global civil aviation constitutes a country, it is found that this country will rank among the top ten countries by emissions. Furthermore, statements made by the International Civil Aviation Organization before the COVID-19 pandemic point out that the emission level in 2050 is estimated to triple in comparison to the level in 2015. Therefore, decreasing the emissions in the civil aviation sector is clearly important for climate change mitigation.

The European Union Green Deal introduces a strategy requiring a 90% decrease in the emissions produced by the transportation sector, which civil aviation is also a part of, in comparison to the level in 1990 in order to reach the goal of climate neutrality. Likewise, mitigating the polluting emissions caused by planes and airport operations and improving the air quality at airport locations were strategically specified as a goal.

All these data make the use of fuels produced from renewable energy sources instead of fossil fuels in civil aviation important for the European Union, which aims to achieve a climate neutral economy by 2050 as stated in the Green Deal Strategy. Within this scope, the proposal made by the Commission on 14 July 2021 explains what can be done for a sustainable civil aviation. Although the availability of alternative hydrogen- and electricity-powered propulsion technologies for aircraft is promising, it is predicted that the introduction of these technologies to the market will require a long time and effort. However, since the goal is to mitigate emissions in every field of civil aviation, measures will be needed to increase the supply and use of sustainable aviation fuels not only in aircrafts but also at the airports of the Union. Within this scope, with respect to the rate of sustainable aviation fuels in the field of aviation, a target of 5% has been planned for the year 2030, and 63% for the year 2050.

The regulations concerning sustainable aviation fuels in the field of civil aviation are made by the International Civil Aviation Organization. However, the ICAO has not yet specified any binding targets in relation to the use of sustainable aviation fuels for international air transportation. Therefore, the

Commission has prepared draft regulations within the scope of the renewable energy targets of the European Union. These regulations state that the technology needed for the use of sustainable aviation fuels in the field of aviation has not been developed yet, and therefore, it is necessary to wait until 2025 at a minimum for setting mandatory goals and until then continue the efforts for advancing the technology related to sustainable aviation fuels. They also state that, in this way, legal precision and predictability can be ensured in the relevant market.

Nevertheless, major projects have been realized in the European Union in relation to the use of renewable energy, especially solar energy, at airports, and heating & cooling needs have been fulfilled from geothermal heat pumps and biomass at the Arlanda Airport in Sweden. Likewise, at the East Midlands Airport in the United Kingdom, which withdrew from the European Union as of 31 January 2020, electricity was generated from wind power and biomass, and 300,000 tons of CO_2 emission was prevented annually.

Within the scope of the ICAO-EU Assistance Program, jointly organized by the International Civil Aviation Organization and the European Union, support has been provided to fourteen African and Caribbean countries in realizing their own national action plans in the projects they implement to decrease their CO_2 emissions in international civil air transportation. In this way, efforts have been made to increase the use of renewable energy in the field of civil aviation. The European Union, which is predicted to achieve its binding target of 10% in transportation specified in the Renewable Energy Directive 2009/28/EC, will be able to shape the global civil aviation law by setting binding targets concerning renewable energy use in its acquis communautaire also in the field of civil aviation and by playing an active role internationally.

This study is an effort to determine what regulations have been made in the field of renewable energy to reduce CO_2 emissions, which constitute a basic problem in the international civil aviation law, and how the field of global civil aviation has been affected by the European Union law and policy, which aim to increase the use of renewable energy in the field of transportation through binding targets.

Being the leading organization worldwide in the field of renewable energy and having an advanced technology in this field, the European Union shapes the international law by placing its renewable energy legislation in the provisions of the free trade agreements it concludes by third countries. Research on the contribution of these European Union policies to the reduction of CO_2 emissions also in the field of international civil aviation is important since it may ensure that the rules of the International Civil Aviation Organization are implemented by the Member States.

Design / Methodology / Approach *– The design of the research consists of the basic EU documents in the field of renewable energy and the studies of the International Civil Aviation Organization. Within this scope, data were obtained from official texts issued by the European Union and the International Civil Aviation Organization.*

Findings *– Examination of official documents and data revealed that, since the activities in the field of international civil aviation lead to CO_2 emissions, the use of renewable energy in this field was important, this preference would provide major contributions to the mitigation of CO_2 emissions in civil aviation activities, the European Union was accordingly making efforts to prepare legal texts but these efforts would require a long time and work due to the technology in this field being not advanced enough yet, however the European Union had the experience and knowledge which may create an international impact in the field of civil aviation.*

Originality / Value *– This research paper focuses on the use of renewable energy, which is a very new and current topic in the field of civil aviation. From a legal perspective, it examines the contributions of the European Union to the efforts to increase the use of renewable energy in the field of international civil aviation. This work is important since it focuses on a current topic. It will contribute to the field since it is related to a topic not worked on enough yet and is based on the up-to-date legal documents of the European Union in this field.*

Keywords *– CO_2 Emissions, European Union, ICAO, Renewable Energy, Sustainable Aviation Fuels.*

References

European Commission. (2019). European Green Deal, Retrieved from https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1576150542719&uri=COM%3A2019%3A640%3AFIN.

European Commission. (2021). Proposal for a Regulation of the European Parliament and of the Council on ensuring a level playing field for sustainable air transport, Retrieved from https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:52021PC0561.

European Parliament and the Council (2009). Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC, Retrieved from https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32009L0028.

European Parliament and the Council. (2018). Regulation (EU) 2018/1139 of the European Parliament and of the Council of 4 July 2018 on common rules in the field of civil aviation and establishing a European Union Aviation Safety Agency, Retrieved from https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32018R1139.

European Parliament and the Council (2018). Regulation (EU) 2018/1999 of the European Parliament and of the Council of 11 December 2018 on the Governance of the Energy Union and Climate Action, amending Regulations (EC) No 663/2009 and (EC) No 715/2009 of the European Parliament and of the Council, Directives 94/22/EC, 98/70/EC, 2009/31/EC, 2009/73/EC, 2010/31/EU, 2012/27/EU and 2013/30/EU of the European Parliament and of the Council, Council Directives 2009/119/EC and (EU) 2015/652 and repealing Regulation (EU) No 525/2013 of the European Parliament and of the Council, Retrieved from https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32018R1999.

European Parliament and the Council. (2018). Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources, Retrieved from https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2018.328.01.0082.01.ENG.

European Parliament. (2020). Sustainable Aviation Fuels, Retrieved from https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/659361/EPRS_BRI(2020)659361_EN.pdf.

European Union Aviation Safety Agency. (2021). Sustainable Aviation Fuels, Retrieved from https://www.easa.europa.eu/eaer/topics/sustainable-aviation-fuels.

ICAO. (n.d.). ICAO-European Union Assistance Project, Retrieved from https://www.icao.int/environmental-protection/pages/ICAO_EU.aspx.

ICAO. (2017). Renewable Energy for Aviation: Practical Applications to Achieve Carbon Reductions and Cost Savings, Retrieved from https://www.icao.int/environmental-protection/Documents/ICAO_UNDP_GEF_RenewableEnergyGuidance.pdf

IRENA. (2017). Biofuels for Aviation: Technology Brief, Retrieved from https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2017/IRENA_Biofuels_for_Aviation_2017.pdf.

Saynor, B., Bauen, A., Leach, M. (2003). The Potential of Renewable Energy Sources in Aviation, Retrieved from https://www.britishairways.com/cms/global/pdfs/csr/PRESAV_final_report_03Sep03.pdf.

EFFECT OF MARKET STRUCTURE ON AVIATION SUSTAINABILITY

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Abstract

Purpose – *Global warming and climate change are among the most serious threats facing humanity. Efforts to find solutions for reducing gas emissions behind the greenhouse effect are intensifying. Industries seen responsible for the emissions are being the focus of criticism by the public and governments. Even though aviation is responsible for 2.5% of total emissions and 12% of emissions by the transportation industry, it has been at the forefront of attention due to its fast growth potential.*
Goals to curb aviation emissions and various measures to attain these goals have been proposed by ICAO and IATA. Effectiveness of these measures is likely to be weakened because of the demand and supply characteristics and current competition environment of air transportation. The ever-present economic survival pressure forces airlines to focus on the short term and deprives them of resources to invest in environmental sustainability.
This study aims to evaluate the chances of meeting the future emission goals taking the current structure and dynamics of air transportation industry as given.

Design / Methodology / Approach – *We tried to develop a novel explanation to the research question by combing through published studies in the fields of sustainability in aviation, air transportation economics, and airline competition.*

Findings – *Achievement of 2050 goals for international aviation is mainly conditional on adoption of new aircraft technologies and massive production of sustainable aviation fuels (SAF). Moreover, an efficient global carbon offset market and elastic supply of carbon saving projects are assumed to keep carbon price low. Aircraft and engine manufacturers will need substantial commitments from airlines to invest in risky and costly novel technologies that can significantly reduce emissions. Likewise, rapidly increasing SAF production capacity requires immense investments. Moreover, a steep rise in the price of carbon offsets in future is not improbable. However, low profitability, rate of return below capital cost and high debt ratios constrain airlines' ability to incur large and, initially risky, capital expenditures. Weakening balance sheets during the pandemic have reinforced this situation. At the same time, increasing price sensitivity of passengers puts pressure on airline profits and forces them to focus on lowering costs. Under these conditions, it is hardly realistic to expect an airline to undertake a costly long-term transformation for reducing emissions. Another difficulty in meeting environmental goals might be the main reason behind aviation's growth in the last two decades: the success of the low-cost airlines. The fact that the success of these airlines depends on low fares on short to medium haul to stimulate demand and divert passengers from lower emission alternatives such as trains points to the*

difficulty of discouraging this type of travel especially popular among the mid to lower income segments of the society. Finally, the consolidation movement in the industry creates uncertainty as to its effects on the effectiveness of emissions policy. On the one hand, it could increase opportunities for coordinated action to lower emissions; on the other hand, bigger airlines could lobby more powerfully to oppose restrictive measures.

Originality / Value *– This study takes the constraints imposed by the current structure of the air transportation industry as its starting point and thus brings a new perspective on designing and evaluating measures to curb aviation emissions. Policymakers should consider that any incentives and disincentives a comprehensive environmental measure creates will be conditioned by the current industry structure and that ambitious goals might require extensive intervention to the industry.*

Keywords *– Sustainability, Emission Goals, Air Transportation, Market Structure.*

References

Barbota, C., Betancor, O., Socorro, M. P., & Viecens, M. F. (2014). Trade-offs between environmental regulation and market competition: airlines, emission trading systems and entry deterrence. Transport Policy, 33, 65-72. doi:10.1016/j.tranpol.2014.02.008

Chao, H., Agusdinata, D. B., & DeLaurentisa, D. A. (2019). The potential impacts of Emissions Trading Scheme and biofuel options to carbon emissions of U.S. airlines. Energy Policy, 134, 1-13. doi:10.1016/j.enpol.2019.110993

Chèze, B., Chevallier, J., & Gastineau, P. (2013). Will technological progress be sufficient to stabilize CO2 emissions from air transport in the mid-term? Transportation Research Part D, 18, 91-96. doi:10.1016/j.trd.2012.08.008

Dubois, G., & Ceron, J. P. (2006). Tourism/Leisure Greenhouse Gas Emissions Forecasts for 2050: Factors for Change in France. Journal of Sustainable Tourism, 14(2), 172-191. doi:10.1080/09669580608669051

EASA. (2019). European Aviation Environmental Report. doi:10.2822/309946

ICAO. (2019). Environmental Report. https://www.icao.int/environmental-protection/Pages/envrep2019.aspx adresinden alındı

ICCT. (2020). CO2 Emissions from Commercial Aviation. https://theicct.org/publications/co2-emissions-commercial-aviation-2020 adresinden alındı

Kilic, M., Uyar, A., & Karaman, A. S. (2019). What impacts sustainability reporting in the global aviation industry? An institutional perspective. Transport Policy, 79, 54-65. doi:10.1016/j.tranpol.2019.04.017

McManners, P. J. (2016). Developing policy integrating sustainability: A case study into aviation. Environmental Science and Policy, 57(1), 86-92. doi:10.1016/j.envsci.2015.11.016

Rathore, H., & Jakhar, S. K. (2021). Differential carbon tax policy in aviation: One stone that kills two Birds? Journal of Cleaner Production, 296(1), 1-16. doi:10.1016/j.jclepro.2021.126479

MARKETING STRATEGIES FOR SUSTAINABILITY IN THE CIVIL AVIATION INDUSTRY: COVID-19 PANDEMIC ERA IN TURKEY

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Abstract

Purpose *– This study has been studied to ensure sustainability in the field of civil aviation for the realization of projection by presenting the marketing strategies implemented in Turkey during the COVID-19 pandemic. This study was also carried out to shed light on the marketing practices that can be preferred in times of crisis such as the pandemic environment, to lay out the groundwork for the development of those that can be structured forward, and to convey the effects and results according to the causes of the changes.*

Design / Methodology / Approach *– In this study, institutional and sectoral publications about the sectoral effects, changes, practices and results on the civil aviation market were examined, from the beginning of the COVID- 19 pandemic times to the present and a literature review was carried out with secondary data evaluation. During the pandemic process, the marketing strategies applied for the sustainability of sectoral activities in Turkey were investigated. The changes of Covid-19 pandemic on civil aviation have been revealed by comparing the secondary data about the civil aviation sector with today's current data. The study was completed by compiling the accessed information by evaluating them in a business-oriented and sectoral integrity.*

Findings *– One of the main sectors both affected and damaged by the Covid-19 pandemic is the civil aviation sector globally and in Turkey. During the epidemic period, some civil aviation enterprises went bankrupt, some laid off their employees. Companies have tried to continue their activities with different marketing strategies for the sustainability of businesses and economic development processes in the changing marketing environment with the epidemic. Evaluating what has been done for sustainability in changing market conditions and crisis environments with global impact by evaluating what has been done, findings that will affect new trends have been obtained. Digital environments are mainly focused on different strategies, especially from mobile relational marketing to internal marketing, with integrated structures provided by interactive production of content development. It has been possible to express many strategies that were not preferred or applied pre pandemic times. Along with the examined process, and by compiling and presenting all the strategies implemented in the Turkish civil aviation sector, the importance of designing the tactics, priorities and variables that should be preferred in case of numerous future crisis possibilities was pointed out.*

Originality / Value – *The market changes experienced with the effects of the Covid-19 pandemic on the Turkish civil aviation sector were scrutinized. In the light of the data and information examined, a comparative evaluation has been made regarding the period before and the process. The difference was presented by comparing the differences in the number of incoming tourists and the changes in the total number of commercial, passenger and cargo flights. In particular, strategies transformed by integrating the "mask, distance and hygiene" rules applied all over the world into marketing activities son as to prevent the spread of the epidemic were conveyed. In the period when health safety was at the forefront and rather than public transportation individual transportation vehicles were preferred, the marketing strategies of civil aviation enterprise on behalf of to be preferred were revealed. Strategies structured with sustainable marketing activities were implemented in the process of experiencing a kind of digital revolution. Strategies in the crisis environment have been studied in different dimensions for the sustainability of the assets of the top three companies in the Turkish civil aviation market. Within the scope of marketing communication activities, it can be listed as digital marketing, e-commerce, mobile access, interactive communication over social media, digital transformation of internal marketing in the whole of corporate identity, relational marketing and inclusion of the consumer in business processes.*

Keywords – *Civil Aviation Sector, Sustainable Marketing, Marketing Communication, Digital Marketing, Consumer Behaviour*

References

(2021). DHMI: https://www.dhmi.gov.tr/Sayfalar/Istatistikler.aspx adresinden alınmıştır

EY. (2021, Eylül). 2021 tarihinde EY: https://assets.ey.com/content/dam/ey-sites/ey-com/tr_tr/pdf/ey_turizm_sektoru_eylul_2021.pdf adresinden alındı

AA. (2020, Aralık). TRT HABER: https://www.aa.com.tr/tr/turkiye/yurt-disindan-gelenlere-pcr-testi-ibrazi-zorunlulugu-uygulamasi-yarin-baslayacak/2091668 adresinden alınmıştır

AA. (2021, EYLÜL). TRT HABER: https://www.trthaber.com/haber/gundem/test-yaptiramayan-yolcular-icin-ucretsiz-bilet-degisikligi-hakki-606725.html adresinden alınmıştır

AA. (2021, EYLÜL). TRT HABER: https://www.trthaber.com/haber/gundem/test-yaptiramayan-yolcular-icin-ucretsiz-bilet-degisikligi-hakki-606725.html adresinden alınmıştır

ACI. (2020). The impact of COVID-19 on the airport business. Mayıs 30, 2021 tarihinde Airports Council International: https://aci.aero/wp-content/uploads/2020/03/200401-COVID19-Economic-Impact-Bulletin-FINAL-1.pdf adresinden alındı

Akça, M. (2020). COVID-19'UN HAVACILIK SEKTÖRÜNE ETKİSİ. Avrasya Sosyal ve Ekonomi Araştırmaları Dergisi.

Akça, M. (2020). Havalimanı Şehri Modeli. International Journal of Management and Administration, 4(7), 178-188.

Akpur, Z. (2021). GELENEKSEL VE DÜŞÜK MALİYETLİ HAVAYOLLARININ COVID-19'A KARŞI ALDIĞI ÖNLEMLERE YÖNELİK KARŞILAŞTIRMALI BİR ARAŞTIRMA. 19 MAYIS SOSYAL BİLİMLER DEGİSİ.

Bakırcı, M. (2020). COVID-19 pandemisinin Türkiye havayolu ulaşımına etkisi. Türk Coğrafya Dergisi.

CAPSCA. (2021). Effects of Novel Coronavirus (COVID-19) on Civil Aviation: Economic Impact Analysis. 07 13, 2021 tarihinde Collaborative Arrangement for The Prevention and Management of

Public Health Events in Civil Aviation: https://www.icao.int/sustainability/Documents/COVID-19/ICAO_Coronavirus_Econ_Impact.pdf adresinden alındı

Cirium. (2021). The Cirium Airline Insights Review 2020. CIRIUM: https://cirium.lookbookhq.com/2020-airline-insights-review/2020-airline-insights-review adresinden alınmıştır

DHA. (2021, EYLÜL). TRT HABER: https://www.trthaber.com/haber/gundem/test-yaptiramayan-yolcular-icin-ucretsiz-bilet-degisikligi-hakki-606725.html adresinden alınmıştır

DHMI, D. (2020). Havayolu İstatistikleri. Temmuz 9, 2021 tarihinde https://www.dhmi.gov.tr/Sayfalar/Istatistikler.aspx adresinden alındı

Dondurucu, Z. B., & Çetinkaya, A. (2020). Uluslararası Havayolları Şirketlerinin Covid-19 Salgını Sürecinde Instagram'da Marka İletişimi Stratejilerinin Analizi . Turkish Studies, 12-24.

Hurk, A. M. (2013). Social media crisis communications: preparing for, preventing, and surviving a public relations. Pearson Education.

ICAO. (2021). Effects of Novel Coronavirus (COVID-19) on Civil Aviation: Economic Impact. ICAO Reports, 1-45.

Kasarda, J. (2019). Aerotropolis. The Wiley Blackwell Encyclopedia of Urban and Regional, 1-7.

Kotler, P. (2005). A'dan Z'ye pazarlama. MediaCat.

Köfteoğlu, F. (2021). 42 Havayolu İflas Etti, 30 Yeni Havayolu Kuruluyor. 07 10, 2021 tarihinde https://www.dunya.com/sektorler/turizm/42-havayolu-iflas-etti-30-yeni-havayolu-kuruluyor-haberi-611509 adresinden alındı

Li, S., Wang, Y., Xue, J., Zhao, N., & Zhu, T. (2020). The impact of COVID-19 epidemic declaration on psychological consequences: a study on active weibo users. International Journal of Environmental Research and Public Health, 17(6), 2032.

Lufthansa. (2020, 12). https://www.lufthansa.com/tr/tr/homepage adresinden alınmıştır

Macit, A. (2020). Covid-19 Pandemisinin Havayolu İflas Riski Üzerindeki Etkisinin Belirlenmesi: Airscore Modeli ile Türk Sivil Havacılık Sektörüne Yönelik Bir Analiz. 13. Güncel Araştırmalarla Sosyal Bilimler Kongresi, 1250-1259.

Özgen, Ö., & Elmasoğlu , K. (2016). Sosyal Medya ve Marka İletişimi: Havayolu Şirketlerinin Twitter Kullanımına Yönelik Bir Araştırma. İletişim Kuram ve Araştırma Dergisi, 181-202.

Öztürk, M. (2015). Sosyal Medya ve Kurumsal İletişim.Dijital İletişim ve Yeni Medya. Anadolu Üniversitesi Yayınları, 120-152.

Pegasus. (2020, 12). https://www.flypgs.com/ adresinden alınmıştır

Sunexpres. (2020, 12). https://www.sunexpress.com/tr/ adresinden alınmıştır

THY. (2020, 12). https://www.turkishairlines.com/tr adresinden alınmıştır

TİM. (2021). Türkiye İhracatçılar Meclisi İhracat 2021 Raporu. İstanbul.

UNWTO, T. (2021). UNWTO Reports. 07 11, 2021 tarihinde https://www.unwto.org/news/covid-19-international-tourist-numbers-could-fall-60-80-in-2020 adresinden alındı.

ENVIRONMENTAL SUSTAINABILITY AND METHODS USED

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Abstract

Purpose *- The aviation industry is developing and becoming a rapidly growing sector with the increase in globalization and trade volume. It has an important role in increasing the socio-economic welfare of countries. However, these developments have a large impact on the environment. Triggers such as climate change and noise, which are the result of globalization, lead airports and their stakeholders to invest in managing these risks in their business and operations in the long run. The use of renewable energy sources is very important in airport which have a high energy consumption and whose contribution to greenhouse gas emissions attracts attention all over the world. Although the location of air transportation is indispensable for the global economy, tourism and logistics, the future of the world is not very bright unless the amount of CO2 released to nature is not reduced despite this gain. There is an increasing effort in the design, construction and operation of airports to minimize environmental impacts and use renewable energy sources. The existence of airports plays an important role in aviation pollution, so sustainable approaches have been developed to create "clean" airports, including architectural designs. Studies to ensure sustainability and minimize current carbon emissions include both airports and airlines. The amount of carbon dioxide emitted from the airports is examined not only as the terminal building but also including the movements of the airlines. Studies will be reviewed.*

Design / Methodology / Approach – *In this study, firstly, information about the concept of sustainability will be given and then the concept of environmental sustainability in aviation and the effect of aviation on sustainability will be examined. In the continuation of the study, the attitudes of airlines, regulatory authorities, airports and customers about environmental sustainability in aviation will be analyzed, and the contribution of digitalization applications to sustainability will be discussed. In the last part, it will be mentioned how the effect of aviation on environmental sustainability is expected to be in the future, together with the regulations made.*

Findings – *As a result of the research carried out in this study, it is possible to contribute to the sustainability studies of not only airlines but also airports and passengers. Studies on the protection of wildlife and waste reduction are the studies carried out by airports. Another example of paperless applications in e-transformation at airports is the fact that over the years, with the developments in computer technology, with the digitalization, paperless transactions started to be made gradually. Personnel training records provided a standardized, documentable record of individual competency for aviation maintenance personnel, but these records continue to be kept in folders. Paper records create a maintenance burden as the continuation and possibility of errors made during data entry and the normal wear and tear of the documents contained in these records require periodic repair, replacement or complete rebuilding of pages. A torn and missing page also causes valuable educational information*

to be lost, reducing the information integrity of the record. This change in the methods used will make aviation a more reliable and green industry.

Originality / Value – *In addition to the development of the aviation industry, one of the problems encountered is the damage it causes to the environment. There are studies developed to solve them. These studies are progressing within the framework of digitalization and sustainability. Paper consumption, which plays an important role in the protection of nature, has also become a prominent issue in digitalization applications in aviation. In the context of research, the current trend is social welfare, social contribution and environmental awareness, where carbon footprint is allowed to balance for each passenger, many airlines provide the opportunity to reset the carbon footprint from any flight with a financial contribution used for environmental projects. It has been concluded that there are many projects carried out taking this into account and it is aimed to examine these projects.*

Keywords – *Digitalization, Aviation, Carbon Emission, Sustainability.*

References

Oto Nurhan, (2011), Environmental Sustainability and Airports: The Example of Esenboğa Airport, p.35-37

Torum Oya, Yılmaz Küçük Ayşe, (2009), Sustainability Management in Aviation Sustainability Practices Research for Airports in Turkey, Journal of Aviation and Space Technologies Volume 4 Issue 2 (47-58), p.47-50

Oto Nurhan, Çobanoğlu Nesrin, (2011), Airports Sustainable in terms of Environmental Bioethics, p.115-116

Şahinkaya Akşit Sinem, (2015), ASSESSMENT OF ENVIRONMENTAL SUSTAINABILITY FOR AN EXISTING AIRPORT, ISTANBUL TECHNICAL UNIVERSITY GRADUATE SCHOOL OF SCIENCE ENGINEERING AND TECHNOLOGY, M.Sc. THESIS, p.14,

Joseph Amankwah-Amoah, Journal of Cleaner Production Volume 271, (2020), Stepping up and Stepping Out of COVİD-19: New Challanges for Environmental Sustainability Policies in the Global Airline Industry

Brent W. Ritchie, Astrid Kemperman, Sara Dolnicar, (2021), Which Types od Product Attributes Lead to Aviation Voluntary Carbon Offsetting Among Air Passengers? Tourism Management Volume 85

Sean D.Barrett, (2004), The sustainability of the Ryanair model, Management , Volume 2, Issue 2, s. 89-98

Dalkıran Alper, (2018), Airport Management and Sustainability, Journal of Sustainable Aviation Research, Volume 3, Issue 2

Session VI

Session Chair

Prof. Dr. Dursun BİNGÖL

THE EFFECT OF ORGANIZATIONAL CULTURE IN TURKISH CIVIL AVIATION ON CREW RESOURCE MANAGEMENT

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Abstract

Purpose *- The role of aviation industry is gradually increasing nowadays with technological progresses. Airline transport as a main transportation activity is central especially considering transportation activities. The major purpose of airline transport is to transport passengers safely and affordably. It is quite important to transport safely. Moreover, safe and reliable airline transport activities help companies to protect their existences in competitive market.*
According to a statement made by NASA in 1970, incidents occurring at airports generally result from human behaviors with a high rate of 60%-80% instead of technical issues or breakdowns (Klinect, 2005, 12; Helmreich and Merritt, 1998, 11). It was found as a result of studies conducted by researchers after this statement of NASA, workers' misconduct, wrong decisions, miscommunication, false team building and poor leadership underlie these incidents (Hoang, 1996, 3; Sexton and Helmreich, 1992; Helmreich and Merritt, 1998).

Design / Methodology / Approach *- According to these statements, Crew Resource Management (CRM) is a solution offer to avoid mistakes related to communication, leadership, stress and team management which are among the reasons of airline accidents. These solutions include some attitudes, behaviors and organizational culture that must be acquired by the cockpit crew. According to John K. Lauber (1986), CRM is defined as using all available possibilities in order to perform flight services effectively and safely (Cooper, White and Lauber, 1979; Orlady ve Foushee, 1986, 9). Civil aviation companies in United States of America started to use crew resource management as a basic training for pilots in order to prevent accidents and massacres for the first time. After that, they developed some assessment and evaluation systems to be able to determine if the CRM trainings reach the desirable level around the world. As a result, CRM became an important tool for preventing human mistakes that cause the accidents and massacres. However, accidents continued happening while training activities were being maintained and researchers started to consider other factors that might have affected CRM. Especially not getting the same results in every country brought the issue of organizational culture into question (Keyes, 1990; Sexton, Thomas and Helmreich, 2000; Sexton and Helmreich, 1992; Musson and Helmreich, 2004, 35; Klinect, 2005, 11). It is because organizational cultural attitudes might have an effect on cockpit crew's attitudes and behaviors (Helmreich and Merritt, 2000).*
Culture is a shared phenomenon. On the other hand, organizational culture can be defined as the realization of sharing at the level of organizations (Brooks, 2003:241). Just as each individual has a unique personality, organizations also have their own personality that distinguishes them from other organizations. Different features of organizations provide them with distinctiveness by distinguishing

them from others. These distinguishing features directly or indirectly affect workers' working habits, productivity and mood (Berberoğlu and Baraz, 1999: 64). Organizational culture is explained as the common understanding shared by workers on how to perform their activities in the organization (Wallach, 1983: 29).

The relationship between organizational culture and crew resource management was firstly discussed by Meritt and social and organizational culture of cockpit crew was emphasized in the researches (Helmreich, 1999; Merritt, 1996; Fischer and Orasanu, 1999; Helmreich and Merritt, 1998; Helmreich and Merritt, 2000; Helmreich, 1998; Merritt and Maurino, 2003; Musson, 2003; Merritt and Helmreich, 1998; Merritt and Ratwatte, 2003). It was stated following the researches about culture and CRM that culture's structure is considered important in terms of influencing workers' values, attitudes and behaviors as well as hierarchical relations in the cockpit, sharing information flow and even use of automation in the cockpit (FAA, 1999; Merritt, 1994; Helmreich and Merritt, 1998; Helmreich and Merritt, 2000; Helmreich, 2000). According to studies examining the relationship between organizational culture and CRM, organizational culture is a factor affecting attitudes and behaviors of flight crew.

The effect of organizational culture in Turkish civil aviation on crew resource management is researched in the light of the above information in this study. As a result of the literature review, the hypothesis was determined as "organizational culture has an effect on crew resource management".

Findings *- The research universe is the cockpit crew working at Ankara Esenboğa Airport. approximately 170 personnel work in the mass of the universe and 140 questionnaire forms were delivered. 37 questionnaire forms were not included in the sample due to incomplete or multiple responses in the delivered forms and as a result, the sample consists of 103 people with a 5% margin of error. Factor and reliability analyses were respectively applied to the data obtained from the questionnaires. Then, correlation and regression analyses were performed by using SPSS (Version 22.00) statistical package program in order to measure the relationship between them and the degree of effect. Within the scope of the research, a 24-item organizational culture scale prepared by Şeşen (2010) and a 22-item flight line attitude scale by Merritt, Helmreich, Wilhelm and Shearman (1996) were used.*

Originality / Value *- As a result of the research, it was found that organizational culture has a low-level effect on CRM. It is thought that this might have a few reasons. First of all, it is to give complete and accurate information about the working environment that may occur during the flight in the CRM trainings offered to the cockpit crew in airline companies. Otherwise, even small mistakes might cause accidents that result in death. Therefore, flight crew know the fact that they need to exhibit proper attitudes and behaviors in the cockpit with the help of the training they have received even if there is a different culture within the organization. Second of all, it is believed that cockpit crew become distanced from the organization they are affiliated with in the absence of flight intensity and administrative duties even though there is a general culture in the organization. Thus, the CRM training they receive is not significantly affected by the organizational culture.*

Keywords: *Organizational Culture, Crew Resource Management.*

References

Berberoğlu, G. ve Baraz, B. (1999), Tusaş Motor Sanayi A.Ş.'de Örgüt Kültürü Araştırması , A.Ü. BF Dergisi, Eskişehir, 64

Brooks, I. (2003), Organisational Behaviour- Individuals, Groups and Organisation. 2nd Ed. Essex: Prentice Hall.

Cooper, G.E., M.D. White ve Lauber J.K.(1979), Resource Management on the Flight Deck, Proceedings of NASA/ Industry Workshop.

Federal Aviation Administration (1999), Crew Resource Management Training, Federal Aviation Regulation (FAR 120-51B,2) Washington DC.

Fischer, U. ve Orasanu, J. (1999), Say It Again, Sam! Effective Communication Strategies to Mitigate Pilot Error, 10th. International Symposium on Aviation Psychology, Columbus, OH.

Helmreich, R.L. (1999), Building Safety on the Three Cultures of Aviation", In Proceeding of the IATA Human Factor Seminar, 39-43, Bangkok, Thailand, August12, 1998.

Helmreich, R.L. ve Merritt, A.C. (1998), Culture at Work in Aviation and Medicine National, Organizational and Professional Influences, Ashgate Publishing Limited, Gower House, Croft Road, Aldershot Hampshire GU 11 3HR, England.

Helmreich, R.L. ve Merritt, A.C. (2000), Safety and Error Management: The Role of Crew Resource Management, Aviation Resource Management, ss.107-119, Aldershot, UK: Ashgate.

Hoang, V.R. (1996), Cockpit-Cabin Communication: The Impact of National and Occupational Cultures, Thesis of Master of Science, San Jose University.

Keyes, R.J. (1990), Cockpit Resource Management A New Approach to Aircrew Coordination Training, Maxwell AFB AL 36112-5532.

Klinect, J. (2005), Line Operations Safety Audit: A Cockpit Observation Methodology for Monitoring Commercial Airline Safety Performance, Doctoral Dissertation, The University of Texas at Austin.

Merritt, A. (1994), Cross-Cultural Issues in CRM Training, ICAO Flight Safety and Human Factors Amsterdam Seminerinde sunulmuştur

Merritt, A. ve Maurino, D. (2003), Majority Rules? The Evolution and Safety Consequnces of A Dominant Culture in Aviation, University of Texas.

Merritt, A. ve Ratwatte, S. (2003), Who Are You Calling A Safety Threat? A Debate on Safety in Mono Versus MultiCultural Cockpits, University of Texas.

Merritt, A.C. (1996), National Culture and Work Attitudes in Commercial Aviation: A Cross-Cultural Investigation, Unpublished Doctoral Dissertation, The University of Texas

Musson, D.M. (2003), Personality Determinants of Professional Culture: Evidence from Astronauts, Pilots and Physicians, Doktora tezi, The University of Texas.

Musson, D.M.ve Helmreich, R.L. (2004), Management in Health Care: Current Issues and Future Directions, Harvard Health Policy Review, Vol. 5, No. 1.

Orlady, H.W. ve Foushee, H.C. (1986), Cockpit Resource Management Training", NASA Conference Publication, 2455.

Sexton, J.B. ve Helmreich, R.L. (1992), Analyzing Cockpit Communicaiton: The Links Between Language, Performance, Error, and Workload, The University of Texas Austin

Sexton, J.B., Thomas, E.J. ve Helmreich, R. (2000), Error, Stress, and Teamwork in Medicine and Aviation Cross Sectional Surveys, BMJ, Vol.320.

Şeşen, H. (2010), Öncülleri ve sonuçları ile örgüt içi girişimcilik: Türk savunma sanayinde bir araştırma (Yayımlanmamış doktora tezi). Kara Harp Okulu Savunma Bilimleri Enstitüsü, Ankara.

Wallach, J. E. (1983), Individuals and Organizastions: The Cultural Match, Training and Development Journal, February, 29-36.

UNDERSTANDING PEER SUPPORT SYSTEM: EXAMPLE OF TALPA-MDA

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Abstract

Purpose – *The peer support system, which was mostly used in schools in the past, has been used for pilots by many airlines, especially in Europe, more commonly after the Germanwings crash in 2015. As a requirement of EASA, the implementation of peer support programs for pilots in airlines in Turkey is a necessity. The purpose of this research is to identify peer support system as a helpful approach for aviation sector.*

Design / Methodology / Approach – *The Turkish Airline Pilots Association has implemented the peer support program for pilots in Turkey as a project. Under the name of TALPA-MDA, they provide support to pilots all over Turkey. This program is fully compliant with EASA Consolidated AMC & GM to Annex IV (Part-CAT). In this study, the TALPA-MDA design process is questioning, in other words, in order to get detailed information, this research investigates; how the peer support system for pilots was developed, the design of the process, its content, the benefits it will provide, the issues that the system focuses on, the difficulties encountered in the process design and the predictions about the continuation of the system. In this study, action research methodology was used in the implementation of the peer support system in aviation sector. The main problem for the peer support program is to enable prevention and early detection of issues, and to provide appropriate advice and support to the concerned colleague pilot. It is an initiative in which trained peer volunteers assist fellow pilots with the goal of preserving careers and enhancing aviation safety. The aim is primarily to keep the pilot flying, if this is not possible, to enable the pilot to return into service as quickly as possible. This research is structured as an action research, because author of the research participated the design process of TALPA-MDA peer support program as a volunteer. Also semi-formal interviews were conducted with all individuals who are responsible within the program for the implementation of the system. Action research is suitable for those who are directly involved in the process to be developed/examined. In this context, every individual working in any field of expertise can conduct action research to solve the problems they encounter professionally or to increase the quality of their work. The main purpose of action research is to improve practice and it enables individuals who practice it to participate directly in the research process, thus enabling first-hand learning. Since the research was conducted in the real world, it aimed to solve the directly existing problems. Action research methodology, brings the empowerment of individuals, cooperation and social change through direct participation.*

Findings – *According to the findings, TALPA-MDA, with its simplest definition, is a system that enables pilots to receive support from their volunteer colleagues, who are also pilots, and is created to prevent and detect early problems that may be encountered. It acts on a completely voluntary basis. Peer volunteers who meet the necessary conditions are selected to the program and they receive a series of*

trainings. These selected peers assist other pilots in order to protect the piloting profession and increase aviation safety. The aim is primarily to listen to the problem of the pilot who applied to the system and requested help, to help him or her to find a solution and to ensure that he or she could fly safely. Peers are at the heart of the peer support program. A good peer: first of all must be a good listener, should not be judiciary, should not provide a direct solution, on the contrary, the client should be supported to find the solution by themselves for their own problems. TALPA-MDA provides confidential, independent and accessible peer-based support and assistance to pilots. In some cases, if necessary, peers can also refer the applicant to a mental health professional. Beyond all the benefits, the peer support system also contributes to the sustainability of aviation companies and aviation sector.

Originality / Value – *Peer support emerges as a system that has just started to be implemented in the aviation industry in Turkey. Previously, Pegasus and Sun Express Airlines established their own peer support system. TALPA-MDA, on the other hand, is a system that has been implemented by an association, for the first time, that has an inclusive structure for all pilots and supports the trust factor, which is perhaps the most important point in peer support. Therefore, the evaluations made regarding this newly established structure will guide the applicability of the system in different sectors, too. In addition to the interviews and explanations, the author of this article has one-to-one and detailed information about the process, as she voluntarily took part in the establishment of the system in question. This situation constitutes an advantage in terms of the originality of this study and creates an opportunity to convey the evaluations in detail.*

Keywords – *Aviation, Peer, Peer Support, Pilot Peer Support, Talpa-MDA*

References

Beales A., Wilson J. (2015). Peer Support – the what, why, who, how and now, The Journal of Mental Health Training, Education and Practice, Vol. 10, Iss 5, pp. 314-324. DOI: 10.1108/JMHTEP-03-2015-0013

Campbell, C., & MacPhail, C. (2002). Peer education, gender and the development of critical consciousness: Participatory HIV prevention by South African Youth. Social Science and Medicine, 55(2), 331–345. DOI: 10.1016/s0277-9536(01)00289-1

Christie, H. (2014). Peer mentoring in higher education: Issues of power and control, Teaching in Higher Education, 19, 955–965. DOI: 10.1080/13562517.2014.934355

Colvin, J. W., & Ashman, M. (2010). Roles, risks, and benefits of peer mentoring relationships in higher education. Mentoring & Tutoring: Partnership in Learning, 18, 121–134. DOI: 10.1080/13611261003678879

Cowie, H. (1998) Perspectives of teachers and pupils on the experience of peer support against bullying, Educational Research and Evaluation, 4, 108–25. DOI: 10.1006/jado.1999.0241

Cowie, H. and Olafsson, R. (2000) The role of peer support in helping the victims of bullying in a school with high levels of aggression, School Psychology International, 21:1; 79–95. DOI: 10.1177/0143034300211006

Cowei H., Wallace P. (2000). Peer Support in Action, Sage Publications, London, ISBN 0-7619-6352-9

Holt L. J., Lopez M. J. (2014). Charecteristics and Corelates of Supportive Peer Mentoring: A Mixed Methods Study, Mentoring & Tutoring: Partnership in Learning, Vol. 22, No. 5, pp. 415–432. DOI: 10.1080/13611267.2014.983326

Lekka F., Efstathiou G., Kalantzi-Azizi A. (2015). The Effect of Counselling-based Training on Online Peer Support, British Journal of Guidance & Counselling, Vol. 43, No. 1, 156–170, DOI: 0.1080/03069885.2014.959472

Leidenfrost, B., Strassnig, B., Schabmann, A., Spiel, C., & Carbon, C. (2011). Peer mentoring styles and their contribution to academic success among mentees: A person-oriented study in higher education, Mentoring & Tutoring: Partnership in Learning, 19, 347–364. DOI: 10.1080/13611267.2011.597122

Mead S., Hilton D., Curtis L. (2001). Peer Support: A Theoretical Perspective, Psychiatric Rehabilitation Journal, Vol: 25, No: 2, pp. 134-141.

Naslund N. A., Aschbrenner K. A., Marsch L. A., Bartels S. J. (2016). The future of mental health care: Peer-to-peer Support and Social Media, Epidemiology and Psychiatric Sciences, 25, 113–122. DOI:10.1017/S2045796015001067

Naylor, P. and Cowie, H. (1999). The effectiveness of peer support systems in challenging school bullying: the perspectives and experiences of teachers and pupils, Journal of Adolescence, 22(4), 1–13. DOI: 10.1006/jado.1999.0241

Rodger, S., & Tremblay, P. F. (2003). The effects of a peer mentoring program on academic suc- cess among first year university students. Canadian Journal of Higher Education, 33(3), 1–17. DOI: 10.47678/cjhe.v33i3.183438

Topping, K. (1996). Reaching where adults cannot: peer education and peer counselling, Educational Psychology in Practice, 11(4), 23–9. DOI: 10.1080/0266736960110405

Visser, M. J. (2004). Implementing Peer Support in Schools: Using a Theoretical Framework in Action Research, Journal of Community & Applied Social Psychology, J. Community Appl. Soc. Psychol., 14: 436–454. DOI: 10.1002/casp.78

Watson E. (2017), The Mechanism Underpining Peer Support: A Literature Review, Journal of Mental Health, 1-12, DOI: 10.1080/09638237.2017.1417559

A QUALITATIVE RESEARCH ON THE PROBLEMS FACED BY WOMEN IN THE AVIATION SECTOR

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Abstract

Purpose *Today, male-dominated organizational structures in the working life order have undergone great changes caused by factors such as technological progress that ensure the spread of products and services at the international level. In parallel with the demographic changes in daily life, the increasing number of working women in the business world is seen as an indicator of the development of countries and is important in terms of economic, social and cultural benefits. Women face discrimination in hiring, promotion, dismissal and remuneration in the labor market. However, they are concentrated in the lower levels of the hierarchy in the workplaces, they are less in the upper positions related to decision making and management, they work in monotonous and repetitive jobs that require low levels in the production of goods and services. This study is a qualitative case study that examines the in-depth analysis of the opinions of female employees in aviation enterprises in the public and private sectors regarding the problems they encounter in business life.*

Design / Methodology / Approach – *This study is a qualitative case study that provides an in-depth analysis of the opinions of female employees in the public and private sectors in aviation enterprises regarding the problems they encounter in business life. In our study, semi-structured interview method was used because of the flexibility provided by the researchers for the semi-structured interview method. In our study, the questions I prepared about the barriers arising from "individual, organizational and social factors", which are the components of glass ceiling syndrome, examined what middle and senior women think about glass ceiling syndrome.*

Findings – *According to the results of this study, which was created based on the specifics of women in the aviation sector, it was observed that women working in companies that provide services related to passenger transportation generally face difficulties due to shift work. Gender discrimination in the workplace may cause employees to exhibit different or similar behaviors depending on their perception patterns. Regarding the quality of working life in organizations, it is important for men and women to be aware of gender discrimination. These perceptions can lead to the polarization of men and women who treat each other differently. Gender discrimination in working life is predominantly perceived as an obstacle for women.*

Originality / Value – *In order to improve the working conditions of women who will work in the aviation sector in the future, it is very important to identify the problems that women face in their working life. In the research, first of all, women and the problems they face in working life were mentioned, and then the results of the interviews with the women working at the airport were presented.*

Keywords: *Women in Working Life, Business Life, Women, Aviation Sector.*

References

Akdöl, B. (2009). Cam Tavan ve Kurumsal Bir Strateji Pozitif Ayrımcılık; İlaç Sektöründe Bir Sınıflandırma. Yüksek Lisans Tezi, İstanbul Üniversitesi Sosyal Bilimler Enstitüsü, İstanbul.

Aksu, A., Çek, F., ve Şenol,B. (2013). Kadınların Müdür Olmalarının Önündeki Cam Tavan ve Cam Tavanı Aşma Stratejilerine İlişkin İlköğretim Okulu Müdürlerinin Görüşleri. Kocaeli Üniversitesi Sosyal Bilimler Dergisi, 133-169.

Anafarta N., Sarvan F., Yapıcı N, (2008), Konaklama İşletmelerinde Kadın Yöneticilerin Cam Tavan Algısı: Antalya İlinde Bir Araştırma. Akdeniz İ.İ.B.F. Dergisi,15,111-137.

Barutçugil, İ. (2002). İş Hayatında Kadın Yönetici. Kariyer Yayınları. İstanbul.

Başlevent, C. ve Onaran, Ö (2004). The Effect of Export-Oriented Growth on Female Labor Market Outcomes in Turkey, World Development, August, 32(8): 1375-1393.

Bingöl, D., Aydoğan, E., Şenel, G. ve Erden, P. (2011). Cam Tavan Sendromu ve Kadınların Hiyerarşik Yükselmelerindeki Engeller: TC. Enerji ve Tabii Kaynaklar Bakanlığı Ankara Merkez Teşkilatı Örneği. Dokuz Eylül Üniversitesi İşletme Fakültesi Dergisi, 12,(1), 115-132.

Bulut, M.B., (2014), Kadınların Yüksek Pozisyona Gelememe Nedenleri, Asos Journal Akademik Sosyal Araştırmalar Dergisi, Yıl:2, Sayı:7, ss.202-215.

Çetin, M. & Atan, E. (2012). İlköğretim Okullarında Görev Yapan Kadın Okul Yöneticilerinin Cam Tavan'a İlişkin Algılarının İncelenmesi. M.Ü. Atatürk Eğitim Fakültesi Eğitim Bilimleri Dergisi, 35, 123-136.

Çitçi O. (1982). Kadın Sorunu ve Türkiye'de Kamu Görevlisi Kadınlar, Sevinç Matbaası, Ankara.

Çubukçu, N. (2006). Kadınların Eğitim Düzeyi Arttıkça, İşgücüne Katılım İmkânları Da Artmaktadır. Toprak İşveren Dergisi, 69, 1-5.

Dalkıranoğlu, T. ve Çetinel, F. G. (2015). Konaklama işletmelerinde kadın ve erkek yöneticilerin cinsiyet ayrımcılığına karşı tutumlarının karşılaştırılması. Dumlupınar Üniversitesi Sosyal Bilimler Dergisi, 20, 277-298.

Demirbilek, S. (2007). Cinsiyet Ayrımcılığının Sosyolojik Açıdan İncelenmesi, Finans Ekonomik & Politik Yorumlar, 44 (511), 12-27.

Derks, B., Van Laar, C., & Ellemers, N. (2009). Working for the self or working for the group: How self- versus group affirmation affects collective behavior in low-status groups. Journal of Personality and Social Psychology, 96 (1), 183- 201.

Hisarcıklılar, M. ve Ercan, H. (2005). Gender based wage differentials in Turkey. Bilgi Dergisi, 10 (1), 45-62.

Karcıoğlu, F. & Leblebici, Y. (2014). Kadın Yöneticilerde Kariyer Engelleri: "Cam Tavan Sendromu." Üzerine Bir Uygulama. Atatürk Üniversitesi İktisadi ve İdari Bilimler Dergisi, 28, 4, 2014, 1-20.

Kartal, M. ve Çoban, O. (2018). Emek Piyasasında Kadın Çalışanlara Yönelik Cinsiyet Ayrımcılığı: Kahramanmaraş Tekstil Sektörü Örneği. Selçuk Ün. Sos. Bil. Ens. Der., (39), 67-81.

Katkat Özçelik, M. (2017). Çalışma Hayatında Kadının Yeri Ve Kariyer Gelişim Engelleri. The Journal of Academic Social Science, 5, 52, 49-70.

Kaya, C. (2009). Çalışma Yaşamında Kadın Işgücü Sorunları ve Örgütlenme Eğilimleri. T.C. Dokuz Eylül Üniversitesi Sosyal Bilimler Enstitüsü Çalışma Ekonomisi ve Endüstri İlişkileri Anabilim Dali Çalışma Ekonomisi ve Endüstri ilişkileri Programı Yüksek Lisans Tezi.

Kocacık F. ve Gökkaya B. V. (2005). Türkiye'de Çalışan Kadınlar Ve Sorunları. C.Ü. İktisadi ve İdari Bilimler Dergisi, 6(1), 195-219.

Korkmaz H. (2014). Yönetim Kademelerinde Kadına Yönelik Cinsiyet Ayrımcılığı ve Cam Tavan Sendromu. Akademik Sosyal Araştırmalar Dergisi, 2,(5), 1-14.

Korkmaz, H. (2016). Yönetimde Kadın ve Cam Tavan Sendromu. Alternatif Politika Toplumsal Cinsiyet Özel Sayısı II, 95-112.

Öge, S., Karasoy, A. ve Kara, Ö. (2014). A Research on Glass Ceiling Syndrome Career Barriers of Women Academics. International Journal of Social, Behavioral, Educational, Economic, Business and Industrial Engineering, 8(9), 3011- 3020.

Örücü, E. ve Akgül, G . (2019). Örgütlerde Cam Tavan Sendromunun Örgütsel Güven Üzerine Etkisi: Lojistik Hizmet Sağlayıcılarına Yönelik Bir Araştırma. Ömer Halisdemir Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi, 12 (2) , 183-201.

Özağır, A. (2010). İş Yaşamında Kadınların Karşılaştıkları Sorunların Bireysel Performansa Etkileri: Perakendecilik Sektöründe Bir Uygulama. Selçuk Üniversitesi Sosyal Bilimler Enstitüsü Yüksek Lisans Tezi,

Öztürk, A. (2011). Kadın öğretim Elemanlarının Cam Tavan Sendromu Üzerine Bir Araştırma. Ankara Üniversitesi Yüksek Lisans Tezi.

Öztürk, Z. Bilkay, T. (2016). Türkiye Kamu Hastaneleri Kurumunda Çalışan Kadınların Kariyer Engelleri ve Cam Tavan Sendromu Algıları. Gazi Üniversitesi Sosyal Bilimler Dergisi, 3(6); 89-102.

Palaz, S. (2003). Türkiye'de Cinsiyet Ayrımcılığı Analizinde Neoklasik Yaklaşıma Kurumcu Yaklaşım: Eşitliği Sağlayıcı Politika Önerileri. Balıkesir Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 6(9): 87-109.

Ryan, M. K. ve Haslam, S. A. (2005). The Glass Cliff: Evidence that Women are Over-Represented in Precarious Leadership. British Journal of Management, 16 (2): 81- 90.

Tansel, A. (2002). Economic Development and Female Labor Force Participation in Turkey: Tim e-Series Evidence and Cross-Province Estimates, Middle East University Working Paper No. 02/3,1-61.

Ustabaş, A ve Afacan Fındıklı, M. (2017). Çalışma Hayatında Kadın Yönetici Olmak: Türkiye'de Sanayi Sektöründe Kadın Yöneticilerin Karşılaştıkları Sorunlar. KSBD, 9, (9), 421-441.

Uygur, S. (1999). Kadın İşçiler ve Sorunları. Türk-İş Türkiye İşçi Sendikaları Konfederasyonu Eğitim Yayınları No.27, Ankara

Valk, R. ve Srinivasan, V. (2011). Work–family balance of Indian women software professionals: A qualitative study. IIMB Management Review, 23(1), 39-50.

Yıldız, S. Alhas, f. Sakal, Ö., Yıldız, H. (2016). Cam Uçurum: Kadın Yöneticiler Cam Tavanı Ne Zaman Aşar?. Ankara Üniversitesi SBF Dergisi, 71(4), 1119 – 1146.

Yılmaz, A., Bozkurt, Y., İzci, F., (2008), Kamu Örgütlerinde Çalışan Kadın İşgörenlerin Çalışma Yaşamlarında Karşılaştıkları Sorunlar Üzerine Bir Araştırma, Eskişehir Osmangazi Üniversitesi Sosyal Bilimler Dergisi, 9(2), Aralık 2008, 89-114.

EFFECTS OF TIME PRESSURE IN THE AVIATION INDUSTRY: RESEARCH FOR THE DEVELOPMENT OF TIME PRESSURE SCALE

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Abstract

Purpose *– Time is becoming an increasingly important factor in making decisions-especially in business life and also present in all human activities. (Bahrololoumi, 2021). The need to process large amounts of information in a short time has a decisive impact on the decision-making process and decision quality. (Smith and Hayne, 1997). When the studies are examined, it is seen that time pressure affects people's perception and decision making in different situations and reveals it as an external stress factor. (Svenson and Edland, 1993). On the other hand, due to its structure, the aviation industry draws attention to the fact that time pressure has a great effect on the employees of the industry. When the dynamics of the sector are examined, the use of time in the working process becomes a performance indicator. Based on these explanations, the effects of time pressure on the aviation industry emerge as an important issue. The aim of this study is to develop a scale that can reveal the effects of time pressure in the aviation industry, based on the importance mentioned here, and to make the first application on the Turkish aviation industry based on this scale. It is noteworthy that there is no scale that examines time pressure on aviation and even other sectors in the reviewed literature. Exactly for this reason, specifying the effects of time pressure in the aviation industry constitutes the research question of the study. Although it is so important and it is mentioned in many studies, the absence of a scale on the subject is seen as an important gap. With the present study, an important gap in the literature will be filled and it will be a serious guide for future studies.*

Design / Methodology / Approach *– Since the study is a scale development and application study, the concept of time pressure was examined in depth. As a result of this literature review, the issue of time pressure in the aviation industry was discussed and the main themes of the study were revealed. With this framework, firstly, interviews were held with academicians working on aviation and its management, and these people were brought together in focus interviews. Afterwards, interviews were held with people working at different levels from the sector, and then all of these people were brought together to discuss the items of the scale. The obtained scale items were first sent to the experienced employees of the sector to be evaluated. The resulting items were finalized by examining the academicians.*

Findings *– In the continuation of the study, it was applied with 147 samples consisting of employees in the Turkish aviation industry. 65.3% of the sample consists of male and 34.7% female employees. While*

93.9% of the participants are between the ages of 18-40, they mainly work in the passenger services (55.8), Operations services (27.2%) and Ramp services (14.3) departments. When the educational backgrounds are examined, it is seen that 87.3% of the participants have an associate degree, undergraduate and graduate education, and they receive education in a wide variety of fields. On the other hand, the prominent segments are aviation management with 25.9%, Business and Administration with 10.9% and civil air transportation management with 8.8%. Again, 68.1% of the participants work at airports operating in Istanbul and Ankara, and 50% have a service period ranging from 1 to 5 years in the aviation sector. The results obtained were firstly subjected to exploratory and confirmatory factor analyzes. As a result of the analysis, 3-dimensional time pressure scale was developed which are "time pressure from work" consisting of 7 items; "time pressure coused by the management" consisting of 8 items; "time pressure caused by the person" consisting of 3 items.

Originality / Value *– Time is an important issue that humanity has been discussing for centuries. In today's world, the importance of the concept of time becomes crucial. It is noteworthy that the concept of time has a much more important meaning in the business world. The value of every moment is discussed in depth with the increasing competition and technology that offers an unlimited world. Especially the studies based on time management has been examining theese subjects in detail. While saving time for employers means wealth, it creates time pressure as a performance indicator for employees. Time pressure manifests itself with its positive and negative effects for the employee. Especially in sectors such as decision-making and rapid decision-making, time pressure appears with much more serious consequences. Among these sectors, perhaps the first sector can be called the aviation sector. It is inevitable that time pressure affects the sector in many ways, since the sector is based on a human-oriented service. Due to this feature, the issue of time pressure is very important in the aviation industry. The scale of the pressure of time will contribute both to the development of the concept and to increase the studies on the subject and to the sector enterprises.*

Keywords *– Aviation industry, scale development, time, time pressure*

References

Bahrololoumi M, Rokooei S, Jafari Fesharaki M. 2021). Effects of Time Pressure on Decision Making Process and Outcomes in Construction Projects. J Arch Des Cons Tech, 2(1):28-36.

Smith, C. A. P., & Hayne, S. C. (1997). Decision making under time pressure: an investigation of decision speed and decision quality of computer-supported groups. Management Communication Quarterly, 11(1), 97-126.

Svenson, O., & Edland, A. (1993, October). On judgment and decision making under time pressure and the control of process industries. In Proceedings of IEEE Systems Man and Cybernetics Conference-SMC (Vol. 3, pp. 367-375). IEEE.

Session VII

Session Chair

Prof. Dr. Nevsan ŞENGİL

REFLECTIONS OF THE STRATEGIES APPLIED IN THE BOEING 737-MAX CRISIS MANAGEMENT ON PASSENGER PERCEPTION

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Abstract

Purpose – *After two crashes in Indonesia in 2018 and Ethiopia in 2019 that killed 346 people, Boeing 737-Maxs became a global safety crisis and were grounded worldwide on March 13, 2019. As Boeing pursues crisis strategies to regain brand trust, in November 2020, the American Federal Aviation Administration (FAA) approved the Boeing 737 Max to return to the skies, and other aviation authorities, including the Turkish Civil Aviation Authority (SHGM) has started to give permission for these planes to fly again. Airlines are also slowly adding the 737 Max back to their schedules. One of the most important external stakeholders of airlines is passengers. In this respect, it is very important for the sustainable development of commercial transport to restore the confidence of the passengers regarding the Boeing 737-Max family. Consequently, the strategies pursued to correct the flight control problem and restore confidence may not have changed the perceived risk of flying Boeing 737-Maxs. This study aims to understand whether Turkish passengers are worried about the safety of Boeing 737-Maxs after a crisis in the competitive aviation industry following two fatal plane crashes and whether they prefer airlines that continue to fly with 737-Maxs.*

Design / Methodology / Approach – *In this study, the interview method, which is one of the qualitative research methods, was preferred to reveal the perceptions of the participants. In order to get more detailed answers to the questions asked, the semi-structured interview technique, which allows asking sub-questions, was used.*
The population of the research was determined as passengers who have no fear of flying and who have heard of Boeing 737-Max accidents. Since our aim was not to determine the factors and conditions related to fear of travel, because those with fear of flying showed less desire to travel by plane, "passengers in Turkey who had no fear of flying" and "passengers in Turkey who had heard of Boeing 737-Max accidents" were chosen as the sample of the research.
Within the scope of the research, since similar field studies were not found in the literature, the interview questions were obtained within the scope of in-depth literature review. A total of 14 questions were asked to the participants in the study.
In the research, 32 people constituting the sample group were interviewed. 17 women and 2 men could not be interviewed because they did not hear about the Boeing 737-Max accidents and the data obtained were analyzed by content analysis technique.

Findings – *The negative situation caused by the accidents involving Boeing 737-Max model aircraft still hinders passenger compliance, despite the crisis strategies implemented by the manufacturer. 12 out of 11 female participants (92%) and 20 out of 10 men (50%) think that Boeing 737-Max is not safe. 66% of respondents in total think that the 737 Boeing-Max aircraft is not safe. It was determined that*

the participants, who did not look at the type of aircraft they flew or heard about Boeing before, paid attention to the type of aircraft or remembered Boeing with these accidents after watching the long-term crisis news of the manufacturer in the media. Another remarkable aspect of the research is that the positive safety opinions towards Boeing 737-Maxs are resulted from the trust placed in the airline, pilot and aviation authorities rather than the aircraft manufacturer. Findings showed that after return to service, passenger preference for this aircraft will be low by Turkish passengers compared to competing modern aircraft, yet other Boeing products continue to instill a 72% sense of safety and confidence based on the opinions of 23 people (Bravo et al., 2021).

Originality / Value – *As a result of the literature review in English, only one study (performed by Bravo et al. in 2021) investigated whether individuals who are afraid of flying Boeing 737-Max aircraft type in North America change their choices depending on ticket parameters. Although there are studies on the technical dimension of the Boeing 737-Max crisis in the Turkish literature, no study has been found investigating the perspectives of Turkish passengers on aircraft types and especially Boeing 737-Max. Therefore, this research is expected to reveal the reflections of Boeing's decisions in the international market on Turkish passengers. The results will guide practitioners in the planning phase of crisis management regarding the types of aircraft involved in the accident.*

Keywords – *Boeing 737-Max, Safety, Aviation, Crisis Management, Passenger Preference.*

References

Adey, P. (2010). Aerial life. MA: John Wiley & Sons Ltd.

Barnett, A., Menighetti, J. and Prete, M. (1992). The market response to the sioux city DC-10 crash. Risk Analysis, 12.1, 45-52.

Barry, K. and Suliman, S. (2019). Practices of "travelling light" for secure and sustainable aeromobilities. Journal of Sustainable Tourism, 1-14. DOI: 10.1080/09669582.2019.1607360

Benoit, W. L., and Czerwinski, A. (1997). A critical analysis of USAir's image repair discourse, Business Communication Quarterly, 60(3), 38-57.

Benoit, W. L. (2018). Crisis and image repair at united airlines: Fly the unfriendly skies, Journal of International Crisis and Risk Communication Research, 1(1), 11-26.https://doi.org/10.30658/jicrcr.1.1.2

Blokland, P. and Reniers, G. (2020). Safety science, a systems thinking perspective: from events to mental models and sustainable safety. Sustainability, 12, 1-18. doi:10.3390/su12125164

Bogdan, R.C. and Biklen, S.K. (1992). Qualitative research for education: An introduction to theory and methods, Boston: Allyn and Bacon.

Boeing, (2019, March 13). In consultation with the FAA, NTSB and its customers, boeing supports action to temporarily ground 737 MAX operations. Retrieved from https://boeing.mediaroom.com/news-releases-statements?item=130404

Bravo, A., Darlı, V. and Ferrer, G. (2021), The Fear of Flying and the Competitiveness of a Return to Service of the Boeing 737 MAX, The Journal of Modern Project Management, 8(3).

Common, D. (2019, April 24). Passengers are afraid of this airplane': how boeing is handling its 737 Max problem. Retrieved from CBC News.

Coombs, W. T. (2007). Ongoing crisis communication: Planning, Managing, and responding. Los Angeles: Sage.

Coombs, W. T. (2010). Crisis Communication and it's allied fields, in: Coombs, W.T. / Holladay S.J., The Handbook of Crisis Communication, Oxford, pp. 54-64.

Coombs, W. T. (2012). Ongoing crisis communication: Planning, managing, and responding, Thousand Oaks, Calif: SAGE.

Çoban, R. and İpek, S. (2020). Sivil havacılık sektöründe uçuş güvenlik görevlisi uygulamaları üzerine kavramsal bir araştırma. Journal of Aviation, 4(1): 89-102.

Gigerenzer, G., (2004). Dread risk, september 11, and fatal traffic accidents. Psychological Science. 15, 286–287.

Glanz, J., Beech, H., and Suhartono, M. (2018, November 27). In Indonesia lion air crash, black box data reveal pilots' struggle to regain control. Retrieved from New York Times.

Gönen, İ. and Yamamoto, G. (2012). Crisis management of the Turkish civil aviation companies: A study of 2004 and 2011 years. International Journal of Economics and Management Sciences, 1(6), 45-49.

Grimmelt, J. (2017). Recommendations for crisis management. Paris: International Union of Railways (UIC).

Guba, Egon G., Lincoln and Yvonna S. Lincoin (1982). Epistemological and methodological bases of naturalistic ınquiry, Educational Communication and Technology, 30(4), 233-252.

Heine, T. (2019). An analysis of boeing's image repair efforts. (Master thesis, Southern Utah University, Cedar City Utah). Retrieved from https://www.suu.edu/hss/comm/masters/capstone/thesis/heine-t.pdf

Imad, A. R., Elbuzidi, K. J. S. and Chan, T. (2021). Crisis management and communication approach: a case of boeing 737 MAX, Journal of Arts & Social Sciences, 4(2), 7-14.

International Air Transport Association Annual Review (2019). 75th Annual General Meeting, Seoul. Retrieved from: https://www.iata.org/contentassets

Josephs, Leslie. (2019). Boeing's rocky road to win back trust after deadly 737 Max crashes: 'We're not there yet'. Retrieved from https://www.cnbc.com/2019/06/04/boeing has-a-rocky-road-to-win-back-trust-after-deadly-737-max-crashes.html

Laris, M., Aratani, L., Dawsey, J., and Olorunnipa, T. (2019, March 13). FAA doubles down on decision not to ground the Boeing 737 Max, as counterparts around the world have done. Retrieved from Washington Post.

Mack, N., Woodsong, C., Macqueen, K., Guest, G. and Namey, E. (2005). Qualitative research methods: A data collector's field guide. North Carolina: Family Health International.

Marx, J., Mirbabaie, M., Czonstke, C. and Stieglitz, S. (2021). Social media analytics and corporate crises – A case study of boeing's 737 max crashes. Twenty-Ninth European Conference on Information Systems. (ECIS 2021), Marrakesh, Morocco.

Naor, M., Adler, A. Pinto, G. D. and Dumanis, A. (2020). Psychological safety in aviation new product development teams: case study of 737 MAX airplane, Sustainability, 12, 1-15. doi:10.3390/su12218994

National Transportation Safety Board. (2019) Assumptions used in the safety assessment process and the effects of multiple alerts and indications on pilot performance. Safety Recommendation Report issued on 19 September 2019. Retrieved from https://www.ntsb.gov/investigations/AccidentReports/Reports/ASR1901.pdf

Ray, S.J. (1999). Strategic Communication in crisis management: Lessons from the airline industry. Westport, CT/London: Quorum Books.

Samuels, B. (2019, April 25). Trump speaks with Boeing CEO after crash raises concerns. Retrieved from https://thehill.com/policy/transportation/433734-trump-speaks-with boeing-ceo-after-crash-raises-concerns

Sarıbaş, H. ve Tekiner, İ. (2015). Türkiye Sivil Havacılık Sektöründe Yoğunlaşma. Finans Politik & Ekonomik Yorumlar, 52 (610). 21-33.

Seeger, M., Sellnow, T. and Ulmer, R. (2003). Communication and organizational crisis. Westport, CT: Praeger publishers.

Sellnow T. and Seeger M. (2013). Theorizing Crisis Communication. Sussex: John Wiley & Sons West.

Shvindina, H. (2019). Coopetition as an emerging trend in research: perspectives for safety & security, Safety, 5, 61: 1-22. doi:10.3390/safety5030061

Slotnick, D. (2019). The Boeing 737 Max just made a huge step towards getting back in the skies. Retrieved from https://www.businessinsider.com.au/boeing-737-max-timeline-history-full- details-2019-9?r=US&IR=T

Vargas-Hernández, J. G. and Hernández Martínez, M. G. (2019). The reputation of the aerospace company boeing and its repercussions in the mexican market. effect of the crisis due to accidents in 2019, ABS International Journal of Management. 7,2, 14-20.

Waymer, D. (2013). Democracy and government public relations: Expanding the scope of "Relationship" in public relations research. Public Relations Review. 39(4), 320–331.

Winter, S. R., Rice,S., Rains, T., Milner, M. and Mehta,R. (2017). Alongitudinal study on the alteration of consumer perceptions and the use of pilot medication. Journal of Air Transport Management, 59, 100-106.

Wong, J.T., Yeh, W.C., (2003). Impact of flight accident on passenger traffic volume of the airlines in Taiwan. Journal of the Eastern Asia Society for Transportation Studies, 5, 471–483.

Wouter, J. and Broekman, P. (2021). Crisis history and hindsight: A stakeholder perspective on the case of Boeing 737-Max, Public Relations Inquiry, 10(2), 185–196.

Yıldırım, A. and Şimşek, H. (2011). Sosyal Bilimlerde Nitel Araştırma Yöntemleri. Ankara: Seçkin Yayınevi.

Yilmaz, A. K. and Flouris, T. G. (2019). Values, Ergonomics and Risk Management in Aviation Business Strategy. Singapore: Springer Nature.

ISTANBUL AIRPORT ANALYSIS WITHIN THE FRAMEWORK OF THE AEROTROPOLIS STRUCTURE

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Abstract

Purpose - *Considering that a new airport-centered city establishment and sustainability phenomenon with all its components is interesting and unique as a study subject, this study focuses on the airport model of "Aerotropolis", which is a component of airport management, and sustainability of this model. In this context, the "Airport City" and "Aerotropolis" models, which are in demand in today's airport design process and whose theoretical framework was largely created by John Kasarda, are discussed and the similarities and differences between them are examined. In this context, the Istanbul Airport review, which is the first and only "Aerotropolis" building example in Turkey, is made through publicly published secondary data. The main purpose of the review; is to determine which features of the airport coincide with the "Aerotropolis" structure. In this context, since the "Aerotropolis" structures are not only airport-oriented but also the other "Aerotropolis" building components, which are integrated with the airport project, are also examined.*

Design / Methodology / Approach - *According to the findings obtained from the development schemes of airports, the study first starts with the concept of "Airport City". Because when the "Airport City" model is examined, it is possible to say that an airport like the "Aerotropolis" structure forms the center (core) of the project. Since similar and different aspects can be identified in the activity-oriented analyzes carried out for both model airports, aviation and non-aviation activities are considered as a whole in the approach to the subject. Thus, it will be easier to answer the question of whether Istanbul Airport is an "Airport City" or an "Aerotropolis" in terms of activity. In addition, there will be another subheading in which the suitability of the "Aerotropolis" model for the Istanbul Airport is discussed, taking into account the 7 main features of the model. When the project plans are examined, it appears as "Aerotropolis", but the approach will become stronger thanks to the analysis to be made in terms of its basic features. For the "Aerotropolis" projects, which should be sustainable in terms of structure, the study is concluded by making an evaluation under this title. The basis of the analyzes carried out in this study is the secondary data obtained on the subject.*

Findings - *As a result of the analyzes carried out in this study, it is possible to determine that Istanbul Airport is an "Aerotropolis" structure. According to the findings under the heading of airport activities, the fact that non-aviation-oriented activities want to create a wide commercial network on behalf of Istanbul and the Marmara Region proves this situation. Canal Istanbul, Northern Marmara Highway and Fatih Sultan Selim Bridge Projects, Istanbul Airport Project were planned together, and the trade network in the region; all transportation modes such as air, land, sea and railway were planned and designed together in an integrated manner. In addition to these projects, housing is provided in the*

airport area with the Istanbul Airport City Project. As a component of the "Aerotropolis" model, a modern living space, including all the modern requirements of the residential areas that will require increased employment in the region, has been included in the Istanbul Airport City Project. In this way, the basic needs of people who will migrate to the region for employment purposes will be easily provided. In the study, as a result of the examination made according to the 7 basic features that an airport with an "Aerotropolis" structure should have, some missing points were determined for Istanbul Airport. However, when an evaluation is made in general, it is very clear that it meets the demands, especially in terms of smart technology use and integrated projects. Considering that airports are built as a result of long-term planning, it is thought that it will be possible to complete the missing points, if they are managed correctly, they will create a great employment in the region and have positive effects on the development of our country.

Originality / Value – *One of the prominent issues in airport-focused scientific studies today is about "Aerotropolis". After an extensive literature review, the study was designed in two stages. First of all, the "Airport City" and "Aerotropolis" models were handled separately and their conceptual integrity and distinction points were determined with examples. Afterwards, while "Aerotropolis" focused on the model, the model analysis was based on the seven basic characteristics of "Aerotropolis" and the model analysis was developed in this context, with the emphasis that the model gives priority to non-aviation activities and the revenues obtained from these activities rather than the revenues from aviation-oriented activities. It is aimed to determine which of the "Airport City" or "Aerotropolis" models is a project closer to Istanbul Airport, through the generalizations drawn from here.*

Keywords – *Aerotropolis, Airport City, Istanbul International Airport, Sustainability*

References

Akca, M. (2020). Havalimanı Şehri Modeli. International Journal of Managament and Administration, 4(7), 185.

Kahraman, C., Alkan, G. (2018). Istanbul's Third Airport in Therms of Transportation Geography: Geopolitics, Regional and Economic Effect. People: International Journalof Social Sciences, 3(3),1259-1260.

Kasarda, J. D. (1996). Airport-Related Industrial Development. Urban Land, 6(55), 54-55.

Kasarda, J. D. (2006, 07 26). Airport Cities and the Aerotropolis.

Kasarda, J. D. (2008). Airport Cities: The Evolution. Insight Media, 1.

Kasarda, J. D. (2009). Airport Cities. *Urban Land*, 56-60.

Kasarda, J. D., & Appold, S. J. (2014). Planning a Competitive Aerotropolis. *The Economics of International Air Transportation, 4*, 41.

Peneda, M. H., & vd. (2011). Critical Factors for Development of Airport Cities. *Transportation Research Record: Journal of the Transportation Researc Board*, 1-9.

Schaafsma, M. & Güller, M. & Amkreutz, J. (2008). Airport and City: Airport Corridor: Drivers of Economic Development. Amsterdam: Real Estate.

Uzurçarşılı Baysal, C. (2017). 3. Havalimanı Projesi: Kuzey Ormanları'na Aerotropolis Kondu, Mimarlık Dergisi, 53(394), 12.

Ülgen, Sinan, Ahmet Kasım Han, Mithat Özbek, Ayşe Deniz Lokmanoğlu. (2016). İstanbul Yeni Havalimanı Ekonomik Etki Analizi Raporu.

Walker, A., & Baker, D. (2010). A Planning Support System For Airport City Development. *Proceedings of the 14th Air Transport Research Society Conference*. Portugal.

A COMPARISON BETWEEN EUROPEAN UNION&TURKEY'S CIVILIAN UNMANNED AIRCRAFT SYSTEMS (UAS) REGULATIONS

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Abstract

Purpose – *With the increasing use of unmanned aircraft systems (UASs) for civilian purposes, the need for a regulation providing these systems' safe integration into national and international airspace has become inevitable.*
According to a research made by FAA in 2017; only %30 of current manned aviation regulations can directly be applied to UAS operations, %54 of them can be applied only after some modifications and %16 is not applicable at all.
As it is known, UASs have many unique differences compared to manned aircraft. For example, these systems have different weights, shapes, dimensions, speeds, areas of use, frequency, endurance capability, service altitudes, control types (remote, autonomous), ground service needs and lower prices… The technological dynamism observed in UASs is one of the biggest obstacles in front of the regulation studies for these systems. Not a day goes by without a new technology development regarding UASs. This situation causes the regulations regarding UASs to change frequently. In this scope, a separate and dynamic regulation study is required for civil UAS operations. For all these reasons, intensive studies have been carried out to ensure the safe integration of UASs into civil airspace, both in the EU and in Turkey.
The aim of this study is to reveal the differences between the UAS regulations in the EU and Turkey and to contribute to related studies in Turkey.

Design / Methodology / Approach – *The design of the research consists of analysis of EU and Turkey's UAS related documents and observations from the personally attended meetings both in Turkey and EU.*

Findings – *Regulation preparation activities in EU began with a task given to EASA (European Aviation Safety Agency) by European Commission with Riga Declaration made in 2015. As a result of hard work, EASA published its final Prototype Commission Regulation on Unmanned Aircraft Operations on August 22, 2016. This prototype regulation was prepared with a risk-based approach in line with the rules applicable to manned platforms and is called "no more no less policy". It was tried to establish a balance between the risks and the development of the sector. Continuing the regulatory work on UAS, EASA published "Introduction of a regulatory framework for the operation of unmanned aircraft systems in the 'open' and 'specific' categories-Opinion No 01/2018" on February 06, 2018.*
EU Commission's final Delegated Regulation (EU-2019/945) was published and entered into force on March 12, 2019 and Implementing Regulation (EU- 2019/947) on May 24, 2019.
Delegated Regulation (EU-2019/945) lays down the requirements for the design and manufacture of unmanned aircraft systems. It also contains obligations of manufacturers, importers, and distributers. In addition, this regulation includes regulations regarding the acquisition of "geo fence", "remote

identification" and "sense and avoid" capabilities in order to ensure the safe integration of UASs into the European airspace.

According to Implementing Regulation (EU- 2019/947); unmanned aircraft, irrespective of their mass, can operate within the same Single European Sky airspace, alongside manned aircraft, whether airplanes or helicopters. The rules and procedures applicable to UAS operations should be proportionate to the nature and risk of the operation or activity. The risk level criteria as well as other criteria should be used to establish three categories of operations: the 'open', 'specific' and 'certified' categories. Considering the risks to privacy and protection of personal data, operators of unmanned aircraft should be registered if they operate an unmanned aircraft which is equipped with a sensor able to capture personal data. UAS operators and remote pilots should ensure that they are adequately informed about applicable Union and national rules relating to the intended operations, in particular with regard to safety, privacy, data protection, liability, insurance, security and environmental protection. Regulation should already include requirements for the implementation of three foundations of the U-space system, namely registration, geo-awareness and remote identification.

Within the scope of the studies carried out by Directorate General of Civil Aviation (DGCA) in Turkey; the first UAS Order was published on October 30,2013, and it was repealed with the new order (SHT-İHA) published in February 2016. This last order has undergone many changes in the light of EU UAS regulations and its final version was published on June 05, 2019 and entered into force. New changes in the order has been made on June 12, 2020.

This Order lays down the rules and procedures for; importation, sale, registration, airworthiness, crew qualifications, air traffic service, operation of civil UASs in Turkish airspace. DGCA UAS Order does not apply to; State UASs, UAS intended to be exclusively operated indoors, tethered balloons and finally UASs weighing less than 500 gr. State UASs include UASs used for military, security, customs, intelligence, firefighting and natural disasters purposes.

According to the DGCA UAS Order, there are four different categories of unmanned aircraft(UA), determined by weight criteria. UAs with maximums take off mass; 500g-4 kg are called UA0, 4kg-25 kg are UA1, 25kg-150 kg are UA2 and lastly 150 kg and more are UA3. Increasingly different requirements are defined for different categories of UAs according to their weight.

In addition, with an amendment to Article 144 of the Turkish Civil Aviation Act No. 2920, new regulations regarding UASs were introduced. This article generally regulates the registration responsibilities of companies that sell UASs in the country and those who purchase UAS from abroad or from someone else in the country.

At the end of the study, it was determined that the risks caused by the operation were taken into consideration rather than the weight of the UASs in the EU regulations and rules were established accordingly, whereas in Turkey, on the contrary, different rules were established for different types of UAVs by considering only the weight of UASs.

Beginning from 2013, when the first version of DGCA UAS Order was issued, many changes and amendments have been witnessed. Although there are still many differences between them, it is expected that Turkish UAS regulations will evolve into a structure similar to EU UAS regulations with the changes being made in course of time.

***Originality / Value –** This study is the first in its field and may form the basis for similar studies in the future. It may also contribute to DGCA's ongoing harmonization studies with EU*

***Keywords –** Unmanned Aircraft Systems, UAS Law, İHA, SHT-İHA, EU-2019/945, EU- 2019/947*

References

EU Commission's final Delegated Regulation (EU-2019/945)

EU Implementing Regulation (EU- 2019/947

Sivil Havacılık Genel Müdürlüğü İHA Talimatı, SHT-İHA

ALTUN, Çağlar, Silahlı/İnsansız Hava Araçları Hukuku, Adalet Yayınevi, 2021

Civilian Drones, 2017, The Economist <www.economist.com/-technology-quarterly/2017-06-08/civilian-drones

Introduction of a regulatory framework for the operation of unmanned aircraft systems in the 'open' and 'specific' categories-Opinion No 01/2018, EASA, 06.02.2018

REPORT OF SPECIAL SERVICES PROVIDED TO PASSENGERS WITH DISABLED AT AIRPORTS

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Abstract

Purpose - *Today, the aviation industry is growing rapidly. There are also passengers from different categories as a result of this growth. Passengers benefiting from this service include disabled passengers and passengers receiving special services. The aim of this research is to investigate the deficiencies in the services provided to the disabled passengers who benefit from the aviation sector and to the passengers who need special services, and to make suggestions for solutions in order to eliminate these deficiencies and improve the services provided.*

Design/Methodology/Approach - *Two stages were prepared while preparing this report. The first stage was a literature review. The definition of disability and its formation process are explained. The categories of passengers receiving special services and the types of disability were investigated. Special services provided are mentioned. Disabled passengers' rights and instructions were examined. The services provided by the airline companies were examined. The barrier-free airport project has been researched and not to barrier-free airports in Turkey.*
In the second stage, observations were made at Ankara Esenboğa Airport and face-to-face interviews were conducted with the authorized/field personnel. Various opinions and incident samples were taken from experienced personnel and companies working at the airport. In addition, the complaints and feedbacks of the passengers on the internet were examined. These are available on internet complaint sites.
Solutions were offered to the problems experienced by the passengers as a result of the examinations. Recommendations were made to aviation companies.

Findings - *As a result of the identified problems, comments and evaluations are given below.*
1. There are passenger comments that the airport staff know the operation of the passengers receiving special services but are insufficient in implementation. For example, one of the leading companies in the sector demands a fee for a service that should be provided free of charge.
2. There are 138 different sign languages in the world. Citizens of each country generally know the sign language used in their country. The absence of a standard sign language in aviation or the lack of awareness of the sign language used by the personnel by the citizens of all countries creates some communication problems.
3. There are some events experienced by the personnel while serving at the airport. The list prepared for passengers receiving special services is insufficient under exceptional circumstances. Therefore, airport personnel are insufficient in service because they cannot implement a certain instruction. For example, the "illiterate" passenger is served, but is not included in the list.

4. Disabled passengers who use the airport are unaware of their rights and service flow due to the lack of information about receiving special services. For example, the passenger arriving at the airport is unaware of the services they can receive, so they cannot get sufficient service efficiency. This affects passenger satisfaction.

Originality / Value - *Today, the growing aviation industry serves different passenger categories. Persons working in the aviation industry aim to provide the best possible service to the passengers. Special service is a job that requires precision. It is the primary duty of the special service personnel to meet the expectation of the passenger and to help. Therefore, the service to be given to disabled passengers requires more sensitivity.*

In this report, the adequacy of the special service provided in the aviation sector has been investigated. The problems in this area were identified by examining the literature and using observation and interview methods. Suggestions were made in order to solve the problems identified as a result of this study and to increase the quality of the services provided to the disabled passengers. Thanks to these solutions, the deficiencies identified are completed and the disabled passengers who receive special services in the aviation sector; satisfaction and service quality will be increased. For this, the services must meet certain standards and the necessary training must be given to the personnel.

There are many sign languages in the world. People who use sign language use sign language in their own country. Therefore, communication problems arise. In order to eliminate this problem, the sign language used in aviation should be based on English.

Efforts were made to provide convenience for disabled passengers at the airports. One of the most important of these is the Barrier-Free Airport Project. The aviation industry is developing day by day. While developing, new problems are encountered. In our report, current problems are mentioned and solutions for them are presented. If these suggestions are taken into account, it is thought that it will make positive contributions to the aviation industry and the quality of service received by disabled passengers.

Keywords - *Disabled Passenger, Aviation, Service Adequacy, Special Service*

References

AIR CLINIC (2021). Retrieved 01.11.2021 from https://www.airclinic.com.tr/hizmetlerimiz/hasta-tasima/ (Translated)

Aksoy, D. ve Giray, V. (2018). Bakıma Gereksinimi Olan Birey-I. Eskişehir: Anadolu Üniversitesi Açık Öğretim Fakültesi Yayınları. (Translated)

Dünya Sağlık Örgütü. (2011). "Dünya Engellik Raporu". 1. https://www.engellilerkonfederasyonu.org.tr/wp-content/uploads/2020/04/D%C3%BCnya-Engellilik-Raporu-2011.pdf (Translated)

Ergün, N. ve Yavuz, N. (2019). Yolcu Hizmetleri. Eskişehir: Anadolu Üniversitesi Açık Öğretim Fakültesi Yayınları (Translated)

HAVAŞ (2020). Retrieved 01.11.2021 from http://www.havas.com.tr/tr/Hakkimizda/KurumsalSurdurulebilirlik/Documents/Havas-Engelsiz-Brosur-2020.pdf (Translated)

Pegasus Havayolları (2021). Retrieved 04.06.2021 from https://www.flypgs.com/faydali-bilgiler/diger-bilgiler/yardim-gereksinimi-olan-misafirler#baslik-1 (Translated)

PORTCLINIC (2021). Retrieved from 01.11.2021 http://www.portclinic.com.tr/icerik.asp?konu=hizmetler&altkonu=hastatasima (Translated)

SHGM (2015). Retrieved from 28.05.2021 http://web.shgm.gov.tr/documents/sivilhavacilik/files/pdf/projeler/ehk_31.12.2015.pdf (Translated)

SHGM (2015). Retrieved 28.05.2021 from http://web.shgm.gov.tr/tr/genel-duyurular/5006-engelli-veya-hareket-kabiliyeti-kisitli-havayolu-yolculari-talimati-yayimlanmistir (Translated)

SunExpress (2021). Retrieved 04.06.2021 from https://www.sunexpress.com/tr/bilgi/yolcu-bilgilendirme/engelli-yolcular/ (Translated)

Türk Hava Yolları (2021). Retrieved 04.06.2021 from https://www.turkishairlines.com/tr-us/bilgi-edin/hasta-ve-engelli-yolcular/ (Translated)

Yavuz, N. (2019). Yer Hizmetleri Yönetimi. Eskişehir: Anadolu Üniversitesi Açık Öğretim Fakültesi Yayınları. (Translated)

Yeğnidemir H.Ç. (2013). "Engelsiz Havalimanı" Projesi Ve Havalimanı Terminal Binalarının Engelliler Açısından Örneklerle İncelenmesi. (Yayınlanmış Yüksek Lisans Tezi) Gazi Üniversitesi, Ankara. (Translated)

Session VIII

Session Chair

Assoc. Prof. Dr. Yaşar KÖSE

CRISIS AND CRISIS MANAGEMENT: AN ASSESSMENT ON THE USE OF AVIATION IN FOREST FIRES

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Abstract

Purpose – *The crisis, which can be defined with words such as a difficult period, depression, depression in the life of a society, an institution, or a person, can cause a wide variety of results depending on the level of welcome and preparation in terms of unexpected and sudden occurrence. Crisis management, which is a management technique aiming to increase organizational efficiency, is an important management tool in terms of preparing institutions and organizations against unexpected events such as natural disasters and keeping the changing environment under control.*
Forests are under the threat of various factors in Turkey as well as all over the world. Of these, forest fires cause damage to forests of different sizes and loss of forest areas almost every year. In Turkey, within the scope of administration, studies are carried out on the protection of forests from fire, preventive and extinguishing of fires. In this context, the aim of the study is to examine the concepts of crisis and crisis management within the scope of forest fires and to increase the efficiency of use of aircraft within the scope of preventing and extinguishing forest fires in Turkey. In addition, it is aimed to reduce the reaction in the society during forest fires and to contribute to the protection of nature.
For this purpose, in the study, after presenting the concept of crisis and the theoretical framework of crisis management, forest fires, one of the natural disasters that caused the crisis, were discussed in terms of management, and evaluations were made in terms of the place and use of aviation in forest fires.

Design / Methodology / Approach – *Within the scope of the study, publications on the place and use of aviation in forest fires, one of the natural disasters that caused the crisis, were examined. In this context, academic publications on crisis management and forest fires and the publications of authorities, institutions and organizations are considered as secondary data sources. The data obtained were evaluated using the literature review method. In addition, the results obtained are discussed in a perspective on the use of aviation in the prevention and extinguishment of forest fires.*

Findings – *It is seen that forest fires cause more and more damage to social life with each passing day, and delays in intervention and prevention appear as a weak aspect of the administrations. As a result of the secondary data sources scanned, it has been determined that aircraft are used more and more in the context of crisis management and forest fire response and prevention. In this way, it is evaluated that the reaction in the society can be reduced, and it can contribute to the protection of nature.*

Originality / Value – *In our research, evaluations on the development of forest fire response and prevention measures and the more effective use of aircraft in this context are included. The recent forest fires have shown that the social reaction is increasing with every second of delay in responding to fires, and these delays are seen as a deficiency of the administration. With the evaluations included in our study, the reaction in the society will be reduced and the management will be improved. It will also contribute to the protection of nature.*

Keywords – *Crisis, Crisis Management, Disaster, Forest Fire, Aviation.*

References

Akay, A.E., Serin, H. ve Yenilmez, N. (2008). Orman Yangınları ile Mücadele Kullanılan Helikopterlerde Görev Yapan Pilotların ve Diğer Personelin Sağlık ve İş Güvenliği Sorunlarının İncelenmesi, 14. Ulusal Ergonomi Kongresi (30 Ekim – 1 Kasım 2008) Trabzon.

Akdağ, Mustafa & Arklan, Ümit (2013), "Kamu Yönetiminde Kriz Yönetimi", The Journal of Academic Social Science Studies, Vol. 6, Issue 4, p. 33-55.

Akgül, M., Yurtseven, H., Demir, M., Akay, A.E., Gülci, S., Öztürk, T., (2016). İnsansız Hava Araçları ile Yüksek Hassasiyette Sayısal Yükseklik Modeli Üretimi ve Ormancılıkta Kullanım Olanakları. Journal of the Faculty of Forestry Istanbul University 66(1): 104-118.

Bozkurt Yavuz ve Akdeniz Burcu; (2014), Bir Kamu Yönetimi Sorunsalı Olarak Çevresel Kriz Yönetimi: ABD – Türkiye Karşılaştırması, Abant İzzet Baysal Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 14(1,14), ss.95-114.

Doğanay, H. & Doğanay, S. (2011). Türkiye'de Orman Yangınları ve Alınması Gereken Önlemler, Doğu Coğrafya Dergisi, 9 (11), 31-48.

Kayhan, S. (2021). Havacılık Güvenliğinde Kriz Yönetimi ve Kültür İlişkisi: Hofstede'in Kültürel Boyutlar Kuramı Bağlamında Atatürk Havalimanı Saldırısının İncelenmesi, Doktora Tezi, Anadolu Üniversitesi Sosyal Bilimler Enstitüsü, Eskişehir.

Menteşoğlu, B. E., ve İnan, M., (2016). İnsansız Hava Araçlarının (İHA) Ormancılık Uygulamalarında Kullanımı. VI. Uzaktan Algılama ve CBS Sempozyumu (UZALCBS 2016) (pp.316-324). Adana, Turkey.

Yavaş, H. (2004). Doğal Afetler Yönüyle Türkiye'de Belediyelerde Kriz Yönetimi (İzmir Örneği), Doktora Tezi, Dokuz Eylül Üniversitesi Sosyal Bilimler Enstitüsü, İzmir.

INVESTIGATION OF MILITARY AIRCRAFT ACCIDENTS OCCURING IN TURKEY

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Abstract

Purpose– *There have been many tensions and wars in the world from past to present. This necessitated the principle of "no state without an army" in all sovereign societies. In the early ages of history, there were two military forces, land and naval forces. When we came to the beginning of the 20th century, the air force was included as the third force next to these two military forces. The conclusion we can obtain from here is that aviation in the world started depending on the inventions and innovations in military aviation. Turkish military aviation, depending on these, was laid on the same dates.*

The idea of flying in humans emerged from the moment they realized their own existence. The first concrete attempt on this was experienced in France in 1783, when the balloon designed by the Montgolfier brothers was seen in the skies. This development has also brought to the agenda that the balloon can be used with the military field. The first attempt in the military field related to this was initiated by the French in 1794. Following the French, the British in 1879, the Russians in 1884, and Germany, Spain and Italy in 1885 established balloon classes in the military field. While these developments were taking place in the world, defense-oriented modernization investments were initiated by the Ottoman Empire in order to prevent military defeats and territorial losses in our country during these dates. Unfortunately, these investments remained land-oriented due to the financial situation of the country. Although there were balloon flights in our country at that time, a military balloon class was not established.

The fact that the balloon is too expensive and too risky due to the threat of wind has led to the need for a more useful vehicle. As a result of long studies, the American Wright brothers succeeded in airing the first powered airplane in 1903. Following this great development, studies on the development of aircraft began and the foundations of the aircraft industry were laid. The effectiveness, importance and size of aviation, which has developed rapidly with the aircraft, in the military field has led countries to organize in this field. The United States of America was organized in the field of military aviation in 1909 and became the first state to have a military aircraft in the same year. Just after this date, France established the first aviation organization in its army. England, Germany, Russia, Italy and Austria started to establish military aviation organizations in 1909 and completed their organization in 1912. Thus, between 1903 and 1912, the major states of the world formed the first military aviation organizations in their armed forces. In our country, the Turkish army has closely followed the developments in the

field of aviation since 1909. Previously, only modernization investments were made in the land forces, and due to the cost of the balloon, the organization was not started on that issue. In 1911, an aviation commission was established under the General Staff to purchase balloons and airplanes, train pilots and build facilities in the field of aviation. This commission went down in history as the first official organization of the Turkish army in the field of aviation. The state, which had a serious struggle in the Tripoli and Balkan Wars, started the air school in 1912 after the necessary personnel, equipment and facilities were completed. These developments prove that the Turkish Air Force Command, whose foundation was laid in 1911, is one of the first military aviation organizations in the world.

Turkish Air Force Command, like other land and naval units, ensures the security of the country under difficult conditions. It is handled as a whole, together with the controllers and technicians in the field, especially the fighter pilots. The long and difficult working conditions, the necessity of keeping up with the ever-changing work schedules and the possibility of encountering fatal results are wearing out in terms of human physiology and can lead to mistakes. When the plane crashes and incidents in the military are examined, the main factor is human, and international accident investigation organizations have determined that 70-80% of all airline accidents and incidents are human-induced. Purpose of the study; The aim is to collect and analyze the data on military aircraft accidents that occurred in our country between 1943 and 2021 in terms of the number of incidents and accidents, aircraft route, aircraft type and information, and the number of military personnel died after the accident.

Design / Methodology / Approach *– In this study, data on military plane crashes in our country between 1943 and 2021 were collected. The collected data were analyzed according to frequency distributions, and these analyzes were interpreted and the findings were given in order.*

Findings *– When the accidents and incidents are examined, it has been determined that the number of fatal accidents and incidents in 1951, 1957, 1959 and 2001 was higher than in other years. When the route information of the accidents included in the study was examined, it was concluded that the accidents were mostly experienced in Ankara-Balıkesir-Eskişehir and Konya environments. Looking at the types of aircraft involved in these accidents, it was seen that the aircraft belonging to Douglas and CASA companies suffered more crashes, and it was concluded that the most fatal accidents in our country were experienced in 1981, 2001 and 2003.*

Originality / Value *– In the literature review, it has been determined that the studies on the investigation of military aircraft accidents are handled in the perspective of team resource management or human factors. With this study, it is thought that a comprehensive study on military aircraft accidents will be brought to the literature and in this respect, the study is important and original.*

Keywords: *Military Aviation, Frequency Distribution, Turkey, Aircraft Accidents*

References

Aviation Safety Network, Database, Erişim Adresi: https://aviation-safety.net/database/, Erişim Tarihi: 27.09.2021.

Erdemli, M.G. (2011). Dünden bugüne Türk havacılık tarihi ve Eskişehir. Yüksek lisans tezi, Eskişehir Osmangazi Üniversitesi Sosyal Bilimler Enstitüsü, Eskişehir.

Şen, S. (1992). Türkiye'de modernleşme ordu ve askeri havacılık. Yüksek lisans tezi, İstanbul Üniversitesi Sosyal Bilimler Enstitüsü, İstanbul.

Tamer, S.M. (2020). Uluslararası havacılık ve savunma endüstrilerinde ar-ge yatırımlarını belirleyen faktörler. Yüksek lisans tezi, Kırıkkale Üniversitesi Sosyal Bilimler Enstitüsü, Kırıkkale.

METEOROLOGICAL TECHNOLOGIES FORESIGHT AND TECHNOLOGY ACQUISITION STRATEGIES RECOMMENDATIONS

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Abstract

Purpose *– Technology procurement strategy plays an important role in the development of countries. Determining the needs in many technology fields and according to the importance of these needs, which of the systems that can be accepted as technology will be procured and how they will be procured are the facts that need to be strategically decided. Technology investments are also important in the field of meteorology. Many negative factors caused by meteorological events can be prevented by early warning systems. If we take natural disasters as an example, there are 31 natural disasters around the world, 28 of which are due to meteorology. Earthquake, volcanic eruption etc. while natural disasters are unpredictable, it is possible to predict natural disasters originating from meteorology and take precautions and minimize the damage. In Aviation Meteorology, the detection and prediction technologies used are important in predetermining the problems that may occur in the flights and in taking precautions before flights. In this field, it is necessary to use predictive technologies and technologies that enable instant detection. Determination of meteorological events (Thunderstorm, Downburst, Microburst, Turbulence, Icing, Fog, etc.) affecting flight activities, and the fact that aviation is a sector that is extremely sensitive to meteorological events, and the meteorological support service demands of these airports, whose numbers are increasing rapidly, are determined by the World Meteorology Organization (WMO) and the General Directorate of Meteorology. It is tried to be met in accordance with the International Civil Aviation Organization (ICAO) standards. In this context, it is possible to take precautions against events such as icing and frost by using Early Warning Systems, one of the meteorological technologies. The technologies to be procured should be examined considering the benefits they will bring to the country, and limited economic resources should be properly managed in order to invest in the technologies that will provide the most benefit, encourage them and, if possible, internalize these technologies and provide permanent benefits. Today, forecasting and intervention of meteorological conditions, development of Early Warning Systems, providing meteorological data support to automobiles, development of meteorological satellites, widespread use of UAVs in the field of meteorology, and development of technological tools to be used in data acquisition are gaining importance. Considering the effect of global warming on meteorological events, the importance of meteorological technologies is increasing.*

Design / Methodology / Approach *– While conducting the study, first of all, research was conducted on the relevant subject. Technologies that are being developed in the literature are examined. The current situation was evaluated with descriptive analysis. In the field of meteorology, which technologies should be procured and how, and beyond the 2023 planning of the Turkish State Meteorological Service, a technology procurement strategy model and technologies that should be invested in were tried to be*

determined in line with the opinions of the experts on the subject. Then, the opinions of the experts working in the related fields were taken by interview method. As a result of the interview, the technology areas that are planned to be invested were determined. In order to evaluate the technology areas obtained, a delphi questionnaire was created on these subjects. Delphi technique, in an environment where different opinions arise, enables the evaluation of the opinions of individuals by consensus or scoring method and to reach a consensus on a certain issue. It is used as a means of reconciliation in environments where there are differences of opinion or conflicts. The Delphi technique allows for independent thinking. Participants can express their opinions freely and without being influenced. It is out of question to be influenced by the leaders while expressing their opinions on the issues. While providing consensus, the discussion environment is avoided. As the next step, using the Delphi questionnaire application again, the technology field headings that were directed to the participants and the results were ranked according to the degree of importance obtained.

Findings *– Existing technology procurement strategies were evaluated in the study. While the supply and development of technology in the field of meteorology is always an important issue, the needs in this field are increasing every year. It was foreseen that the studies on the development of the technologies in the field of meteorology were not sufficient, and it was concluded that more studies should be done on this subject. As a result of examining the meteorological technologies in the world and taking expert opinions, opinions were taken on which technology areas to invest in and how the technologies in these areas should be procured, considering the needs and urgency for the Republic of Turkey. Accordingly, due to the negative effects of global warming and the problems to be caused by natural disasters, direct purchase of critical technologies that are urgently needed, the supply of technologies that will take a long time to develop locally or for which there is no sufficient human and financial resources, through co-production, and finally by making R&D investments. Technology procurement strategies have been examined in order to produce the necessary technology areas with domestic opportunities.*

Originality / Value *– Current studies in the field of determining technology procurement strategies are rare. With the study, the current technological supply need in the field of meteorology has been tried to be determined. It is thought that our study will be a helpful resource for the locations that will decide to make the right investments regarding the technology supply in the field of meteorology in Turkey in 2023 and beyond.*

Keywords *– Survey, Natural Disaster, Global Warming, Meteorology, Strategy, Technology*

References

Alp N. , Alp B., Omurtag Y., " Technology Acquisition and Utilization Model (TAUM) " Computers ind. Engng Vol. (1997)33: 7-10

Anand J. "Redeployment of Corporate Resources: a Study of Acquisition Strategies in the US Defense Industries, 1978-1996" Managerial and Decision Economics (2004) 25: 383-400

Aytekin Ziylan Proje Yönetim Derneği Kongresi 12 Nisan 2001, İstanbul Ar-Ge'ye Dayalı Tedarik, Evrimsel Tedarik, Milli Ana Yüklenicilik www.inovasyon.org/getfile.asp?file=azmak2.pdf 20/11/09

Büyükbaş, E., Ormanoğlu, B. (2013). Afetler ve Afet Yönetiminde Meteorolojinin Yeri, Türkiye İdare Dergisi, 476.

Cho D. , Pyung-II Yu "Influential Factors in the Choice of Technology Acquisition Mode: an Empirical Analysis of Small and Medium Size Firms in the Korean Telecommunication Industry" Technovation 20 691-704 (2000)

Competitive effects on technology diffusion; Robertson, TS.; Gatignon, H. Journal of Marketing; Vol. 50 Issue 3, p1-12, 12p. (1986)

Coskun, C., Koçyiğit, N., & Oktay, Z. (2016). Yapay Sinir Ağlari ile PV Modül Yüzey Sicakliğinin tahmini. Mugla Journal of Science and Technology, 2(2), 15–15. https://doi.org/10.22531/muglajsci.283611

Cusumano Michael A. and Elenkov Detelin "Linking International Technology Transfer with Strategy and Management: A Literature Commentary" Massachusetts Institute of Technology Sloan School WP# 3371-92/BPS January 10 (1992) http://dspace.mit.edu/bitstream/handle/1721.1/2384/SWP-3371-25781961.pdf?...

Doğan O., Büyükkağnıcı H., Darılmaz A., E Kara, Çağıltay K. "FeTeMM Eğitiminde Giyilebilir Teknoloji Uygulaması Giyilebilir Meteoroloji İstasyonu-GiyMİ"

Gatignon H. & Robertson T. "Technology Diffusion: An Empirical Test of Competitive Effects " Journal of Marketing Vol. 53 (1989), 35-49

Gupta U. G., Clarke R. E. "Theory and applications of the Delphi technique: A bibliography (1975–1994)" Technological Forecasting and Social Change, Volume 53, Issue 2, October (1996), Pages 185-211

Hemmert M. "The Influence Of Institutional Factors On The Technology Acquisition Performance Of High-Tech Firms: Survey Results From Germany And Japan" Research Policy 33, 1019-1039 (2004)

Hipkin I. "Determining Technology Strategy İn Developing Countries" International Journal of Management Science 32, 245-260 (2004)

KELEBEKLER, E. (2019). "Nesnelerin İnterneti tabanlı meteorolojik Veri Takip sistemi". Düzce Üniversitesi Bilim Ve Teknoloji Dergisi, 7(1), 650–663. https://doi.org/10.29130/dubited.482651

Linstone H. A., Turoff M. "The Delphi Method:Techniques and Applications" 2002

Neuman W. Lawrance "Toplumsal Araştırma Yöntemleri: Nitel ve Nicel Yaklaşımlar" 2. Cilt Yayınodası İstanbul (2010)

Novick D. "What Do We Mean by Research and Development" California Management Review: Vol.2 (1960) p9

Raine S. "Defining the Bobath concept using the Delphi technique" Physiotherapy Research International 11(1) 4–13 (2006)

Rowea G., Wright G. "The Delphi Technique As A Forecasting Tool: Issues And Analysis" International Journal of Forecasting 15 353–375 (1999)

Stitt-Gohdes, W. L. & Crews, T. B. "The Delphi Technique: A Research Strategy For Career And Technical Education" Journal of Career and Technical Education 20 (2), 53-65 (2004)

Şahin A. E. "Eğitim Araştırmalarında Delphi Tekniği ve Kullanımı" Hacettepe Üniversitesi Eğitim Fakültesi Dergisi 20: 215-220 (2001)

Yıldırım A. , Şimşek H. "Sosyal Bilimlerde Nitel Araştırma Yöntemleri" Seçkin Yayıncılık ANKARA 2006

Yıldırım Ali, Şimşek Hasan "Sosyal Bilimlerde Nitel Araştırma Yöntemleri" Seçkin Yayıncılık 6. Basım 2006 Ankara

Zillman, J. W. (2003). Meteorological and hydrological early warning systems. Early Warning Systems for Natural Disaster Reduction, 135–164. https://doi.org/10.1007/978-3-642-55903-7_22

HAZARDOUS WASTE MANAGEMENT AT THE AIRPORTS IN TURKEY

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Abstract

Purpose - *The deregulation, liberalization and privatization trends experienced in the aviation sector in the World after the 1980 have demonstrated their effects in Turkey as well, and the increase in passenger transportation with the deregulation of domestic passenger transportation in 2003 attracted a lot of attention in the World. The reflections of this increase in air transportation have been also seen at the airports, causing changes in terms of airport design and development as well as airport management. Within the framework of these developments, environmental problems, which are one of the most important problems of our age in terms of sustainable management, have also been brought to the fore in effective airport management and have become one of the performance indicators in airport management.*

One of the negative environmental effects of airports is the waste they produce. Proper collection and disposal of wastes produced at airports, and minimizing their negative environmental impacts are one of the important processes for a sustainable environment. Today, one of the types of waste produced at airports where the activities are made like the city living 24 hours is hazardous waste. Hazardous wastes, unlike recyclable wastes, are those that pose a burden to airports due to reasons such as storage, human and environmental effects, disposal fees (excluding quality waste oils) from the moment they arise. When recyclable wastes are not collected, they are taken from airports as mixed municipal garbage, but since hazardous wastes are legally sanctioned wastes, mixing these wastes with municipal waste constitute a crime.

In this study, it is aimed to create a performance indicator in order to compare the amount of collected waste with respect to the most efficient airport in terms of collecting hazardous wastes as much as possible and not mixing with nature, by conducting an efficiency analysis in terms of hazardous wastes within the framework of sustainable management. This study has been brought to the literature in terms of being one of the performance indicators that are very important in modern and efficient airport management at the present time.

Design / Methodology / Approach - *In this study, Data Envelopment Analysis (DEA) was applied for the Hazardous Waste Management Efficiency of Airports, and the Charnes Cooper Rhodes (CCR) model of DEA which has a constant return to scale assumption, was used for this analysis. The reason why DEA was chosen as an analysis method is that by measuring the efficiency values of the institutions or organizations doing the same business with this method, it is possible to find the causes of inefficiency and find solutions to them in order to enable the ineffecient airports to approach efficient ones.*

For this study, the amounts of hazardous waste produced by the airports were taken as data from the General Directorate of State Airports Authority (DHMI). As of the date of the study, hazardous waste

informations of the airports were obtained from 33 airports in Turkey, which has 55 civil airports in total. In the analysis, airports were grouped in terms of passenger numbers and criteria determined by the Federal Aviation Administration (FAA) were used in order to ensure consistency in evaluating the amount of hazardous waste produced by airports and comparing their effieincies between airports. In the study, the data were evaluated as two groups. In the calculations of waste management efficiency, the number of passengers, total cargo and aircraft traffic information of the airports were used as inputs, and the amount of hazardous waste as output.

Findings - *In the study conducted for the efficiency of Hazardous Waste Management at the airports, an optimization model was made with the DEA method. In this model, hazardous wastes was classified according to the information received from the airports and were included in the constraints. With the data envelopment analysis performed in this study, it should be understood that the wastes found in the coefficients that make the airports with high efficiency value higher are higher than other airports. According to the principles of the waste hierarchy, it is necessary to implement processes such as prevention and reduction of these surpluses. At this point, it is necessary to implement prevention and reduction measures for the excess of this class of hazardous wastes at the airports that are more efficient than other airports. With which waste the airports with high efficiency carry out these activities can be determined by the output coefficients.*
Accordingly, İzmir Adnan Menderes Airport code 20 hazardous domestic waste, Kayseri Airport 18 code hazardous waste, Erzurum Airport hazardous packaging waste, Elazig Airport paint-based hazardous waste, Denizli Çardak Airport hazardous oil and oil waste, hazardous packaging waste, 16 code hazardous waste. and hazardous municipal wastes, Kars Harakani Airport produced relatively more hazardous waste in groups A and B compared to other airports.in terms of hazardous oil and liquid fuel wastes.
Of the airports in groups C and D, Balıkesir Kocaseyit Airport produced hazardous municipal waste, Batman Airport code 16 hazardous waste, Amasya Merzifon Airport hazardous code 08,13,16 waste, Sinop Airport 15 and 20 hazardous waste, Uşak and Kastamonu Airports code 16 hazardous waste, Kocaeli Cengiz Topel Airport hazardous packaging waste in terms of waste, they produced relatively more hazardous wastes than other airports. With this study, it will be possible for these airports to improve their environmental performance by determining the airport activity areas where different types of hazardous wastes are produced and by developing prevention and reduction methods in these areas.

Originality / Value - *At the present time, environmental sustainability of airports is one of the most important issues in modern airport management. Although the issue of waste is a little less interesting since emissions and noise problems are among the performance indicators in the effective operation of airports, the disposal of wastes in the airports, which can be in the size of a city, has become one of the important problems in recent years.*
In the environment where waste management is gaining importance at the airports, attention has been focused more on recyclable wastes, and in the researchers conducted, no study on the management of hazardous wastes has been found in the literature.
For this reason, it is considered that measurement of efficiency and comparing of the airports on hazardous waste management will be the guide for the airport operator to be benchmarking indicator with the others and for the State Authorities as an indicator for the performance monitoring of airports in the environmental sustainability.

Keywords: *Airport, Hazardous Waste, Data Envelopment Analysis, Waste Management*

References

ACI EUROPE. (2017, 09 15). ACI EUROPE Official Web Site. Airports Council International Europe: https://www.aci-europe.org/component/downloads/

Alexsander Jose dos Santos ve diğerleri (2020). A fuzzy assessment method to airport waste management:A case study of Congonhas Airport, Brazil. Journal of Air Transport Management. Vol. 87

Baxter, G., Srisaeng, P., Wild, G., 2018b. Sustainable airport waste management: the case of KansaiInternational airport. Recycling 3, 1–22.

Boyle, D. (1989). Comprehensive Solid Waste Planning strategies. Journal of Resource Management and Technology, 193-199.

Cooper, W. W., Seiford, L. M., & Tone, K. (2001). Data Envelopment Analysis: A Comprehensive Text with Models, Applications, References and DEA-Solver Software.

DHMİ. (2017). Devlet Hava Meydanları İşletmesi. Devlet Hava Meydanları İşletmesi Genel Müdürlüğü: http://www.dhmi.gov.tr/istatistik.aspx adresinden alınmıştır

FAA. (2013). Recycling, Reuse and Waste Reduction at Airports: A Synthesis Document. USA: Office of Airports Federal Aviation Administration.

FAA. (2017, Eylül 16). Airport Categories. Federal Aviation Administration Official Web Site: https://www.faa.gov/airports/planning_capacity/passenger_allcargo_stats /categories/

Graham, A. (2008). Managing Airports - An International Perspective. USA: Elsevier Ltd.

Morrissey, A., & Browne, J. (2003, September 17). Waste management models and their application to sustainable waste management. Waste Management Elsevier Ltd., s. 297-308.

Najm, M. A., El-Fadel, M., Ayoub, G., El-Taha, M., & Al-Awar, F. (2002). An optimisation model for regional integrated solid waste management. Waste Management & Research, 37-45.

Peker, İ., & Baki, B. (2009). Veri Zarflama Analizi ile Türkiye Havalimanlarında Bir Etkinlik Ölçümü Uygulaması. Ç.Ü. Sosyal Bilimler Enstitüsü Dergisi, 72-88.

Pitt, M., & Smith, A. (2003a, Ocak). An assesment of waste management efficiency at BAA airports. Construction Management and Economics, s. 421-431.

Pitt, M., & Smith, A. (2003b, September). Waste Management Efficency at UK airports. Journal of Air Transport Management, s. 103-111.

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