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GREEN TICKETING: A BENEFICIAL FRAMEWORK FOR AIR CARRIERS

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ABSTRACT

Purpose- Developing a concept, utilization of it, classification and comparison of it within and between other concepts need an intensive theoretical background in every scientifical branch. The main purposes of this paper are to present why and how a useful scientifical tool will develop via conceptualization and to show this process by developing a "green ticketing" concept. Essentially, it will be investigated some answers to the question of if or not the concept of the green ticketing is really important and necessary for the airline industry climate.
Methodology- With all of its dimensions, causal relationships, and with help of a base theory and some methodologies, whether or not the concept of green ticketing may be suggested as a suitable concept for airline companies and scientists is the subject of this paper. The main contribution of this paper and it is made in this research distinct that utilization of a new concept may not be an easy process, especially in specific and critical fields like aviation because of the limitations on the age (time), place (space) and extension. For these reasons, this research can be accepted as the development of a new concept via specific methodologies articulation and typological methodologies exampled from literature. Also, beneficial concepts such as bricolage and problematic are utilized to reach the purpose.
Findings – The suitability of the ticketing concept to greenization is clearly founded in light of arguments in ticketing and fares management branches of airlines and sustainability and ticketing literature of civil aviation and also developments in practical and social lives relate to civil aviation in this research.
Conclusion- "Green Ticketing" concept will be suitable for researching deeply. Nevertheless, It should not forget that as a new concept, it can suffer from complex ethical problems in terms of economical and financial context like every industry.

Keywords: Green ticketing, greenization, postmodernity, sustainability, concept development.
JEL Codes: B26, O18, R11

1. INTRODUCTION

Ticketing is always a reason for a problematic situation for civil aviation. If it is concentrated on the development of the ticketing concept in the civil aviation context, it will be confronted with broad, systematic, and sometimes rational, sometimes psychological designs, so bricolage is a suitable concept for defining it. Here, bricolage is so suitable metaphor, because ticketing is not only inferred from intensive mathematical concepts and operations, computerized processes such as artificial intelligence or fuzzy logic, and simple or complex economic demand/supply analysis, but also it is a product of heuristic and intuitive reasoning and deciding processes depend hugely on ticketing' own and complex nature includes timing, dating, scheduling, and human errors again and again. And also, it should be an unforgettable detail that the -only- and direct financial resource of air carriers is tickets, for this reason, ticketing.

However, the greenization of a product or a service is a very different process and conceptualization on the other side. And it needs also a conscious trend with all of its roots. Greenization of an end product in terms of industrial language includes a lot of collaborative and cooperative business-making styles and creates a union within different functions of an enterprise.

According to Hegel's (1812) contribution in "Science of Logic", the classification of ambiguity is a centre and descriptive step to understanding and conceptualizing it. In famous natural scientist Darwin's (1859) and Physicist Newton's (1833) works, similarities gain importance in the classification stage. Similarities are important results of a mixing methodology of definition and measuring with numbers or formulas. These processes were utilized by almost all modern thinkers such as Marx (2018) and Durkheim (1897) and scientists such as Bertalanffy (1968). On the other side, modern scientifical disciplines, their motivations, and reasonings always accept classification as a suitable way of theorizing modernity or modern reality. Assumptions of modern scientific theories such as the ceteris paribus principle in economics always paved the way to explain

a modern but ideal manageable world, because it seems so normal and concrete. Especially, a mystic, abstract, dark, and unexplained unnormal began to appear even after two world wars, a cold war period, and some financial crises. Lyotard named this situation a Postmodern Condition (1985), on the other side, Derrida (2016) tried to explain this new reality with the explanation of deconstruction, and according to his works, writing and especially definition was a semi-hidden and semi-open gun of authors with sound and strict impacts on the object and object-related things (objectivity) in this era. For Foucault, re-reading an opus magnum concept by concept was essential to understand a full history of humankind and its managerial functions, and archetypes (archaeology of knowledge) and it is also so important to define unnormal or postmodernity such as madness, sexual differences, and of course potency (2000, 2007). Through these contributions, it can be understood old concepts able to gain new ends with different means. For example, it can be confronted with utilizing a mathematical reasoning mean for sociological end or purposes such as articulation -in reality, a modern system science mean- or bricolage -a modern anthropological mean- can take place in managerial science. For these reasons, it should be unnecessary to bind a discipline in developing the new concept in postmodernity. “Green ticketing” is a suitable concept to develop in this way.

The main research questions of this research are here how and why can be created or developed a wider and more comprehensive "green ticketing" concept? It is not a simple concept but it has got a very big potential in the next ten years considering the attitudes of aircraft producers and suppliers, the consciousness of international, national, and regional regulators, the awareness of passengers, and the total behaviours of an aviation community under high degree competition pressures. Green ticketing can be described here shortly as an articulation of “greenization” and “ticketing” like Foucault’s articulation between “knowledge” and “power”. According to Foucault’s articulation, knowledge has got considerable philosophical impacts on power depending on age (time), place (space), and extension. In this sustainability age, it is an expected result and a hard-definable reality that greenization processes have got great and sophisticated impacts on ticketing in the civil aviation context.

In light of these arguments, theorizing and conceptualization are argued in the methodology section. In the first section of literature in this research, there is a conceptual and scientific analysis of the “ticketing” concept with all reachable dimensions in civil aviation literature. The realization of all managerial functions, processes, systems, products, and services are detailed and argued in the second section of this research. it is paved a way for the construction of a new concept "Green Ticketing" in the third section of this research. Assumptions and constraints on the "Green Ticketing" concept are put forward and conclusions are made.

2. LITERATURE REVIEW

2.1. Problems of a Century for Air Carriers: Ticketing and Airfares

Airfares, tickets, and ticketing are important concepts in terms of air carriers' revenue management, so air carriers. Airfares are the total worth of an air carrier's services and serviceable products or the overall charge of a ticket for a flight. It is unforgettable information that flights are imperfect substitutes, it's the main feature of a flight (van den Bogaard and Lijesen, 2019). Even if it is still questionable whether or not airfare is an economical or financial burden of a passenger or group or reciprocity of air carrier’s services and products, airfares can include a lot of knowledge such as air carrier’s business making style (Brueckner et al.,1992). They are a reflection of air carriers ' inside management effectiveness (Hofer et al., 2005; Hofer et al.2009(b)), and also they are a measure of air carriers' external political affluence. Beside, it is important for policymakers through its crucial importance for the mobility of the public (Wozny, 2022). On the other side, tickets and ticketing is a process between air passengers and air carriers, they are the seeable face of airfares, therefore the premier focus point should be airfares in the analysis of the ticketing concept.

It is asserted in Gorin and Belobaba (2004) that fares are sources of unfair competition with revenues and traffic due to their impacts on air carrier’s performance. The relationships between revenue and seasonality of the aviation industry also corrected by Cohen et al. (2023). Gorin and Belobaba (2008), and Bachwich and Wittman (2017) also stated that airfare structures independently are a reason of new competition types such as low-cost air carriers or ultra-low-cost Carriers, also competition in the crisis time of Covid-19 (Zhang, et al, 2022) and determination of the airline strategies (Kim et al, 2023). The fares and the amount of the fares are competition elements in the Japanese transportation system between high-speed rails, low-cost carriers, and high-cost Carriers (Mizutani and Sakai, 2021). According to the reverse logic of Brueckner et al. (2013), business styles such as low-cost carriers are the main reason for airfare fluctuations in the air carrier industry. For Tsoukalas et al. (2008) airfares definitively show air carriers' cost structure. It is proved in Belobaba and Wilson (1996), Belobaba (2001), Eguchi and Belobaba (2004), Belobaba (2011), d’Huart and Belobaba (2012), Belobaba (2016), Fry and Belobaba (2016) that air carriers breathe in and out with airfares financially and economically. If air carriers want to possess an efficient, effective, and fluid revenue and yield management policy, the same air carriers have to be focused on airfares and the mechanisms that produce yields and revenues. Also, airfares are the most vivid and active variables, their volatilities follow a shift depending on a sudden, unexpected, or expected fluctuation in an international legal and political variable (Graham et al.,1983, Keeler,1972; Cosmas et al.,2010), a catastrophe, a pandemic, a natural disaster, a war, an air carrier alliance and code-sharing activity (Brueckner and Whalen, 2000; Brueckner, 2001; Alderighi, Gaggero and Piga, 2015;

Brueckner and Singer, 2019), oil prices (Kaufman, 2017; Scotti and Volta, 2018; Atems et al., 2019;) or slot restriction policies (Fukui, 2019). Therefore, beyond being an object of strict and sound economical demand and supply analysis, the determination of true and correct airfare is the conceptual equivalent of chaos in terms of air carriers, their environment, and also airports (Cohas et al.,1995; Bockelie and Belobaba, 2017; Guo et al.,2018). Some other variables, which count as more insider variables in civil aviation, have got also had great important impacts on airfares. For example, the airport's place and hub situation dramatically affect airfares (Borenstein, 1989; Tan and Samuel, 2016; Ren, 2020).

Alternative transportation means also have got so great impacts on airfares that their effects feel very strongly the short distance, especially in big countries and continents such as China, Japan, Europe, and the United States due to nature of economic, social and managerial nature of competition (Capozza, 2016; Tsunoda, 2018; Su et al., 2019; Zhang et al., 2019; Ma et al.,2019; Ma et al., 2020; Mizutani and Sakai, 2021)

For Pels and Rietveld (2004) intensive, destructive, sharp airfare fluctuations in airline markets are signs of market saturation. On the other side, airfares are not only a big part of air carriers' revenue and yield management, they are also an expression of passengers' wills; wishes, and expectations (Botimer and Belobaba, 1999) and also their strategies such as utilization of hidden city strategies (Oh and Huh, 2022) . If it is considered that tickets are sold and bought in "bins" or "buckets" where a bucket is defined by a series of ticket characteristics including the class of travel, refundability, advance purchase requirements, and travel and stay restrictions such as minimum and maximum stays and/or Saturday stayover (Sengupta and Wiggins, 2014), the personal preferences or group choices of passengers can change under the assumptions of hedonistic behaviour (Howell and Tatje, 2022) , rational behaviour and pragmatical behaviour due to market segmentation. Passenger characteristics are an important part of the tickets and ticketing process, besides how and what they want in ticketing and tickets are, also an object of main descriptive and classifying types in the tourism industry. Airlines are in strict, sound, and comprehensive relationships with the tourism industry.

Tickets began to be an object to other special issues with a cumulative increase in internet use. Most of the critical timing features such as innovative ticket promotions and booking time continue to be added in new conceptual online ticketing designs due to de-structural and definitive impacts of the internet on the cost structure of different business segments such as low-cost air carriers. The adding of the internet networks into the European aviation understanding, the information transition also gain speeds (2021). According to Huang et al. (2019), internet research engines are so for to serve the optimal Choice. Wen and Chen (2017) examined this situation in China example, and Cho and Min (2018) worked on these issues in the U.S example. Today, the total passenger number is so outnumbered that it is almost impossible to service these passengers by classical air carriers' service types. In addition to this, this complexity is mirrored to also tickets and the ticketing process. For this reason, dynamic pricing, which is born as an innovative tool in the face of classical airfares detection methods, is a new approach, and framework by IATA and it is nothing more than a real-time, passenger and competition-oriented, pricing mechanism (Wittman and Belobaba, 2016; Wittman and Belobaba, 2016(b)).

Therefore, it can be understood that an air carrier that wishes to design a ticket, should be aware of a lot of external and internal variables due to the nature of the civil aviation industry. So, for Baker, Miner, and Eesley (2003) referring to great anthropologist Levi's-Strauss (1966), bricolage is -making- due with means or resources at hand. In the light of the arguments above, designing a ticket is not a simple and basic process, it needs to see designed in process more systematic way and the person or institution, who realizes and encounters with bricolage, calls a bricoleur.

A bricoleur is neither only a manager nor only an engineer. According to Louridas (1999), i) An engineer creates the means for completion of his work, the bricoleur redefines the means that already has; ii) A bricoleur uses semi-defined elements as inventory, they are abstract and concrete, iii) These elements carry a meaning depending on their past uses, iv) Experience, knowledge and skill of bricoleur can modify these elements toward requirements of the project and the bricoleur' intention. Nonetheless, Witell et al. (2017) proposed four critical bricolage capabilities. These are i) Addressing resource scarcity actively; ii) Making do with what is available; iii) Improvising when recombining resources, and iv) reaching the purpose.

Problematic situations are situations that enforce the limits between different sides of a social context constantly and continuously. They have validity almost in every science. To analyze problematic situations, i) their organization style, and ii) definition of their limits are important (Callon, 1980).

There are two important templates above that are bricolage and problematic, and both of them are going to be used to describe airfares in a civil aviation context. The nature of airfares pushes all of its dimensions such as marketing, financial, accounting, or legal and political and industry-specific down to a problematic situation with great power, on the other side a bricolage or approximation of a bricoleur arises as a problem-solving technique that pulls almost all matters of airfares up with complex, unidentified and maybe-innovative ways to balance.

2.2. Greenization

Sustainability is so important part of today's world ecologist movement, particularly after the UN Declaration of Sustainable Goals, sustainability has been subjected to a large amount of literature. Especially, vision, mission, and focus points of

sustainability in management are being developed in a very conscious manner so that almost every sub-scientifical branch developed its methodology with different approaches and subjects. Stegall (2006) examines sustainability philosophy into a template consisting of 4 important items: i) main impetuses and reflexes of humans, societies, and cultures, maybe subcultures toward more liveable environmental and ecology issues, ii) sculpted intentions that shape ecological literacy, iii) developing of new behavioural forms such as new technologies to solve problems arising from ecological literacy, iv) respect to mother nature (cradle to cradle design) in resource allocation. These four important groups pave the way for a suitable sustainable science. According to Thompson (2010, 1997), if it is focused on sustainability science more closely, it is confronted with three important frames, i) ecological sustainability includes the integration of human beings, social life, and production life into ecosystem processes, ii) economic sustainability is a power of recovering costs, iii) social sustainability is intended to call attention to issues of equity, fairness or social justice. For Rupprecht et al. (2020), it is so normal that the duty of sustainability is redefined to comply with the human needs and resources of humanity considering the needs and expectations of future generations in this era. Thompson and Cavaleri (2010) maintain that real-life sustainability matters are so complex that they do not explain classical ways of classical problem-solving methodologies, therefore a sustainability science should have got different research methodologies.

Greenization is a comprehensive development concept based on several factors, such as the ecology, environment, and economy and includes every aspect of production and life. Besides, urbanization is the main thrust of big countries like China, economic and social development, and greenization is the essential pursuit of economic and social development (Liu et al, 2019). According to Callicott (1984), ecology is not a thing more than soils, waters, plants, and animals, therefore a biotic community.

The Greenization of energy politics that the essence of everything is energy has great importance in complex sustainable politics and problems (Dincer and Zamfirescu, 2012). In this context, Dincer (2016) defines greenization in two ways, i) as a process of converting traditional/conventional systems with higher environmental damage, less efficiency, more cost, etc. into more efficient, more cost-effective, and more environmentally friend ones as greenized systems, ii) as a process of developing new energy solutions under 3S (Source, System and Service) criteria which are greener than the traditional/conventional ones.

It is pointed out in Eckersley (1990), that green thought complies with critical theory. In his philosophical articles referring to Habermas, Bruelle (2002) draws two mathematical sets as critical theory and ecological ethics and determines their intersection set as Green Political Thought. From these points of view, to reach expected or hoped results in green thought or green political thought, the creation of public space with help of money and administrative power is an absolute obligation. This public space should include, i) ecological politics, ii) meaningful disagreements and debates about our society, and necessary actions to foster ecological sustainability would be carried out. Whether or not the priority of human needs can be over the needs of other living organisms and ecosystems is another ethical argument, for Bourdeau's (2004) framework, a balanced picture has a priority. Nasibulina (2015), Singh et al. (2019) emphasized the impacts of environmental training on environmental ethics. Hoffman (2003) forms a new business world that includes also a comprehensive expansion of environmental ethics.

3. METHODOLOGY

For Feldman and Orlikowski (2011), there are three important features of theorizing, i) a theory must be a part of daily social life (modernity or postmodernity) ii) In creating a theory, dualism is rejected strictly and soundly, on the other side, dualities are accepted, iii) Another important feature of a theory is that phenomena of a theory are in a mutual–relationships with other phenomena constitutionally. On the other side, this research can be accepted as theorizing of "green ticketing". To realize this, it benefited from Cornelissen's (2017) and it is another derivative of Kelleci and Yıldız's (2021) taxonomies and classifications of Branch and Rocchi's (2015) on concept development. First of all, it is purposed to analyze two recent corpora of ticketing and greenization separately. Here, true and real hardship is not an analytical analysis of these two important concepts, it is hard to construct a logical and causal relationship between them. As is stated by Cornelissen (2017) and Schlüter et al. (2019), this research is typology-based theorizing research an it can be classified also in describing Socio-ecological reality for this reason, inductive research is dominant.

This research is a simpler and leaner example of conceptualizing with theorizing means. At the end of this conceptualizing, firstly it is aimed to create a new, essential and beneficial concept not only for researchers but also for practitioners. Secondly, to create a new concept under the rules of articulation and typological research type, conformity of age(time), place (space), and extension are at a saturated level. For example, as it is thought that economic and natural resources are being restricted under exaggerated and unreasonable use of the community, it is true and certain -period- for science that wishes and desires to develop a true concept, to method with comparisons, classification, synthesizing and analyzing, to obtain and to retain advantageous results.

The aviation industry has been in rapid development since the 1950s. Although the main concerns of aviation management stakeholders are safety and security, last years have been witnesses of seeking solutions to noise problems and especially environmental problems.

If it is looked at the root causes of this change in the aircraft industry, firstly, it should take into account that suppliers of aircraft are also other stakeholders of other industries affected by sustainable and ecological changes, their business making style reforms again and again. Secondly, public awareness, perceptions, attitudes, and then behaviours toward sustainability are on an increasing trend. Ecologic health aimed movements, social movements can seem in the world, for example, Flysgkam (flight shame) movement in European countries, and intensive literature in China. Thirdly, International and national institutions like International Civil Aviation Organization (ICAO), International Air Transport Association (IATA), European Union Aviation Safety Agency (EASA), and Airport Council International (ACI) focused on sustainability and environmental matters with serious and high sanction power, they began to change industry nature. And main civil aircraft manufacturers began to add their development plans to environmental health related-sustainability and ecological issues. Taxonomies and classifications of Kim and Son (2021) give a lot of explanations about sustainability and scientific development in air carriers.

The behaviour of passengers/consumers generally is under changes depending on market conditions. And this tendency also can be observed in markets governed by green, ecological, and sustainable rules voluntarily. According to Cerri, Testa, and Rizzi (2018), there is a negative correlative relationship between environmental concerns of consumers and green purchasing behaviours of consumers, on the other side, there is a positive correlation between previous knowledge or information and green purchasing behaviour of consumers. The cumulative accumulation of information and knowledge is also pointed out by Kumar et al. (2017) with subjective norms. As it is stated in Paço et al. (2019) empirically and Kelleci and Yıldız (2021) theoretically, green and sustainable values are the main and revolutionary determinants of marketing politics of enterprises like air carriers and green purchasing behaviour of societies via psychological and sociological variables. Panda et al. (2020) emphasize the impacts of sustainability awareness on purchasing intention, green brand loyalty, and green brand evangelism and also can bridge the value-action gap for green brands. Michal et al. (2017) also correct the relationships between environmental consciousness and purchasing behaviour. Van Ewijk et al. (2023) describes a framework, in that the contributions of the passengers in airlines activities toward sustainability can be described through taxes.

In this context, the relationships between environmental responsibility of society and person and purchasing behaviours are possible correlation, even so, it seems some research on how these relationships can be increased. For example, Bedard and Tolmie (2018) and Zahid et al. (2018) underline the roles of social media, For Arli et al. (2018) state of readiness, according to Ghazali et al. (2018) religious values also have got important impacts, Sheng et al. (2019) determines the significance of cultural values on these relationships.

Therefore, there is no problem between environmental, ecological, green, and sustainable product and service purchasing behaviours concepts under the conditions of suitable pricing and purchasing behaviour, and also consciousness toward these concepts affects purchasing behaviours positively but cultural changes and their deep and definitive impacts in world context are indispensable. (Zhichang, 2010).

4. FINDINGS AND DISCUSSIONS

It is investigated and sought true answers to the question of whether or not there can be a scientifical reality calls as green ticketing in this research. At first sight, the green ticketing concept is a little bit ambiguous, it's a social reality and it is open to discussion, at the same time, it needs severe classifications and taxonomies, it is only inferred from systematizing of current research because it is impossible to create a model to hypothesize it. For these reasons, it is suitable for Cornelissen's typology-based research design.

Beyond everything, greenization is a deep and comprehensive philosophical and ethical movement with all of its origins and roots. It is an umbrella concept that includes many other things about nature and ecology. It is a more convenient concept to explain greener aviation development. If it is read more in detail, it can seem main philosophical impact of greenization on the aviation industry. In the first step, ecological literacy is necessary, aviation stakeholders completed this step, and this step can be accepted as setting causal relationship if it is looked at a lot of research about detrimental and destructive impacts of aviation liquids such as de-icing and anti-icing fluids (Cao et al. 2018; Rumak et al. 2020; Dinu et al. 2019; Lin et al, 2018; Kozuba and Pil'a, 2019), aviation emissions, airports' and air carriers' negative environmental externalities (Koščák, 2020) even in developing countries. The second and third steps, it is confronted with conceptualization, behavioural norms towards greenization and resource allocation in the greenization process all of which are very complex matters. This analysis serves these steps, and for this reason, it is important. On the other side, it can be concluded that producing new concepts is always a problem and methodological and philosophical research methodologies always gain importance in this production process. This research only serves one specific methodology for researchers.

5. CONCLUSION AND IMPLICATIONS

The first concept is "ticketing" which could be explained with two important concepts. "Bricolage" and "problematic" are two knife-edges, higher degree-explanative, and so chaotic concepts not only because of their mechanical and organic meanings but also their dependence on psychological meanings. Ticketing is problematic due to its time depend- nature, and human depend-nature. However, ticketing problems can only be solved by a bricoleur approach, especially in strategic and ambiguous ticketing stages (including spill and spoil times). Articulation, which is another methodology, vitalizes or

differentiates new concepts. Foucault's articulation of power and knowledge not only implies that the means of power reaches the peak with the means of knowledge but also includes a deep transformation of power with impacts of knowledge depending on time, space, and extension. If it is looked at the green ticketing concept, the same impacts are also expected again, the greenization process should deliberately transform the ticketing concept depending on time, space and extension, and in this work according to the literature, this transformation should create purchasing consent among passengers. Besides, it gives shape to competition and industrial order through its sensitivity, vulnerability, and fragility of external variables such as airport slots, demands, and expectations of passengers and oil prices as was stated in the first section.

At the end of the research, it can also be suggested that there is still an important gap between what is really green and what is not in also aviation management depending on the definition of greenization. There is an ethical paradox on who will really be loaded the burdens of greener products and services, despite the demands and purchasing will; wishes and desires of the public toward greener products and services. This is a red line in the field, also in this research.

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