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Full Research Papers should contain original research not previously published elsewhere. They should normally be between 4,000 and 7,000 words although shorter or lengthier articles could be considered for publication if they are of merit. The first page of the papers should contain the title and the authors' affiliations, contact details and brief vitae (of about 50 words). Regarding the following pages, papers should generally have the following structure: a) title, abstract (of about 150 words) and six keywords, b) introduction, c) literature review, d) theoretical and/or empirical contribution, e) summary and conclusions, f) acknowledgements, g) references and h) appendices. Tables, figures and illustrations should be included within the text (not at the end), bear a title and be numbered consecutively. Regarding the referencing style, standard academic format should be consistently followed. Examples are given below:

- Airbus (2003), *Global Market Forecasts 2003-2022*, Toulouse: Airbus.
- Fragoudaki, A., Keramianakis, M. and Jancovich, S. (2005) The Greek PSO Experience. 4th *International Forum on Air Transport in Remoter Regions*. Stockholm, May 24-26.
- Forsyth P. (2002a), 'Privatization and Regulation of Australian and New Zealand Airports', *Journal of Air Transport Management*, 8, 19-28.
- Papatheodorou, A. (2008) The Impact of Civil Aviation Regimes on Leisure Market. In Graham, A., Papatheodorou, A. and Forsyth, P. (ed) *Aviation and Tourism: Implications for Leisure Travel*, Aldershot: Ashgate, 49-57.
- Skycontrol (2007) *easyJet welcomes European Commission's decision to limit PSO abuse in Italy*. 23rd April. Available from: <http://www.skycontrol.net/airlines/easyjet-welcomes-european-commissions-decision-to-limit-pso-abuse-in-italy/> (accessed on 22/08/2008).

Industry Perspectives are usually shorter than full research papers and should provide a practitioner's point of view on contemporary developments in the air transport industry. Contributors should explicitly specify whether their views are espoused by their organization or not.

Conference Reports should be between 1,000 and 1,500 words. They should provide factual information (e.g. conference venue, details of the conference organizers), present the various programme sessions and summarize the key research findings.

Book Reviews should be between 1,000 and 1,500 words. They should provide factual information (e.g. book publisher, number of pages and ISBN, price on the publisher's website) and critically discuss the contents of a book mainly in terms of its strengths and weaknesses.

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Gráinne Murphy and Marina Efthymiou

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Vaman Bajnath

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EDITORIAL

This issue of the *Journal of Air Transport Studies* comprises seven papers, i.e. six full research papers and a paper on industry perspectives.

The first paper by **Gráinne Murphy** and **Marina Efthymiou** explores safety culture and safety challenges amongst operators in the multi-stakeholder context of an airport, using Dublin Airport as a case study. Employing both quantitative and qualitative methods with airport stakeholders, the authors provide useful analyses on the effectiveness of safety management systems and identify areas of improvement.

In the second paper, **Hossam Samy Ahmed** also uses a case study approach to examine the airport experience of passengers at Cairo International. Data were collected using a self-administered survey. Study findings identify areas of strength and areas of weakness that require intervention and skill-building. Based on these, the author offers a number of implications to bring about a better airport passenger experience in the future.

Maria Salamoura, **Ioannis Chaniotakis** and **Constantine Lympelopoulous** investigate the effect of service quality on customer satisfaction in the context of the airline industry. For the purpose of this case, a questionnaire survey was undertaken with a sample of passengers of local Greek flights in Athens International Airport and Chios Airport, Greece. Data analysis, based on Structural Equation Modelling, confirms the importance of flight attendants and ground-service personnel, i.e. the "Human Factor", in producing overall satisfaction in the airline service context.

Again within the context of airline services, the fourth paper by **Kallol Das**, **Karman Khanna** and **Surankita Ganguly** explores the issue of understanding airline brand equity drivers, with a particular focus in India. The authors use a multi-method and multi-case study approach to arrive in the development of a conceptual model of brand-building in the airline industry that challenges current thinking of airline branding.

In the fifth paper, **Ioulia Poulaki**, **Andreas Papatheodorou**, **Eleni Kitrinou** and **Alexandros Panagiotopoulos** focus on the role of intermodality as a means to improve the accessibility of Aegean Sea Islands, Greece. The authors use Discrete Choice Analysis to establish the airport preferences of inhabitants of the island of Chios. Results suggest that by adopting an intermodal transport strategy, an airport may improve its accessibility and attract passengers from other airports of the wider region, even from the other side of its borders.

In the sixth paper of this issue, **Yvonne Ziegler**, **Jörg Troester** and **Abdul Mu'ti Sazali**, provide a critical analysis of the impact of the "New Distribution Capability" (NDC) standard on the future of airline distribution. Through the use of an online survey with a sample of airline distribution experts, the study confirms that NDC constitutes an important development in the airline industry. Despite its nascent stage of development, having been introduced in 2012 by IATA, it clearly has the potential to address current market issues and tomorrow's challenges.

The final paper by **Vaman Bajnath** provides a perspective on the current state of affairs in the Caribbean Community (Caricom) aviation industry, which currently faces a situation of turmoil and instability. Using regional airline cases and secondary data, the author paints a picture of the factors that have built up to, triggered and maintain the current state of affairs and offers recommendations to improve the situation.

We wish to take the opportunity of this editorial to sincerely thank our authors and reviewers who, through their scholarly work, made possible the publication of the present issue of the Journal. With its open-access character, the Journal aims at the widest possible exposure of its content to the academic and business audience. This is facilitated by our continuing partnership with the University of the Aegean, Greece. We hope you enjoy reading this issue!

Professor Dr Andreas Papatheodorou, Editor-in-Chief
Dr Dimitrios P. Stergiou, Assistant Editor
Dr Marina Efthymiou, Assistant Editor

AVIATION SAFETY REGULATION IN THE MULTI-STAKEHOLDER

ENVIRONMENT OF AN AIRPORT

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ABSTRACT

Safety is at the heart of the aviation system, accident rates are on a steady downward trend with 2.1 accidents per million departures in 2016, representing the lowest annual aviation accident rate. It is predicted that globally the airline industry will grow, expecting 7.2 billion passengers to travel in 2035 (IATA, 2016). The airport domain is a complex socio technical environment where an airline receives a range of services and is the focal point for the convergence of ground activities, part of its role is creating the 'safety picture' and a 'safety space' for its industry customers to provide these services to aircraft operators. All operators (excluding ground-handling service providers) at European Union (EU) airports are regulated by European Aviation Safety Agency (EASA) regulations and now all have Safety Management Systems in place. Using Dublin Airport as a case study, the paper explores safety culture and safety challenges amongst operators in the multi stakeholder context of Dublin airport's airside operations. In particular, the paper argues that (i) the attitudes of airport stakeholders on the effectiveness of Safety Management Systems were positive with good indicators of an engaged safety culture, (ii) operators strive for safe airport operations as well as achieving compliance operations and (iii) attitudes towards multi stakeholder safety management depend on the primary relationship held by each party. Finally, the paper recommends strategies to be adopted to enhance and improve multi stakeholder safety culture at Dublin Airport.

Keywords: Safety Management System, Safety Culture, Compliance, Regulation, Multi Stakeholder environments

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1. INTRODUCTION

In the past five years accident rates have been on a steady downward trend with 2.1 accidents per million departures in 2016, representing the lowest annual aviation accident rate ever (ICAO, 2017). This has been achieved by the global, regional and national safety regulatory structures that govern the industry. Whilst the achievement of such low accident rates is desirable, it is universally recognised that the low accident rate in commercial aviation is deemed too low to be used as a measure of safety performance (O'Connor et al., 2011). This has led to new measures of safety performance through oversight and regulation of the management of safety. Aviation organisations including approved training organisations, aircraft operators, approved maintenance organisations, aircraft designers and manufacturers, air traffic services providers and aerodrome operators (ICAO, 2013) are now mandated to have Safety Management Systems (SMS) in place to manage safety in their organisations.

The airport domain is a complex socio technical environment where an airline receives a range of services, using both digital and physical infrastructures from several providers enabling aircraft to land and take off. In between these rotation activities, it must: unload and upload passengers; freight; mail; be cleaned; load catering and toilet services; be fuelled, receive line maintenance; and conduct a pre-departure check before push-out and taxi to the runway for departure. The providers of these services are all High Reliability Organisations (HROs) who work with multiple variables running concurrently to get the aircraft away with an on-time departure, in a safe and controlled manner. The airport is the focal point for the convergence of these activities; part of its role is creating the 'safety picture' and a 'safety space' for its industry customers to provide these services to aircraft operators.

The aim of this paper is to explore safety culture and safety challenges amongst operators in the multi stakeholder context of an airport operation. Using a case study approach, the attitudes of airport stakeholders on the effectiveness of safety management systems, their effectiveness and areas of improvement are examined.

The paper is divided into 5 sections. The first section introduces the topic and states the aim and objectives of the paper. The second section clarifies the terms used, explains Safety Management Systems and elaborates on the airport multi-stakeholder environment. The methodology used is discussed in section three. Section four summarizes and discusses the results of this research. The conclusions are reported in section five.

2. LITERATURE REVIEW

The nineteen annexes of International Civil Aviation Organisation (ICAO), that regulate aviation at an international level, are transposed into national legislation with each contracting nation state which makes them law (Pepin, 1952). The European Union formalised its rulemaking, certification and standardisation of aviation activities through the creation of the European Aviation Safety Agency (EASA). Whilst ICAO still provides the global overview for aviation safety, EASA's EU regulations provide the European legal framework for aviation activities. Regulation and regulatory oversight in each member state is the responsibility of the National Aviation Authority (NAA).

The safety literature refers to the three "safety ages": the technical age, the human factors age, and the organisational or systems age (Hollnagel, 2014; Borys et al., 2009; Hale and Hovden, 1998). The technical age refers to improvements in aircraft design, avionics and engines. The transition to the human factors age came with the introduction of cockpit voice recorders and flight data recorders as accident investigators gained a deeper level of understanding of what caused plane accidents (Oster et al., 2013). Reason (1990) studied the role of human reliability. He moved the safety conversation beyond the failing of the human as the cause of an accident to establish what were the contributing factors to the point of failure. According to Reason, incidents happen at two levels; the point of the active failure at the point of the incident and the hidden side of the incident; the latent failures. Reason (1997) stresses that causal factors are embedded in the organisational structure. The means of moving from post-accident investigation to a more progressive level of organisational safety knowledge is largely determined through the management of safety at a system level. According to Hale (2001) safety is central to aviation operations and is intrinsic to all the activities both technical and managerial. Aviation organisations can be categorised as High Reliability Organisations (HROs), as such they are required to shift away from compartmentalised approaches to safety management to a system based approach to managing safety risks and therefore safety (Hale, 2001; Reason, 1997). The implementation of a Safety Management System (SMS) enables the organisation to move the focus of safety management towards leading, predictive indicators and away from lagging, retrospective measures such as lost time or number of incidents (Flin et al., 2000).

2.1 Safety Management System (SMS)

SMS moves the safety responsibility to the level of the organisation and in particular to the management within the organisation (ICAO, 2013). There are four pillars in an aviation organisation SMS; (i) Safety Policy and Objectives: The methods and processes that the organization will use to achieve desired safety outcomes; (ii) Safety Risk Management: hazard identification, risk assessment process and risk mitigation strategies design; (iii) Safety Assurance: self-auditing, external auditing, and safety oversight; and (iv) Safety Promotion: promotion of safety in the organisation through information sharing, communication and training. SMS components are discussed in the ICAO Doc 9859 and Airport Cooperative Research Program (ACRP) report Safety Management Systems for Airports.

Implementing an SMS in an organisation is essentially a change in the organisational culture. Organisational culture governs organisational behaviour and is commonly described as 'the way we do things around here'. A healthy safety culture in an organisation seeks improvements, vigilantly remains aware of hazards and utilises systems for continuous monitoring, analysis and investigation (ICAO, 2013: 2-10). Reason (2016) argues that safety culture is formed by four critical subcomponents:

1. Reporting culture: The workforce is willing to participate in the SMS and report not only safety incidents but also errors and near misses.
2. Just culture: There exists an atmosphere of trust where positive safety behaviour is praised, but there is a clear line on what is permitted and not permitted (unsafe acts).
3. Flexible culture: HROs need to be agile to reconfigure in the face of crisis management.
4. Learning culture: The organisation is willing to learn how to draw the right conclusions from the safety data presented.

Moreover, according to Henriqson et al. (2014), training and education are essential for the successful SMS implementation. Companies that adopted SMS experienced a substantially lower number of accidents per year compared to non-adopters (Bottani et al., 2009). Finally, the communication element prevalent in SMS through safety promotion, training, lessons learnt and direct interaction with managers on safety issues has a positive effect on future safety outcomes (Chen and Chen, 2014; Remawi et al., 2011)..

Whilst SMS is an effective mean of improving safety, bureaucratisation of safety can have the opposite effect. EASA's broad regulation aims to give NAA a level of flexibility to interoperate the regulation and offer an acceptable means of compliance that is commensurate to the size and complexity of their operations (EASA, 2014). The United States regulators, regulating at national and regional level with detailed and onerous rule-based oversight, face the risk of "trapping safety into rules" (Hale et al., 2015).

2.2 The Airport System

Airports are the centre of aviation activity, providing the modal transfer link for passengers and freight between ground and air transport. The airport is a complex, intractable, multi-stakeholder, collaborative service environment with no one party delivering the end-to-end product to either the passenger or the aircraft operator. Ashford et al. (2013) further illustrate the airport environment, that airports also supports many other services such as:

- Handling of Passengers and Freight
- Servicing, maintaining and engineering of aircraft
- Airline operations from crew facilities, ground operations facilities etc.
- Concessionaires, food and beverage, retail, car parks
- Aviation support facilities Air Navigation Service Provider (ANSP) Meteorology etc. (EU139/2014)

The safe and efficient delivery of operations is a complex and choreographed daily activity with interplay between the various stakeholders (Ashford et al., 2013). That takes place at tactical, operational and strategic levels (Schaar and Sherry, 2010). Airports are considered High Reliability Organisations (HROs). The distinguishing characteristics of HROs are outlined by Weick and Sutcliff (2007) as the following principles: a) preoccupation with failure, b) reluctance to simplify, c) sensitivity to operations, d) commitment to resilience and e) deference to expertise. The differentiation between airport systems (not an airport operator) and other HROs is that the nature of airport operations is complex; with multiple stakeholders, requiring both coordination and cooperation at operational and technical levels, this complexity adds a level of vulnerability into the airport system (Wilke et al., 2014). The main stakeholders in the area of airport and safety are the ANSP, flight crews, ground handlers, and the national safety regulator.

Airport stakeholders may have performance objectives for the airport operator to fulfil that are outside of the full control and management of the airport operator (Schaar and Sherry, 2010). The availability of airport infrastructural capacity is critical to airport growth. In the realm of aviation safety, the airport operator has a level of responsibility under the regulation for safety on the site, when the actors may well not be part of the airport organisation.

Wilke et al. (2014) noted the vulnerability inherent in the airport multi stakeholder environment given the complexity of operations with multiple interdependencies while the prevailing safety management approach is not integrated. Each regulated entity manages safety risk via their own SMS based on their operation and predicating safety outcomes for their operation. The various organisations will have their own risk SMS. Wilke et al. (2014) argued that amongst the five main players in the airport, (i.e. the airport authority, ANSP, airline operator, ground handler and the regulator), there is little collaboration in the area of safety. This was also acknowledged by EASA (2014) through the formation of multi stakeholder committees (Apron Safety Committee, Local Runway Safety Committee, Wildlife Committee, Emergency Management Committee).

One important stakeholder is the Ground Handling Service Providers (GHSPs). Most accidents in the aviation environment and damages to aircraft are attributed to ground handling. During 2016 the Irish Air Operator's Certificates (AOCs) holders submitted 7,530 Mandatory Occurrence Reports (MORs) and the Aerodrome managers submitted 308 MORs (IAA, 2017). Ground handling is in the three most commonly assigned occurrences categories. GHSPs are currently not covered by aviation safety regulation and are regulated by the community NAA's via the oversight of AOCs holders. According to ACI (2016), ICAO have created a Ground Handling Task Force (GHTF) to develop an ICAO manual on Ground Handling and include guidance material for aerodromes on how they could regulate, licence and provide safety oversight to GHSPs. The literature is largely void as to why this area has not been regulated (Schmidberger et al., 2009).

Dublin Airport for example has an active safety management system. The aerodrome operator first introduced an SMS in the late 2000's in line with the ICAO Safety Management Manual Doc 9859. The SMS operated as an integrated yet separate function which is contrary to the spirit of the regulation. Both the document and the organisational structures were amended in 2014 to reflect the organisational requirements of being an entity regulated via the SMS.

In parallel to this process the EU Regulation 139/2015 was pending ratification to bring Aerodromes under the remit of EASA.

EASA documentation is more descriptive than that of ICAO. The formal committee structures for internal stakeholder consultation referenced in ICAO Doc 9859 outlined the necessary committee levels for the regulated entity. EASA goes further and proposes the structures for the external environment. The two external multi stakeholders committees reflected in the Dublin Airport SMS are the Local Runway Strategy Team and the Apron Safety Committee (Dublin Airport, 2017; EASA, 2014).

Irish registered aircraft were involved in 17 accidents between 2010 and 2013, 22 accidents between 2012 and 2016 (IAA, 2013; IAA, 2017). In all years the most common cause of accidents was ground handling. Ground handling accidents cover any occurrence that happens while servicing, boarding, loading or manoeuvring the aeroplane or occurrences that can cause serious or fatal injuries to people from propeller/fan blade strikes or jet blast. During the period 2013-2015, incidents in Region of Aircraft Movement and Parking (RAMP) were the leading category of all aviation incidents in Ireland (IAA, 2017).

3. METHODOLOGY

The methodological approach for this study is the case study method. According to Yin (2009: 18) "A case study is an empirical inquiry that: Investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident". Dublin Airport was used for the purposes of this study. A mixed method approach utilising both quantitative and qualitative methods of data gathering was used. The online survey was circulated to 292 experts from April 2017 until June 2017; 135 experts responded representing a 46.2% response rate. Interviews with senior managers from the airport stakeholders were also conducted.

A pilot survey was conducted and the initial questionnaire was tested using 15 experts. The questionnaire was shortened and simplified. The final survey questionnaire comprised of twenty-four questions that were arranged over six sections and covered three core themes. The first grouping of questions in the "General details" section gave the candidates the opportunity to opt into the survey or opt out and deal with issues of consent. The following five questions were a mix of nominal and ordinal questions covering demographics information. This was followed by three thematic sections; 1) a section entitled "Safety and

culture in your organisation”, 2) a section entitled “Regulation and compliance”, and 3) a section entitled “Effectiveness”. The final section allowed participants to add comments in an open text format. The majority of the questions in the thematic section of the questionnaire were presented with variables measured with a Likert five-point scale. The survey’s target group was organisations and individuals that operate primarily in the airside environment at Dublin Airport. Table 1 lists the forums and groups that were used to distribute the questionnaire.

Table 1: Stakeholder groups and forums

Multi Stakeholder Group	Chaired By	Area of Focus	Attendees
Airport Operators Committee	Airline/GHA	Efficiency/performance /continuous improvement of airport infrastructure (tends to be more focused on terminal issues; Gate issues bring the focus to apron activities as the two processes are interlinked.	Airlines, GHSPs.
Dublin Airport Operators User Group	Airport/ANSP	Efficiency/performance /continuous improvement of airside infrastructure – (Runway/Taxiway/Stand Infrastructure) Review of infrastructure works.	ANSP, Base Captains, Airport Senior Ops, Met Eireann, Aerodrome Regulator
Airside Safety Committee	Airport Ops/Airport Safety	Safety on Apron areas and operational issues and challenges. Review of infrastructure works and operational /safety impacts. Efficiency/performance /continuous improvement are considered with a safety focus.	Airlines, GHSPs, Frontline operation managers, supervisors and trainers
Local Runway Safety Team	Airport Operations	Safety of operations on Runway Taxiway Systems. Review of current infrastructural works and operational /safety impacts. Strategic look at infrastructure improvements/ future projects	ANSP Mgt, Base Captains, Airport Senior Ops and Safety Mgt, Airport Corp Compliance, Aerodrome Regulator, Flight Ops Regulator.

Furthermore, a series of interviews with members from the identified stakeholder groups were conducted. Table 2 lists the interviews in terms of the stakeholder type, interview methods and organisational seniority of the interviewees. Prior to commencing the interview, the interviewee was briefed on the purpose of the interview and was reassured of the confidentiality of their identity and that of their organisation (where possible, as there is only one airport operator, one regulator, and one ANSP). The interviews were semi-structured in style and were centred on the key themes for the purpose of the research, i.e. on safety culture, compliance and effectiveness. This method allowed for the questions posed to be generally framed, and also catered for flexibility in the order of questions asked, and the ability to focus on any areas of particular interest.

Table 2: Interview distribution

Stakeholder type	Organisational Seniority	Interview method
Airport Operator	Senior Manager - Operations	Face to Face
Airport Operator	Senior Manager - Safety	Face to Face
Airport Operator	Senior Manager - Compliance	Telephone
Airline Operator	Senior Manager – Operations	Face to Face
Airline Operator	Senior Manager – Operations	Face to Face (at Airline HQ)
GHSP	Senior Manager - Operations	Irish Airline Operator
Competent Authority (CA)	Standards Regulation Division	Face to Face
Competent Authority (CA)	Standards Regulation Division	No response
ANSP	Senior Manager	Face to face

4. RESULTS AND DISCUSSION

4.1 Demographics

The online survey for this study was circulated to 292 experts; 135 experts responded representing a 46.2% response rate. Of the 135 experts 91.1% answered the entire questionnaire. Table 3 summarises the range of the participants according to the response rates. Many respondents hold a primary role with multiple functions, e.g. "Flight Crew and Trainer" or "Oversight/Compliance & Trainer". The most prevalent areas represented were amongst senior managers, frontline managers and trainers.

Table 3: Distribution of invitations, % of Responses and % of Total responses by organisation type

Organisation Type	Dist. of invitations	Dist % of total	No of Responses	Resp % by Org Type	Resp.% of total
Airline Operator	130	44%	53	41%	42%
Ground Handler	75	25%	18	24%	14%
Aircraft Maintenance Organisation	10	3%	4	40%	3%
Air Navigation Service Provider	13	4%	13	100%	11%
Aerodrome Operator	54	18%	31	57%	25%
Competent Authority	14	5%	6	43%	5%

In relation to the question "My organisation's aviation safety procedures are audited by: (please tick as appropriate)", the 123 respondents from the airline operators, GHSPs, ANSP and aerodrome operators noted that they used benchmarking / industry bodies as an internal tool to gauge compliance (Table 4). Several airline operators and GHSPs experts added IOSA audits, an auditing standard provided for by International Air Transportation Association (IATA).

Table 4: Entities auditing the organisation's aviation safety procedures

	Airline Operator	GHSP	Aircraft Maintenance Organization	ANSP	Aerodrome Operator	Competent Authority
My organisation's internal compliance function	79%	82%	50%	69%	83%	50%
My organisation's quality function	57%	65%	100%	38%	20%	0%
IAA	85%	71%	50%	85%	97%	17%
Customer Airlines	28%	76%	75%	0%	7%	0%
Aerodrome Operator	8%	53%	0%	0%	13%	17%
EASA/ICAO	57%	29%	0%	77%	47%	33%
Industry benchmarking (ACI, IATA, etc.)	53%	24%	0%	8%	17%	0%

While all respondents noted correctly that they are audited by the IAA as the competent authority; 57% of airline operators; 77% of ANSP; 29% of GHSP and 47% of aerodrome

operator experts, mistakenly believed that they were audited by EASA/ICAO. All regulated entities are regulated by the NAA only that is regulated by EASA. Given that the ANSP at Dublin Airport is also part of the IAA group there is the perception that the question refers to the entire IAA organisation rather than the ANSP functional division.

The Competent Authority (CA) is the only one that is audited by either EASA or ICAO in their representation as the oversight authority of the "State". In answer to the why all other parties marked the EASA/ICAO option as applicable to them could be down to a misunderstanding between compliance with the published regulations/standards, and the oversight function. The responses illustrate a perceived oversight by these bodies.

Airline Operators, GHSP, Aircraft Maintenance Organisations and Aerodrome Operators all have some exposure to customer airline audits. The respondents are based in Dublin Airport and one of the main base carriers Aer Lingus also holds a 3rd Party Ground Handling license which would account for the positive responses (15 out of 53 respondents from the category of Airline Operators). Moreover, all respondents noted that the CA provides regulatory oversight of their operation. This includes the GHSPs, who are not currently directly regulated by the IAA, but may be audited via the IAA oversight activities of Irish AOC holders. Finally, all respondents' organisations 'have an internal compliance and or quality function that has a level of internal oversight on operational safety standards and compliance responsibilities. The survey was divided broadly into three themes; safety culture, compliance and effectiveness.

4.2 Safety Culture

The questions regarding safety culture covered the topics of leadership, training, the ability and ease to report incidents as well as the general communications and effectiveness of feedback relating to safety information. There were nine questions in this section, seven of which were measured on Likert scales and two multiple choice questions.

The link between organisational change and culture are well documented (Schein, 2010); successful implementation of SMS requires a shift in culture to move safety ownership out of the safety office and into the day to day deliverables of the line management teams and ultimately to the individual (Reason, 2016). Leadership is a critical part to the success of the roll-out and ongoing improvement of a safety management system (ICAO, 2013). According to ICAO (2013), a safety manager should be: a safety advocate; a leader; a communicator; a

developer and a relationship builder; an ambassador and an analyst. All 121 participants who responded to the question strongly supported that strong leadership skills are instrumental in promoting a positive culture.

Training is part of the fourth pillar of SMS theory, i.e. Safety Promotion. 121 respondents strongly agreed with the statement that staff training is an integral part in fostering a better safety culture (mean=4.9). Two GHSPs experts stated that there are duplications in the training area from Dublin Airport, their company and airlines.

According to interviewees, the bureaucratisation of safety is seen to have a negative impact on safety. The interviewed GHSP manager said that his organisation has nineteen customer airlines that require their bespoke training and Standard Operating Procedures (SOPs) to be delivered to each employee involved with their operation. Furthermore, the regulation for the Aerodrome Operator also has a safety training requirement to be met, which overlaps with other training material. The GHSP also has its own SMS and training material to deliver to its employees. This training provides solid evidence that professional training was delivered and subsequently recorded. In the examination of incident occurrences of Dublin Airport (ground incidents), which ranged from near misses to serious accidents. The 3rd party handlers are the most frequently cited group in occurrence reports.

In an effort to mitigate the risk of aircraft damage during ground handling activities by third party GHSPs, the airlines interviewed mentioned that they have various strategies to reduce the level of risk to their operations and fleet. The interviewed airline operators also reflected specifically on the challenges faced when working with 3rd party GHSPs who have multiple airline customers. Airline A commented that where possible they negotiate a "one to one" relationship with the GHSP which delivers a de facto 'self-handling service'. Where this is not possible (i.e. where the 3rd party GHSP are serving many carriers), they push for dedicated teams. The main benefits are increased accountability and cooperation amongst the team, reduced training costs, higher levels of compliance and decreased error rates together with reduced incidents of damage to aircraft.

Airline Operator A noted that the level of incidents and aircraft damage were considerably less than at those airports where the airline is being served by a GHSP who handled several carriers. Airline Operator B said that this level of leverage in their ground handling contracts is not available to them as they do not have the volume or frequency of operations to enjoy either a self-handling ground operation or one to one ground handling relationship with the

GHSP. Airline Operator B found that the process for safety communications was challenging, the airlines' specific safety procedures and culture is difficult to communicate effectively when the GHSP is handling multiple airlines, often with the same aircraft type.

Airline Operator B described that there is a level of dependency on the relationship with the GHSP to communicate the airline message to the teams dealing with their aircraft. Though aviation and handling safety messages are often universal, there are airline specific operational safety messages. For the airline that is operating into an airport with a low frequency of flights and to a GHSP that is servicing multiple airlines, the delivery of a turnaround service to exact company standards can be difficult to achieve while turnaround and dispatch (load) error rates can be higher according to Airline Operator B interviewee. This presents a challenge to both the airline and the GHSP.

Reporting is part of the 'Safety Assurance' pillar of SMS and it is a mandatory requirement for all regulated entities to have an official reporting channel as well as a voluntary one. Reporting is not only about reporting on incidents and accidents that have happened, but there is also a focus on the freedom of staff to raise all safety concerns without fear. The IAA has a voluntary reporting service on their website for any member of the public or the industry to report any safety concern.

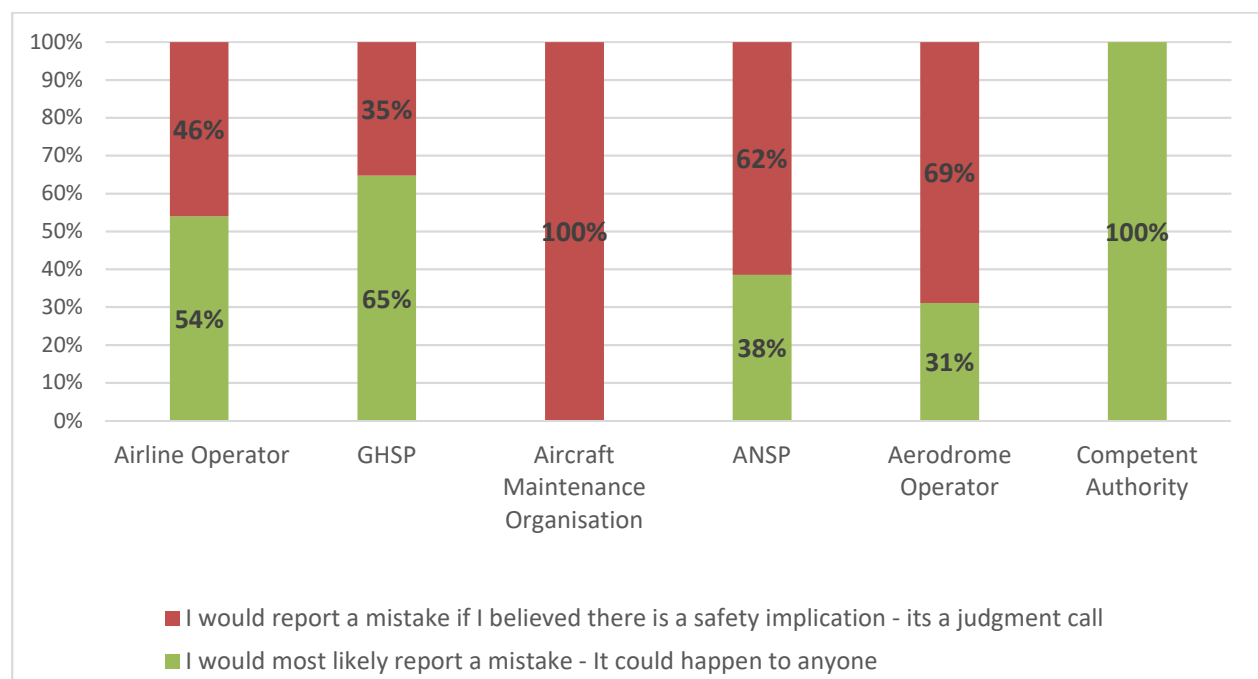
121 participants responded to the statement 'it is easy for me to report a safety concern in my organisation'. The responses were 97% positive to the statement, with 59% marking "strongly agree" and 38% marked "agree"; 1.5% of respondents (one respondent from an airline operator and one respondent from a CA) had "no opinion". Finally, 1.5% of respondents disagreed with the statement and both were airline operators.

119 participants claimed that they would most likely or definitely report a mistake as outlined in Figure 1. An airline operator stated that the industry is becoming very competitive with time constraints, and raising or admitting safety incidents or occurrences on a voluntary basis is a difficult and sometimes risky endeavour. The interviewee from Airline A noted that the airline has worked incessantly to create a healthy reporting culture in the organisation, thus they receive "four times the amount of incident reports" as other airlines. This is supported by a dedicated safety team who are charged with the categorisation and analysis of the data to identify trends. The amount of data is critical to moving the safety message into the proactive rather than reactive space. Moreover, the volume of data is generated from incidents, accidents and near misses that enable smart use of the data, which is fed into the

company communications system which is across the network. The presence of a just culture environment is essential to having a healthy and vibrant reporting culture. The two are interdependent. If an operator feels that their position or status will be in jeopardy by raising a safety issue or reporting an incident the safety management system is weak and will be unable to fulfil its true purpose of continuous improvement.

The participants were asked if they are regularly informed about lessons learnt from incidents or near misses. The aerodrome operation respondents, CA and aircraft maintenance organisation all scored below the mean score (=4.1). Furthermore, all 121 respondents agreed that communication is an essential mechanism in fostering a better safety culture (mean= 4.9).

Figure 1: Reporting of a mistake

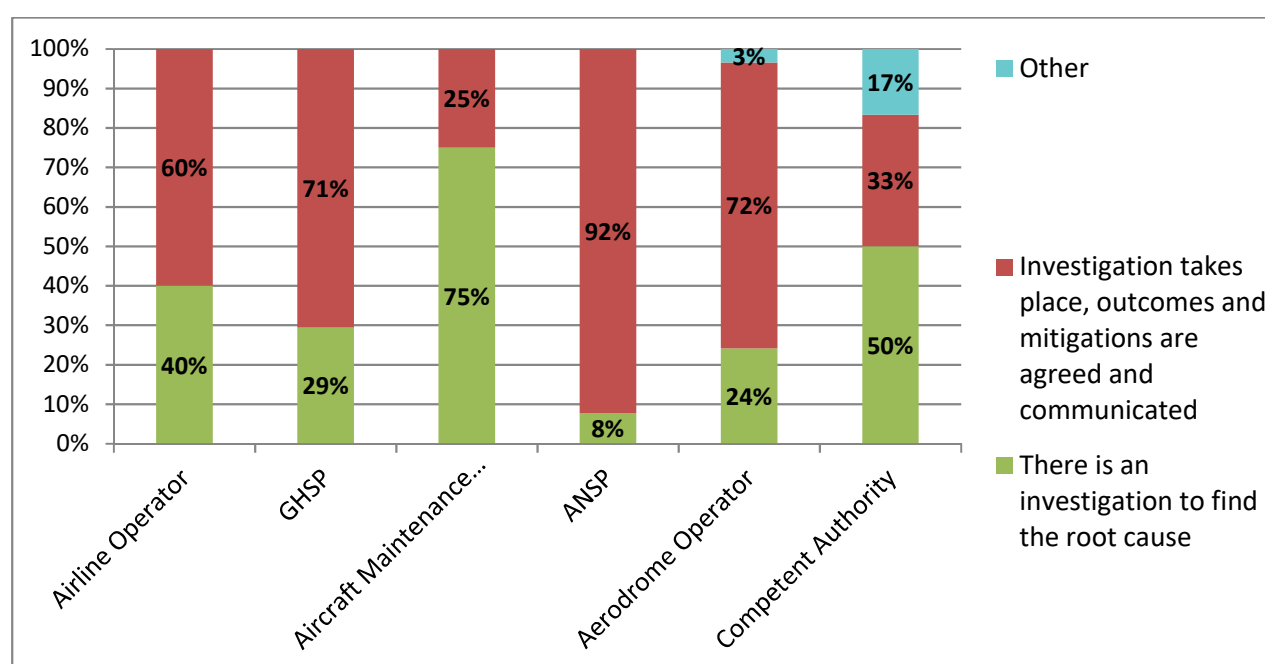


The airline interviewees highlighted the existence of internal ongoing programmes that aim to communicate lessons learnt and other safety messages on a regular basis. The interviewees also suggested that having a single aircraft fleet type makes the safety message in their communications with GHSP (both self-handling and 3rd party handlers) clearer and simpler. Airline A operates a safety awards scheme, where they reward frontline operators for reporting safety issues and for making suggestions to further safety improvements. The reward can be for example a presentation plaque or promulgation via newsletter. The promotion of such activities is fed into the communication stream across the network, awards

are for everyone who interfaces with their operations including third party GHSP and other contracted agencies. The airline interviewees said that promotional activities for safety reporting are important.

Organisations ask of their teams to engage openly and confidently with the safety process. The reciprocal side to this relationship is that the organisation responds in a prompt manner to safety issues raised by the workforce. The participants were asked about the actions following the identification of a safety issue (see Figure 2). Their scores were closely aligned, with little variance in opinion between the organisation types and the answers given. This includes the GHSPs who currently are not within the same regulatory framework as the other aviation parties.

Figure 2: Actions after the identification of a safety issue



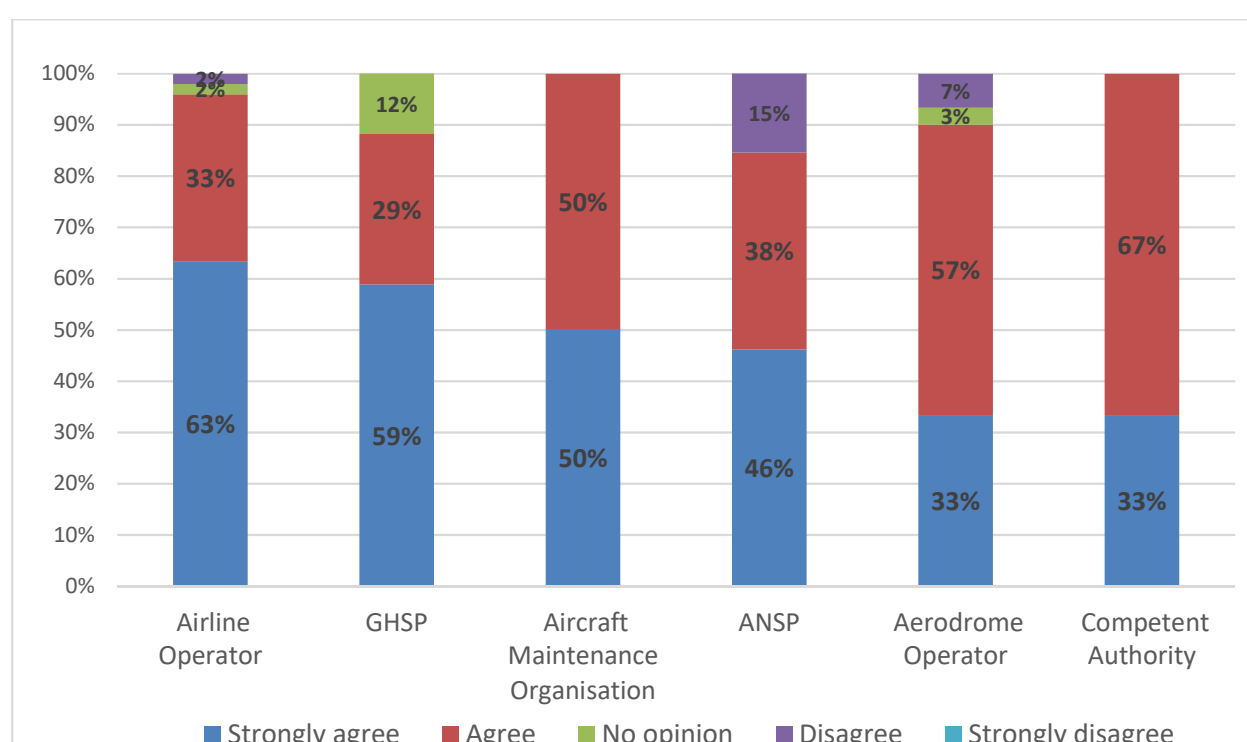
The aerodrome operator mentioned that there is not always an investigation. The respondent from the CA said that during his/her service there was never an internal safety issue that required to be reported or handled.

The concept of “just culture” is a concept that is in EU regulation. It refers to the ability of the operator to be able to report on an issue, or a mistake they have made, an accident they may have caused without fear of punitive action. This ethos behind the concept is to encourage people to acknowledge their errors and mistakes to prevent an accident happening

and/or to highlight a near miss that may have caused an accident on another day. This is aligned to “human factors” thinking.

The 119 respondents (see Figure 3) were very positive to the statement ‘safety incidents can be reported in a non-punitive atmosphere’. 92% answered “strongly agree” or “agree” and the remaining 8% split between “no opinion” and “disagree”. 15% of the ANSP disagreed with the statement. It is notable that overall 4% of respondents disagreed with the statement. This was spread across airline operators, aerodrome operator and slightly a higher proportion from the ANSP. Nevertheless, the mean score was 4.3.

Figure 3: Safety incidents can be reported in a non-punitive atmosphere



All interviewees supported just culture and stated that it was practiced in their organisations. The element of complexity with “justness” is that it is a subjective construct. The perception of the receiver of “just culture”, may not agree that the system is dealing with them in a just way. They may have to go through a retraining exercise or they may be sent home on full pay pending an investigation. To counter this issue of perception the ANSP have issued a document to their staff to outline what “just culture” means in their organisation.

The final question in this section on reporting, relates to the perceived timeliness and effectiveness of organisations to respond to safety issues. The mean score was 4.1 and 119

participants responded to the question. All operators seek to quell safety concerns as quickly as possible but the results show that some operators would like to move quicker on safety issues.

A safety issue could be a serious matter that has become known because of an incident or an accident (lagging), or it could arise from observed near misses (lagging) or from general perception without a safety event (leading). The aerodrome operator interviewees noted that gaining access to information to complete an investigation post event can be challenging at times. The aerodrome operator is mandated to report on all incidents that occur airside, some of which are part of the Mandatory Occurrence Reporting (MOR) scheme which are reportable to the CA that is governed by Regulation (EU) No 376/2014 and Regulation (EU) 2015/1018. This includes incidents involving airport personnel or regarding airport equipment occurring airside. The objective of an investigation is to establish the root cause while identifying and addressing the underlying causal factors.

Gathering information after an incident for investigation can on occasion prove challenging as access to information from airport third parties, personnel and incident reports may be delayed, may not be available, or may be withheld. The aerodrome operator should report all safety incidents encountered at the airport to all operators, but often they only have the occurrence data as other stakeholder incident reports are slow or not forthcoming. The reporting of safety incidents and the way that an organisation(s) deals with safety issues, and communicates the learnings are a key part of a working SMS.

Apart from gathering information, another main challenge stems from the nature of airport immediate mitigations to emergent safety issues. Given that the airport is the provider of infrastructure, it has a number of mitigations it can deploy instantly to meet an immediate risk. Safety issues that require immediate rectification may result in the temporary closure of a facility, or the deployment of a resource to manage the risk on the ground to keep the facility open while identifying more permanent mitigations. Negotiating more permanent solutions, requires an inter stakeholder approach to identify and implement the most effective and efficient solution for the airport as well as for all stakeholders.

Finally, if the mitigation does require an infrastructural change, the solutions can take a number of months to implement (dependant on the complexity of the issue). For example the process of taxiway realignment (i.e. moving the line), requires a number of phases such as feasibility, redesign, risk assessment which are submitted to the CA for approval that meet

an Aeronautical Information Regulation and Control (AIRAC) cycle for regulatory promulgation (issued every 56 days). In addition, the hire of a contractor, design of works, risk assessment of work phases, construction phase, notification of closures, Air Traffic Control (ATC) contingencies must be assessed for manoeuvring aircraft around the site, and finally upon completion of construction a "go live" date to final implementation. This involves many stakeholders that need to communicate and coordinate effectively.

4.3 Compliance

The next set of questions are centred around compliance and attitudes towards compliance. The objective of this set of questions was twofold. Firstly, to measure the maturity of the relative safety management systems, and secondly to capture the interplay between compliance and safety. In the interviews with the safety and operational professionals this area raised the most comments.

119 participants responded to the statement "Compliance and safe operations are the same thing". It showed the largest variance in scoring on the survey, with 5% scoring "no opinion", 48% who responded negatively and 47% who responded positively. The detractors of the statement were from all operators, but the lowest scores were ANSP, Aerodrome Operator and CA. The challenge with compliance is that it does not guarantee safety. There is also an added complexity of what may be compliant for one operator's operation that may introduce an unacceptable level of risk to another operator. An audit of technical compliance is relatively easy to assess as it is based on tangibles and meeting physical targeted standards, to assess the level of safety in an operation is more challenging to assess.

118 respondents viewed regulation as an enabler for safe operations (mean=4.1). The lower scores were from the ANSP (3.85) and the Aerodrome Operator (3.7). The sequence of questions on compliance progressed to asking how operators viewed evidencing compliance. Another question, replied by 118 survey participants, investigated the challenge of whether compliant operations are safe operations and determined if the relationship between evidencing compliance was as important as safe operations. The mean score for this question was 3.8. The highest score was from GHSP (4.29) and the lowest from ANSP (2.69).

The activities that operators undertake in a normal course of operations and in particular the SMS activities they carry out, generate an audit trail. Records include safety artefacts such as policies, procedures, licences, approvals and more tactical operational documents such as

risk assessments, investigation reports, training records, read and sign materials. A further question established the view on whether compliance with regulatory requirements is viewed as essential in maintaining a good safety culture. The mean score of the 115 respondents was 4.3.

Throughout the "compliance" section of the survey there are consistently lower scores from the Aerodrome Operator and ANSP. An ANSP participant said that compliance with local SOPs does not always guarantee safe operations, particularly if the SOP is 'weak' under certain circumstances.

For those who are audited under the EASA regime, the technical specifications are part of the initial certification for the entity and ongoing compliance programme process under EASA, which was previously the licensing process under ICAO standards and recommend practices transposed into national legislation. It is worth noting that compliance with a technical specification is not necessarily the safest option available to an operator. The certification specification (i.e. EASA), and/or the standard (i.e. ICAO), is an expression of the minimal required/expected standard for compliance.

Similar to aircraft regulation, where the aircraft manufacturer will publish the operating minima for the aircraft type, the airline operator adds the company regulations to create a larger safety space to operate in. SMS provides continued assurance to multiple stakeholders such as operators and the regulator as any changes must be pipelined through hazardous identification and risk assessment. This includes: the introduction of a new aircraft type; introduction of a new operator; a new piece of infrastructure; a new piece of equipment; a change to infrastructure; or a change to a working procedure. This would provide the operator with the assurance that an acceptable level of safety has been met and any risk has been reduced to a level that is as low as reasonably practicable. This would provide the regulator with evidence that the SMS is working and that the operator is managing change as prescribed in the Safety Management Manual (ICAO, 2013). Wilkes et al. (2014) suggests that this level of risk assessment may not be enough to assure safety, as operators are only assessing their own risk against their own criteria.

The interviewees from the Aerodrome Operator and the ANSP commented on the changes that have transpired with the introduction of EASA regulation and the way that the competent authorities are now mandated to regulate. Regulators are moving away from prescriptive regulation to a risk-based approach. This change is a recognised paradigm shift for both the

regulator (now the CA) and the regulated entity (the Operator). The change for the operator to a safety management system approach presents a recognised cultural change for the organisation involved. This onus of responsibility is on the operator to ensure that they are meeting the acceptable means of compliance, whilst it is the responsibility of the regulator (i.e. the CA) to measure the effectiveness of the SMS to ensure that the entity is managing the change of operation, procedure or infrastructure using the SMS methodologies (risk assessment and safety cases as required). Even with the dual approach of looking at safety through the quality of a technical specification lenses and a system perspective, the response from the survey indicated that there is still some work to be done to raise the level of assurance that safe and compliant operations are easier to achieve for all stakeholders. This is significant as the emergent risk may only become apparent through assessing the change via the various stakeholder lenses. What constitutes a safety initiative for one, could result in a new hazard for another.

A practical example of this was given by the GHSP interviewee who commented on a particular carrier who did not permit the use of baggage loading equipment to their aircraft. While this was contrary to the GHSP's internal procedures, the customer wanted their operation carried out in this way. This had the negative impact of increased manual handling injuries for the GHSP workforce, a breach in occupational health and safety procedures, employee downtime, and ultimately a human factors pressure point, which could result in a more serious incident.

The Aerodrome Operator interviewee gave the example of a safety initiative by the ANSP to simplify the workload for air traffic controllers on surface movements by introducing a new frequency and rearranging existing frequencies. This works well for aircraft operations that are moving sequentially through the frequencies to the point of departure/parking on an aircraft stand. The unintended consequence is that vehicles have lost some situational awareness of their working environment. Recognising where the critical touch points are and working collaboratively would aid to close the gap on whether a compliant operation is a safe operation.

4.4 Effectiveness

Effectiveness in this section focuses on operator's attitudes to working in a multi-stakeholder environment and the emergent need to approach safety management in a collaborative cross organisational way. 92 out of 115 survey participants strongly agreed with the statement that the inter-stakeholder airport safety forums and committees are effective to furthering safe

operations. Aircraft Maintenance Organisations gave the lowest score (3.5). The mean was 4.3 and the standard deviation was 0.79. When asked if the operational safety issues sometimes require inter-stakeholder collaboration to reach a solution, all 115 participants strongly agreed (mean=4.4; standard deviation=0.64). While respondents were generally positive to the idea of an inter stakeholder collaborative approach, they are not as confident that the outcomes of collaboration offer the best safety solutions as this received an average score of 3.8 (standard deviation= 0.86) from the 113 responders.

The final question (Table 5) in this commentary on the survey interrogates the opinion of 115 participants on the balance between production and protection. There was a significant divergence in the views held by the oversight function of the CA to those held by the other practitioners. This highlights the fundamental difference between commercial entities and oversight functions. Commercial organisations follow efficiency–thoroughness trade-off principles to maintain competitive advantage. This does not necessarily mean that operators choose an unsafe option, but they reach an acceptable level of safety to meet the operational demand and commercial drivers. ICAO recommends that when undertaking a risk assessment, the participants strive to achieve an acceptable level of safety. One respondent from the ANSP category mentioned that the system does not seem to recognise a 'common-sense' approach to safety management, but requires a hazard analysis to justify the changes to practices or procedures. The respondent also supported that in a committee-based approach there are too many people involved with no actual or valuable input. The respondent stressed that this approach leads to over-analysis and identification of 'safety issues' which do not actually exist, or prescriptive procedures which are not actually required. Finally, the respondent added that safety management has become career-oriented, rather than safety-oriented.

Table 5: Responses to 'While safety is important there is a limited supply of resources available and so it's not possible to invest fully in safety' statement

	Strongly agree (5)	Agree (4)	No Opinion (3)	Disagree (2)	Strongly disagree (1)	Total	Weighted Average
Airline Operator	13%	27%	2%	42%	17%	42%	2.77
GHSP	13%	33%	13%	27%	13%	13%	3.07
Aircraft Maintenance Org.	0%	25%	0%	50%	25%	3%	2.25
ANSP	17%	33%	8%	42%	0%	10%	3.25
Aerodrome Operator	3%	33%	10%	43%	10%	26%	2.77
Competent Authority	0%	17%	0%	83%	0%	5%	2.33
Total (n=115)	10%	30%	6%	43%	12%	100%	2.74

Dublin Airport has experienced exponential growth over the past number of years with six years of consecutive growth from 18.4 million in 2010 to 27.9 million in 2016 (Dublin Airport, 2017). Whilst the growth has been beneficial for all, the increase in traffic correspondingly produces a change in operations, albeit an incremental one. The volume increases the numbers of air traffic movements which increases the general level of ground operational activity; the number of persons employed airside, the amount of ground service equipment required, the aircraft towing and the amount of wear and tear on the pavement structures. All of these elements can contribute to the erosion of previously established and acceptable safety margins. Increased workloads, pressure, time constraints are all part of the established human factors that can be a contributory factor in invoking an accident. The operator needs to remain vigilant and factor in the increased activity while at the same time employ mitigation strategies. Gaining operational efficiency and reducing cost through lean management of resources is becoming even more important particularly in a capital-intensive industry such as aviation.

The ANSP interviewees spoke of their vigilance to see what factors outside of the Dublin ATM network may introduce risk to their operation. The example given was that if there is any change to adjacent airspace, Dublin ATC must assess the possible risks or impacts that this may have on their operation. The ANSP stated that for this reason their safety teams' attendance at the multi stakeholder operational efficiency forums (i.e. Dublin Airport Operations Planning Group -DAOPG) is as critical as attendance at the safety forum (i.e. Local Runway Safety Team-LRST). Every change to the operation, if not managed, can result in an erosion of previously established safety margins.

In 2014 and 2015 respectively there were two aircraft accidents that happened in the same collision location/area (AAIU, 2016; AAIU, 2015). The recommended action from the CA was for a collaborative approach from the aerodrome operator, the ANSP and the airlines who could technically argue that they were not at fault. A sub group of the DAOPG is tasked with improving the level of safety in the particular area of those two collisions. It was a case that the area in question on the airfield had been in use for many years, but due to change in the prevailing direction of operations, a hidden risk was introduced into the system. This was resolved in part by work done by a multi stakeholder group of the base carriers, ANSP and the airport operator. This collaboration happened post event and under specific instruction from the regulator. Both the ANSP and the Aerodrome operator spoke of the challenges of working collaboratively on such matters. The balance of power and willingness to work

collaboratively is not distributed evenly between these stakeholders. Fear of litigation and allocation of fault were cited in the interviews as a barrier to better interaction on joint assessment of risk.

5. CONCLUSIONS AND RECOMMENDATIONS TO AVIATION PRACTITIONERS

The implementation of SMS across regulated entities in the aviation sector has improved the understanding of safety, the management of change, hazard identification and risk assessment and mitigations within the aviation community. The aim of this paper was to address the gap in the current aviation safety literature of the role of multi stakeholder groups in furthering more efficient and safe operations into the airport system. The in-depth survey which specifically targeted the stakeholders at Dublin airport was undertaken to ensure this. The implementation of the Dublin Airport SMS and the use of inter stakeholder safety forums are deemed positive and have evolved a more community based sense of safety culture amongst airside users.

The research showed that safety management systems are effective for individual operators' organisations and have enabled effective safety management as well as delivering a healthy safety culture. Operators are actively engaging with their individual safety management systems and have a uniform approach, understanding the application of the four safety management pillars (i.e. i) Safety Policy and Objectives; (ii) Safety Risk Management; (iii) Safety Assurance; and (iv) Safety Promotion). The evidence from the survey shows that there are effective safety sub cultures: learning culture; reporting culture; informed culture and just culture within each of the operators' organisations at Dublin Airport. Furthermore, all the players in the airport environment have their own maturing safety management systems as they are committed to continuous improvement as well as better levels of safety engagement.

Moreover, the research showed that the operators at the airport have an insightful understanding of the relationship between compliance and safe operations which are cognisant of the myopia that compliance is equal to safety. The operators favour safe operations over compliant ones. Changes in the GHSP regulatory regime may bring new opportunities for the aerodrome operator to engage more with the GHSPs on airside issues.

Stakeholders are somewhat open to the multi stakeholder management, but only where it is appropriate and with the caveat of concern around possible legal exposure to liability. A more open working relationship with better sharing of safety information to create a mutually more

informed culture would be preferable. A more comprehensive level of understanding of each other's operations and a new way of committing to meet broader safety objectives should be considered. Continued work on stakeholder relationships is required. Process mapping of the tactical stakeholder relationships is recommended which would aid the aerodrome operator to engage more confidently in multi stakeholder forums.

The implementation of a Safety Management System is effectively an organisational change project and as such it should be integrated into the organisational strategy. The SMS ethos requires that safety culture is part of the organisational culture. The safety teams should become part of the efficiency drives, to elevate the safety culture and to embed it truly in the "this is way we do things around here" aspect of the operation. SMS will be the prevailing safety management framework for at least the next decade. Certainly, it can be a powerful tool if deployed successfully within an organisation.

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ANALYZING THE AIRPORT PASSENGER EXPERIENCE: THE CASE OF CAIRO INTERNATIONAL AIRPORT

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ABSTRACT

This paper aims to analyze the key elements influencing the airport passenger experience at Cairo International Airport (CIA). The research confirmed that four main dimensions (the airport's services and facilities, access procedures, environment and personnel) have a significant positive effect on passengers' perception of the overall airport experience. The research proved that the airport's services and facilities is the most influential dimension of the passenger experience. The results also revealed that socio-demographic variables have a significant influence on passengers' impressions towards the overall airport experience. The paper confirmed that the airport customer care, airport ambiance, airport design, dining areas and staff efficiency are the primary elements of the passenger experience. Passengers' ratings of CIA were found to be below average in the most influential areas of the airport experience. The research concluded a number of recommendations that aim to enhance the overall passenger experience at CIA.

Key words: Airport experience, Cairo International Airport, Customer experience management, Customer journey, Passenger impression, Quality rating

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1. INTRODUCTION

Cairo International Airport (CIA) was inaugurated in the 18th of May, 1963. It is the main hub for Egypt Air. The airport comprises three terminals, namely: Terminal 1 (the oldest facility), Terminal 2 (recently had its soft opening after undergoing major renovations), and Terminal 3 (the newest addition to the airport and the base for all Star Alliance members) (Cairo Airport Authority, 2017). The following table demonstrates the ranking of CIA among top Arab airports according to passenger traffic. The airport holds the 6th positing among Middle Eastern airports.

Table 1: The Top Ten Arab Airports by Passenger Traffic-2015

Rank	Airport	Passenger Traffic
1	Dubai International	78,010,265
2	Hamad International Airport	31,008,549
3	King Abdul-Aziz International Airport	29,010,429.
4	Abu Dhabi International Airport	23,293,022
5	Khalid International Airport	22,656,457
6	Cairo International Airport	14,969,000
7	Kuwait International Airport	11,269,029
8	Muscat International Airport	10,315,358
9	Sharjah International Airport	10,039,936
10	King Fahd International Airport	9,526,026

Source: Airport Council International (2016)

Note: Latest available data

CIA is the second busiest airport in Africa, after Tambo International Airport (Johannesburg, South Africa). The airport handles approximately 14 million passengers annually (Airport Council International, 2016). Looking to the future, the airport plans to create the 'airport city concept' (Cairo Airport Authority, 2017), aimed at creating a great customer experience. Siebert and Kasarda (2008) exemplified the airport city concept as the transformation of airports into luxurious shopping malls and artistic and recreational venues. Brand name shops, specialty retail and a variety of restaurants, along with entertainment and cultural attractions, are all among the features that can form a more exhilarating and unique experience for passengers. During the past few years, the airport's quality rating declined from the 82nd position in 2011 to the 100th position in 2012. Since then, it was unable to regain its position among the top 100 airports in the world in terms of customer quality review ratings (Skytrax, 2017).

Table 2: Top Middle Eastern airports according to customer quality ratings, 2017

Ranking	Airport
1	Doha Hamad
2	Dubai
3	Abu Dhabi
4	Bahrain
5	Medina
6	Muscat
7	Riyadh
8	Dubai World Central
9	Dammam
10	Tel Aviv

Source: Skytrax (2017)

The previous facts indicate that CIA needs to provide a better passenger experience in order to enhance its positions among high quality airports in the Middle East.

2. THE AIRPORT MARKETING THEORY

Until the 1980s, airports were relatively passive towards their reliance upon marketing. Practitioners were considering airports as monopolistic establishments and did not influence passengers' decisions in target markets. During the past few decades, this viewpoint has changed dramatically. The growing rivalry in the air transport industry made many airport services/products subject to competition, and hence dependent upon marketing to influence consumer decisions. Today, airports have embraced a full-range of contemporary marketing techniques (e.g. relationship marketing-e-marketing-social media marketing) in order to survive. It is important to note that airports are categorized as providers of a service rather than goods. Therefore, it is evident that airports rely on service marketing implications due to its nature and characteristics (Halpern and Graham, 2013). In the following table, various airport service marketing implications are introduced. As mentioned above, airports are now heavily relying on consumer-oriented marketing to survive the ongoing fierce competition. The creation of a unique customer experience is fundamental for marketing contemporary airport services.

Table 3: The implications of airport service marketing

Service characteristic	Airport marketing implications
Inseparability	Airports must maintain strong relationships between all service providers and end-users with an aim to deliver a proper service outcome.
No transfer of ownership	The need to instill brand identity and encourage loyalty.
Intangibility	Airports must create empirical evidence of their service quality features.
Heterogeneous	Investment is needed in quality control to keep up a high standard service in a variety of markets.
Perishability	Market forecasts are vital for airports as well as their use of various marketing mix elements to cope with changes in supply and demand.

Source: Modified from Halpern and Graham (2013)

3. THE CONCEPT OF CUSTOMER EXPERIENCE MANAGEMENT (CEM)

Today, managers seek to broaden their perspective towards customer's interaction with organizations with the aim to form a more holistic view of the whole journey. Relying heavily on 'touch points' – the various critical moments when customers interact with the organization and its services during the purchase process and after its completion – is now considered as a narrow perspective that diverts the management's attention from seeing the big picture.

The solution to broken service delivery is not solely related to 'touch point' management; the identification of end-to-end customer journeys is even more important. Finding how the organization is performing in each journey and making necessary transformations to the processes with an aim to redesign and support these journeys is fundamental (Rawson, Duncan and Jones, 2013).

The customer experience (CX) can be defined as: *"an experience that originates from a set of interactions between a customer and a product, a company, or part of its organization, which will provoke a reaction. This experience strictly personal and implies the customer's involvement at different levels (rational, emotional, sensorial, physical and spiritual)"* (Gentile, Spiller and Noci, 2007, p.397).

Chakravorti (2011) highlighted the importance of the relationship between the concept of customer experience management, knowledge management and organizational culture change. Instilling the knowledge base needs across the organization will surely enable knowledge management to attain a high level of organizational learning and hence the creation of added value offerings to the customer experience.

Mukerjee (2012) created a framework that describes the holistic approach towards customer experience management. The framework is presented in Table 4.

Table 4. The framework of CX management

Impacts of CX	Issues
Senses	Visual impact Auditory and olfactory impact
Processes	Interaction, method Customer view Tools used to enable processes
Communication	Communication formats Consistency across multiple channels
Professionalism	Excellence in product / service performance Contemporary practices
Relationship	Special treatment offered to loyal customers Experience throughout the product / service lifecycle

Source: Mukerjee (2012)

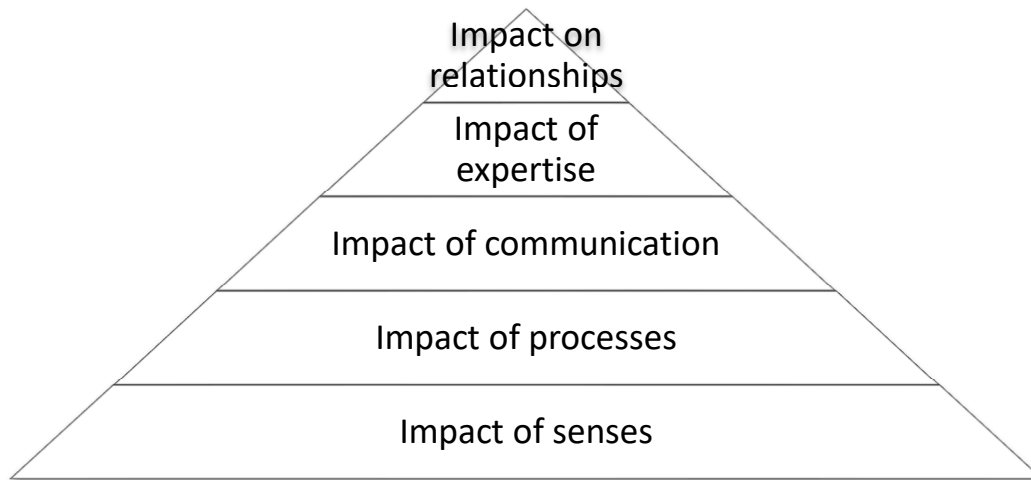
The hierarchy of the above mentioned elements is demonstrated in Figure 1.

Enhancing the passenger experience includes: 1. Identifying key journey elements, 2. Understanding current performance, 3. Redesigning the experience (Rawson, Duncan and Jones, 2013). McKinsey (2016) also defined three different perspectives to create and sustain distinctive customer experiences:

A-Customer's viewpoint

- Identify customer experience
- Align the processes and end product with customer requirements and expectations.
- Determine key drivers for improvements from customers' perspective.

Figure 1: The passenger experience management pyramid



Source: Mukerjee (2012)

B-Journey assessment

- Recognize current work flow.
- Identify weak points in process flows and key interfaces.
- Analyze networking among various parts of the organization.

C-Leadership alignment

- Conduct meetings with senior managers in order to understand the current performance.
- Organize workshops to create a joint aspiration on consumer orientation.
- Recognize the mind-sets and behavior across various levels on customer orientation.

3. THE AIRPORT PASSENGER EXPERIENCE

Managers consider the airport industry as a very diverse business field. Airports are characterized with a high degree of differentiation between service quality levels, diverse forms of ownership and management structures. Airport characteristics are also influenced by various environmental factors related to its geographical location (Oum, Yu and Fu, 2003). The evaluation of airport operational efficiency is complicated due to previously mentioned differences. Passenger satisfaction has become a key objective in service operations because of the benefits it brings to organizations (Ranaweera and Prabhu, 2003). Lubbe and Zambellis (2011) confirmed that the main measure of airport operation efficiency is passengers'

opinions; therefore it is highly important to analyze passengers' expectations towards airport services.

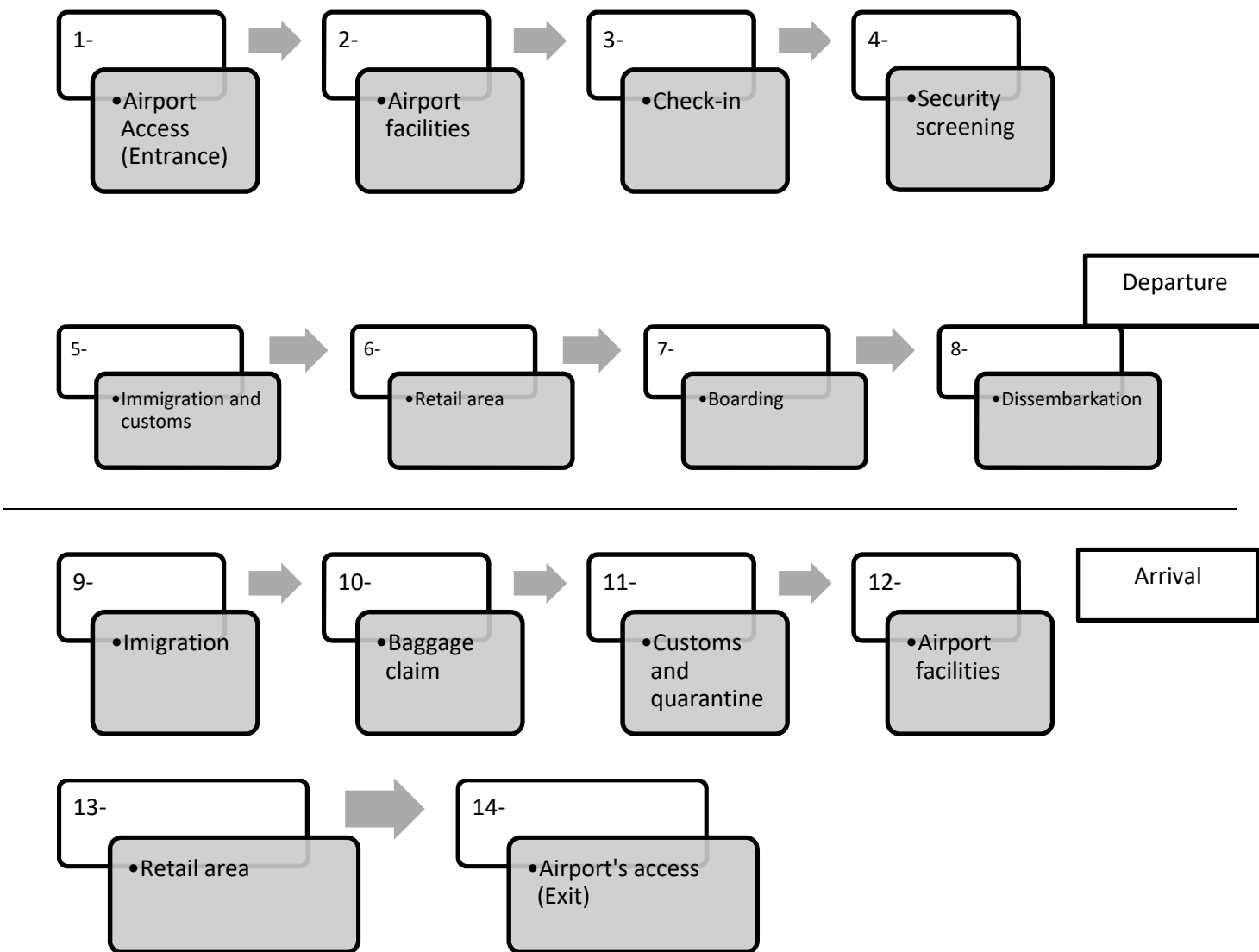
Nowadays, travelers search for 'authentic experiences' as a temporary escape from daily life routine. In a world of chaos and irregularity, the terminal can be seen as a worthy and intriguing refuge of elegance and logic. Improving the customer experience relies upon the adoption of 'humanistic approaches towards the customer rather than regarding people as information processors and rational decision makers (Losekoot, 2015).

The airport customer experience can be defined as: *"the net impression of all the experiences a customer has in an airport, as judged by customers based on their individual standards, expectations and perceptions"*. (Airport Cooperative Research Program, 2015, p.4). The airport customer experience management can be described as a systematic approach to manage the net impression (emotional and rational) produced by the airport experience. It includes the strategies and processes employed by airport management to plan, engineer, implement and sustain satisfying customer experiences from the customer's perspective across the entire service delivery chain. The customer touch points in airports encompass all the interactions that a passenger has during his journey. They can be categorized into: physical (the airport elements that are experienced through any of the five human senses) - procedural (interaction with the airport system)-human (interpersonal with the airport staff)-subliminal (airport ambiance /atmosphere that evoke passengers' feelings throughout various levels of consciousness)

In order to maintain a positive sense in the customer's impression of an experience, the airport management should also pay attention to various moments of truth. The moments of truth represent significant touch points than can disrupt the management's trials to create a positive customer experience. Superior handling of moments of truth can differentiate airports that seek to attain a high level of customer satisfaction. Moments of truth can include the following negative outcomes: lost luggage, missed flights and rude airport employees. (Airport Cooperative Research Program, 2015, p.4).

The following figure illustrates the various domains / phases of the passenger airport experience.

Figure 2: Airport domains of the overall passenger experience



Source: Modified from Wiredja, Popvic and Blackler (2015)

Hess and Polak (2005) found that many non-price characteristics have a strong impact on the passenger's choice probabilities (e.g. airport access time- airport delay-early arrival times).

Passengers' expectations of the airport's service quality are mainly formed by three dimensions: 1- Function (effectiveness and efficiency) 2-Interaction (expectations regarding the airport staff) 3-Diversion (distracting passengers from possible airport boredom) (Fodness and Murray, 2007).

Bandeira and Correia (2012) confirmed that passengers' profiles influence their impressions towards their airport experience. They ascertained that age, reason for traveling, frequency

of air travel influence passengers' expectations regarding the check-in and the departure lounges area. These findings confirm the necessity of mapping the profiles of passengers in order to properly evaluate their customer experience (CX) and further more contribute to the development of the airport services and ambience.

It is crucial for the airport management to understand and embrace what drives customer satisfaction and perception. In the following table, a number airport service elements and amenities that can influence airport passenger experience are demonstrated.

Table 5: Sample elements of the airport customer experience (CX)

<u>Sense of place:</u> -Architecture -Live music -Local cuisine -Local events -Art and museum exhibitions -Local sightseeing tours <u>Corporate concessions:</u> -Airport pay lounges -Ordering through touch-screen devices -Healthy foods -Local foods -Internet services: Free Wi-Fi <u>Amenities</u> -Location rooms -Restrooms: restroom attendants / restroom for pets (pets relief areas)	-Airport signage -Queue management -Waiting distances -Loyalty and reward programs -Parking -Ground transportation -Check-in/ticketing/baggage drop -Security -Flight Information and passenger information -Hold rooms (seating areas) -Domestic arrivals and baggage claim -Arrival concessions -Efficient customer service -International arrivals facilities <u>Other innovations:</u> -Yoga rooms -Hydration stations
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Source: Compiled from ACRP (2016)

It's important to note that intangible features of the airport also have a noticeable influence on passengers. Ariffin and Yahaya (2013) confirmed that there is a strong relationship between the airport image and passenger delight. An airport design with national characteristics, for example, can have a positive impact on passengers' impressions. Bogicevic (2014) stated that airport design and appearance play a significant role in the quality of the passenger experience throughout his journey. 'Servicescape' is a term used to embody the environment where the service is delivered takes place. The servicescape consists of the groups of physical evidence factors: 1. Ambient conditions (e.g. air quality- temperature- music-noise-aroma); 2. Spatial layout and functionality (e.g. building layout-furniture-equipment); 3. Signs, symbols and artifacts (e.g. signage-décor-artifacts). Other servicescape

elements include: landscape-employee dress-virtual landscape. It is evident that servicescape features can play an essential part in creating a likeable environment for passengers during their journey throughout the airport.

It is worth mentioning that Information Communication Technologies (ICT) also play a significant role in the contemporary airport passenger experience. ICT innovations (e.g. biometric technologies, Near Field Communication, Big data-smartphones) can gradually revolutionize the airport passenger experience. The Lisbon Portela Airport, for example, was able to reduce its boarding time by 80-90% (Kalakou, Psaraki and Moura, 2015).

On the other hand, there social-related factors that influence the passenger experience along with the before mentioned automated features. Minton (2008) investigated the check-in experience and concluded that many passengers preferred the human interaction over self-service technologies due to social-related factors. Although automation can significantly shorten the queuing time, a proportion of passengers are reluctant to use self-service technologies because of their fear of embarrassment.

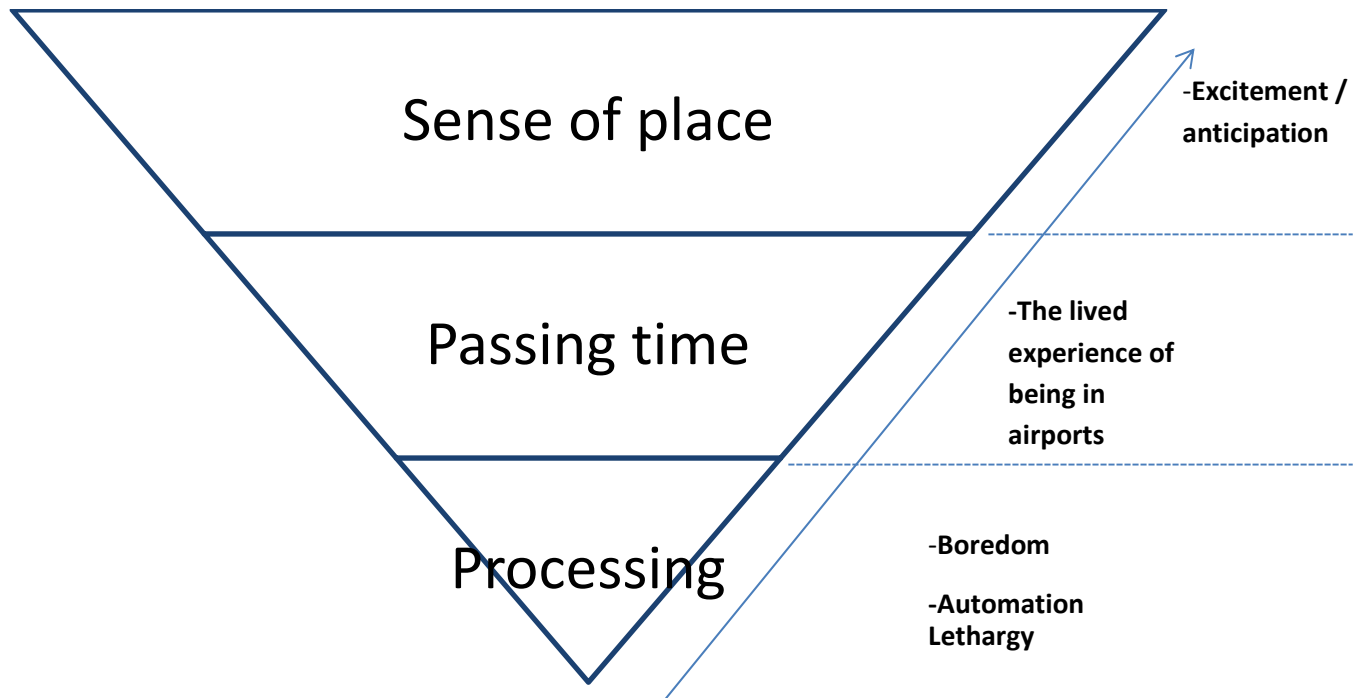
These facts confirm that passengers differ in terms of technological literacy and tendency to use technologies, and hence, designing a satisfactory airport experience needs in-depth analysis of diverse passenger needs and wants in various markets. Losekoot (2015) summarized the key factors influencing the airport experience from the view point of passengers: 1. the physical environment and airport facilities; 2. the processes of the airport and those delivering the services, 3. the people at the airport (both staff and airport passengers), 4. the sense of place of all above mentioned factors.

The following figure demonstrates the various impressions of passengers towards different levels of airport experiences. All airport managers should seek to improve the airport journey with an aim to create a sense of place for all passengers where there is excitement / anticipation for every element they encounter.

In conclusion, airports are now considered as an industry that operates in a unique and ever changing physical, financial and regulatory environment. In order to develop an airport's overall framework of strategic customer management system, managers will need to determine a number of key performance indicators (KPIs). The trend towards mobilizing and exploiting the airport's intangible or invisible assets has become far more crucial than investing and managing physical / tangible assets. Customer relationship management (CRM) has been identified as an intangible asset that will help the airport retain the loyalty of existing

customers and furthermore enable the new customer segments and targeted markets to be served effectively and efficiently (Kamarudin, 2015).

Figure 3: The airport experience model



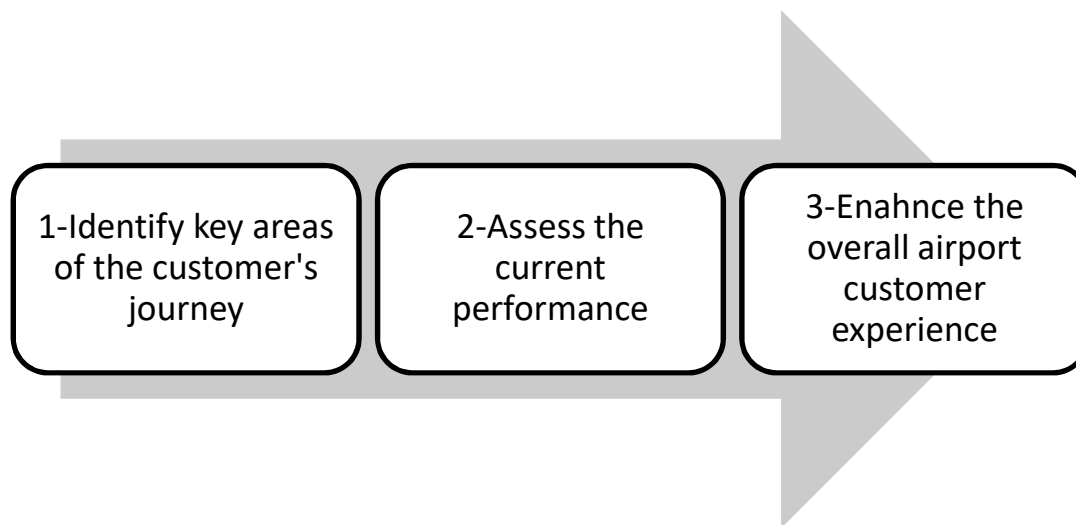
Source: Losekoot (2015)

4. METHODOLOGY

4.1 Research Objectives

The research seeks to identify the elements of the airport experience that delight passengers during their journey beyond the limits of 'touch points' and 'moment of truth' concepts. The passenger survey was conducted at Cairo International Airport (CIA) during the months of April, May and June, 2017. The survey questionnaire was self-administered randomly to passengers (in terminals 1, 2 and 3) in the form of a formal one-on-one interviews that aim to determine respondents' impressions regarding their airport experience with CIA, and to further find out their perspective towards the various elements they encountered during their journey. The respondents were also asked an open-ended question that explores the elements of the airport experience that need further improvements. The research identified key areas that affect passengers' journey which later formed the ways to enhance the overall customer experience at CIA. The research objectives are summarized in the research model shown in figure 4.

Figure 4: Research model



The research aims to identify key areas of the passenger journey (according to their importance), recognize various defects of the airport experience, and finally suggest ways of enhancing the overall passenger journey. Furthermore, the construction of the passenger experience survey is demonstrated in table 6.

Table 6: Design structure of the passenger survey

Airport experience dimension	Element Code	Element
Airport access procedures (AA)	AA1	Check-in
	AA2	Immigration and customs
	AA3	Boarding procedures
Airport services and facilities (AS)	SF1	Flight and passenger information
	SF2	Retail shops
	SF3	Dining areas
	SF4	Wi-Fi connectivity
	SF5	Passenger lounge
	SF6	Terminal seating
	SF7	Restrooms
	SF8	Luggage Claim
	SF9	Ground transportation
Airport Personnel (AP)	AP1	Airport customer care
	AP2	Airport staff efficiency
Airport environment (AE)	AA1	Airport design
	AE2	Terminal cleanliness
	AE3	Airport amenities
	AE4	Airport ambience

Means were calculated to find out the most important areas of the airport experience that were mostly mentioned by respondents during the formal interviews. A content analysis was undertaken to the open-ended section of the survey with an aim to give passengers the chance to express their impressions, sentiments and aspirations towards their experience with CIA. 'Aquad v.7' (a renowned computer assisted quantitative data analysis software) was used to perform a quantitative content analysis of all gathered open-ended replies in order to classify passenger impressions according to the predefined airport experience categories. Respondents' consensus towards various elements is reached at the end of the content analysis. Finally, the research suggested a number of recommendations that will help enhance the overall airport passenger experience of CIA.

4.2 Sampling

Due to the large population size (N=14,969,000), a table of sample sizes was used at a confidence level of 95% and a reliability level of ± 5 , which is appropriate for this type of research (Ritchie and Goeldner, 1994). The maximum sample size was chosen (n=384) and 16 additional questionnaires were added to compensate for non-responses. The final sample size (n) was determined to be 400 questionnaires. The survey acquired 211 valid responses which accounts for 52 % of the total sample. It is acceptable response rate for these types of surveys (Ritchie and Goeldner, 1994).

Table 7: Value ranges and scales of the demographic variables

Demographic Variables	Value ranges / scales
Gender	Male-Female
Age category	Less than 18/ 18-24/ 25-34/35-44/45-54/55 +
Education	High school
	Bachelors
	Master
	PhD
	Other
Frequency of air travel / year (experience)	1-3 / 4-6 / 7-11 / 12+
Occupation fields	Education
	Business and finance
	Management / Administrative
	Architecture and engineering
	Laborer
	Unemployed

4.3 Research Hypotheses

In order to test the relationship between the socio-demographic profiles of respondents, the passengers' ratings of various airport elements and the overall impression of respondents towards the overall airport experience, five hypotheses were formulated. The validity of the following five hypotheses was tested using ANOVA and multiple regression analysis (The SPSS v.22.0 was used to elicit various results).

H0- *Passengers' impressions towards their overall experience with Cairo International Airport will not differ according to their socio-demographic characteristics (gender-age-education-occupation-frequency of air travel).*

The alternative hypothesis is: **H1-** *Passengers' impressions towards their overall experience with Cairo International Airport will differ according to their socio-demographic characteristics (gender-age-education-occupation-frequency of air travel).*

The single factor ANOVA (analysis of variance) test is used to determine whether any of the differences between the means are statistically significant by comparing the p-value to the significance level in order to assess the null hypothesis (the null hypothesis states that the means are all equal). The research significance level is 0.05 ($p = 0.05$).

H02- There is a positive relationship between passengers' perception of airport access procedures and the overall impression of the airport experience.

H03- There is a positive relationship between passengers' perception of airport services and facilities and the overall impression of the airport experience.

H04- There is a positive relationship between passengers' perception of the airport environment and the overall impression of the airport experience

H05- There is a positive relationship between passengers' perception of airport personnel and the overall impression of the airport experience

5. RESULTS AND DISCUSSION

5.1 Reliability Test

Reliability is defined as the tendency toward consistency found in repeated measurements of the same phenomenon. Therefore, a reliability test was conducted to assess the quality of the data and Cronbach's alpha was computed to measure the internal consistency of the

responses to all items of the survey. The reliability test results ($\alpha = 0.98$) shows that items exhibit a highly acceptable level of reliability ($\alpha > 0.90$).

5.2 Descriptive Statistics

As shown in figures 5 and 6 respectively, 96.2% of respondents were flying on international routes and 94.3% of respondents were traveling for leisure purposes. The majority of respondents were males (83.8 %) and were in the category of 25-34 years old (54.5%). They are followed by the category of 35-44 years old (20.2%). 77.8% of respondents travel from 1 to 3 times per year. The majority of respondents have at least a Bachelor's degree (57.6%). The majority of respondents (50%) work in management-related professions.

Figure 5: Flight route type

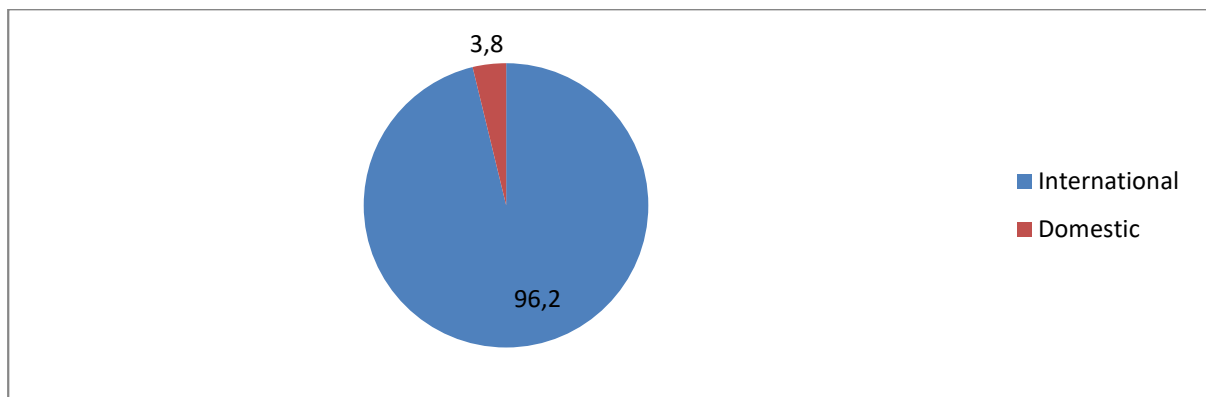


Figure 6: Trip purpose

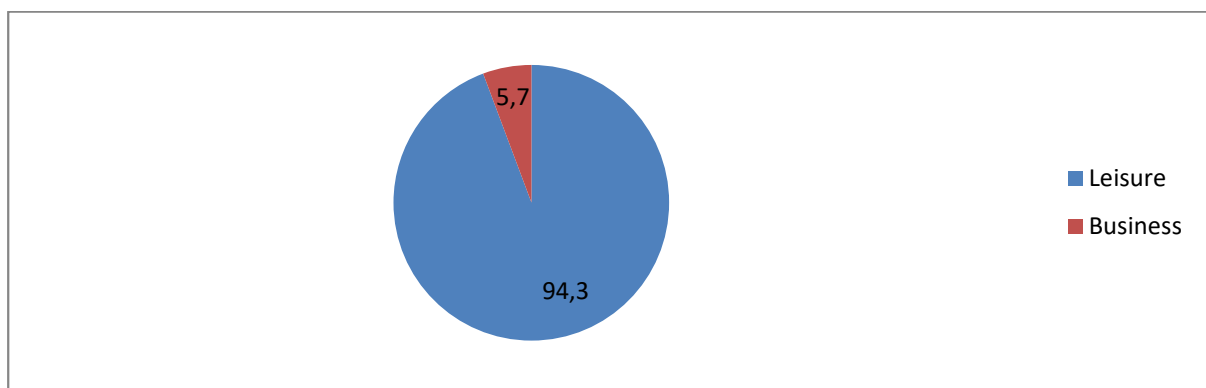
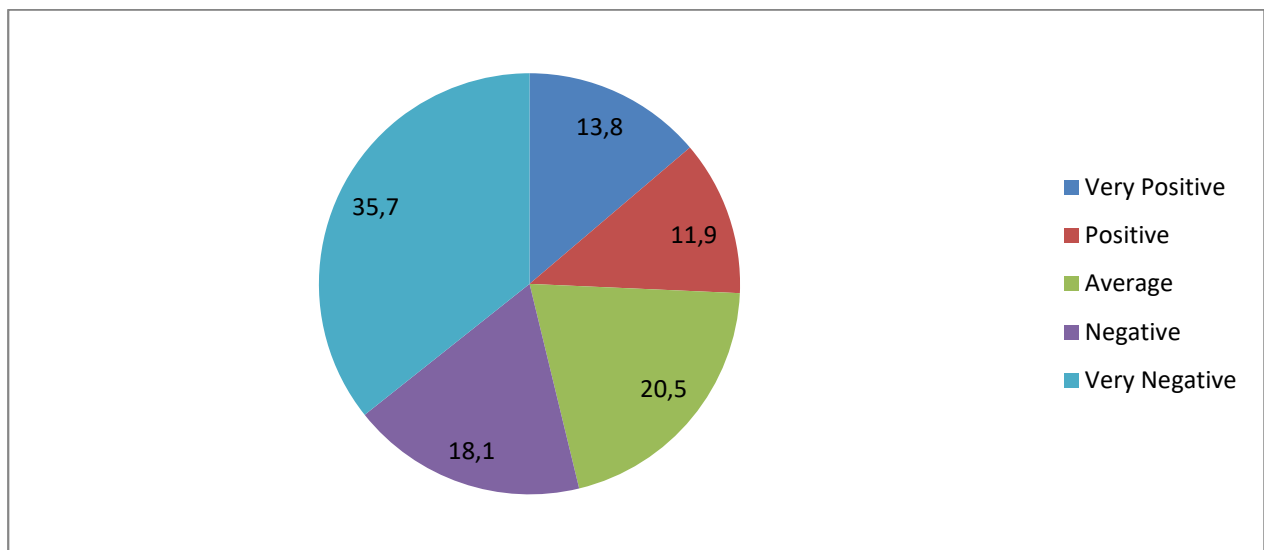


Table 8: Socio-demographic characteristics of respondents

Attribute	Scale	(%)
Gender	Male	83.8
	Female	16.2
Age	Less than 18	2
	18-24	5.1
	25-34	54.5
	35-44	20.2
	45-54	12.1
	55+	6.1
Frequency of air travel	1-3	77.8
	4-6	13.1
	7-11	3
	12+	6.1
Education	High school	2
	Bachelors	57.6
	Master	19.2
	PhD	20.2
	Other	1
Occupation fields	Education	40
	Business and finance	2
	Management / Administrative	50
	Architecture and engineering	4
	Laborer	2
	Unemployed	2

Figure 7: Passengers' Impressions of the Overall Airport Experience

The results in figure 7 indicate that the overall airport experience is below average according to passengers' ratings. The majority of responses were ranging from negative to very negative. The mean score (2.50) of the overall impression of the airport experience confirms this fact in the following table. It's clear from the previous results in table 9 that passengers' ratings of airport experience elements of CIA are below average.

Table 9: Mean and standard deviation of airport experience elements

Airport Experience Elements (<i>n</i>=211)	Mean	STDV
Terminal Cleanliness	2.70	1.53
Airport design	2.57	1.48
Airport amenities	2.56	1.36
Luggage claim	2.55	1.41
Retail shops	2.54	1.48
Check-in	2.53	1.46
Passenger lounge	2.52	1.44
Wi-Fi	2.51	1.42
Boarding	2.5	1.38
Restroom	2.48	1.43
Flight and passenger information	2.47	1.39
Terminal seating	2.46	1.45
Dining areas	2.45	1.47
Immigration and customs	2.44	1.42
Airport staff efficiency	2.42	1.49
Ground transportation	2.41	1.42
Airport ambiance	2.38	1.53
Airport customer care	2.30	1.55
Overall impression of the airport experience	2.50	1.42

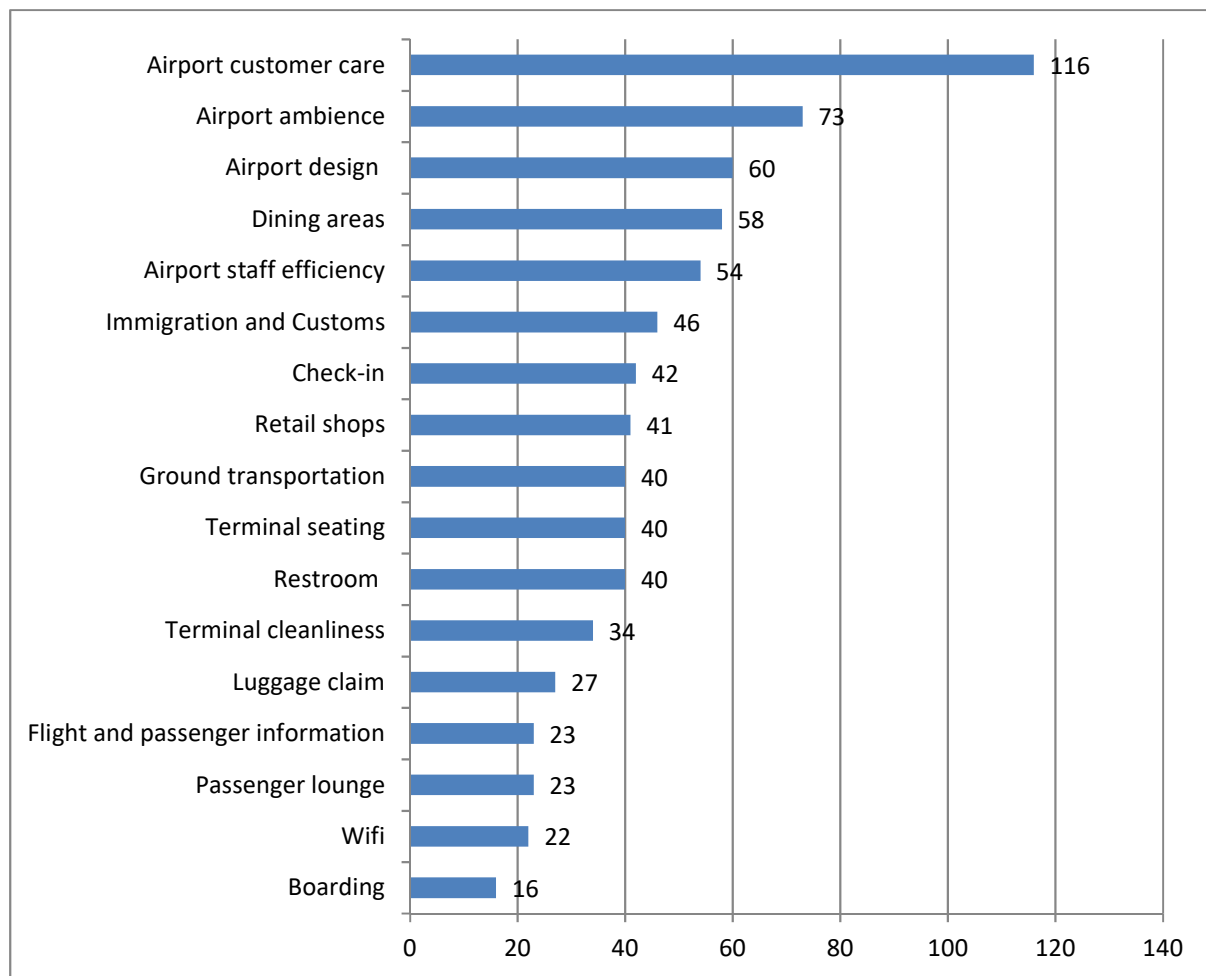
Notes: 1– STDV=Standard deviation

2-Passenger rating scale (1=Excellent, 2=Good, 3=Average, 4=Poor, 5=Very poor)

5.3 Key Areas of the Customer Journey

Responses of passengers' perception of importance of various airport experience elements are demonstrated the following figure.

Figure 8: Passengers' expectations of key elements of the airport experience (frequencies)



5.4 Hypotheses Testing

As shown in table 10, the analysis of variance results showed that the effect of socio-demographic characteristics on respondents' impression of the overall airport experience was significant, gender [$F(1,418) = 4.38, p = 0.036, (p < 0.05)$]; age [$F(5,1254) = 2.25, p = 0.046 (p < 0.05)$]; frequency of air travel [$F(3,836) = 2.74, p = 0.042, (p < 0.05)$]; education [$F(4,1045) = 2.80, p = 0.024 (p < 0.05)$] and occupation [$F(5,1254) = 3.043, p = 0.009, (p < 0.01)$]. It's therefore confirmed from the ANOVA test results that the null hypothesis – H_0 is **rejected**. The alternative hypothesis is therefore **supported**.

Hypothesis 1: *Passengers' impressions towards their overall experience with Cairo International Airport will differ according to their socio-demographic characteristics (gender-age-frequency of air travel-education-occupation).*

Table 10: ANOVA test results between respondents' impressions of the overall airport experience and socio-demographic variables

<i>Attributes</i>	<i>Source of Variation</i>	<i>SS</i>	<i>D.F.</i>	<i>MS</i>	<i>F</i>	<i>Significance</i>
Gender	Between Groups	10.371	1	10.371	4.388	0.036*
	Within Groups	987.857	418	2.363		
	Total	998.228	419			
Age	Between Groups	25.368	5	5.073	2.258	0.046*
	Within Groups	2817.485	1254	2.246		
	Total	2842.853	1259			
Frequency of air travel	Between Groups	18.298	3	6.099	2.741	0.042*
	Within Groups	1859.690	836	2.224		
	Total	1877.989	839			
Education	Between Groups	25.260	4	6.315	2.803	0.024*
	Within Groups	2353.790	1045	2.252		
	Total	2379.051	1049			
Occupation fields	Between Groups	34.711	5	6.942	3.043	0.009**
	Within Groups	2860.285	1254	2.280		
	Total	2894.996	1259			

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

A multiple regression analysis was also used to test the effect of all airport dimensions (independent variables) on respondents' overall impression towards the airport experience (dependent variable). The following table shows the results of the multiple regression analysis.

Table 11: Multiple regression analysis results

Element	Beta	t-test	P value	Remark
Airport services and facilities	0.456***	5.919	0.000	Supported
Airport access procedures	0.235***	3.783	0.000	Supported
Airport environment	0.182**	3.367	0.001	Supported
Airport personnel	0.155***	4.233	0.000	Supported

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Hypothesis 2: **Supported**

The results confirm that the services and facilities have a positive significant influence on respondents' overall impression with airport experience elements ($\beta = 0.456$, $p < 0.001$; t -value = 5.919).

Hypothesis 3: Supported

The results confirm that the airport access procedures have a positive significant influence on respondents' overall impression with airport experience elements ($\beta=0.235$, $p<0.001$; $t\text{-value}=3.783$).

Hypothesis 4: Supported

The results confirm that the airport environment have a positive significant influence on respondents' overall impression with airport experience elements ($\beta=0.182$, $p<0.01$; $t\text{-value}=3.367$).

Hypothesis 5: Supported

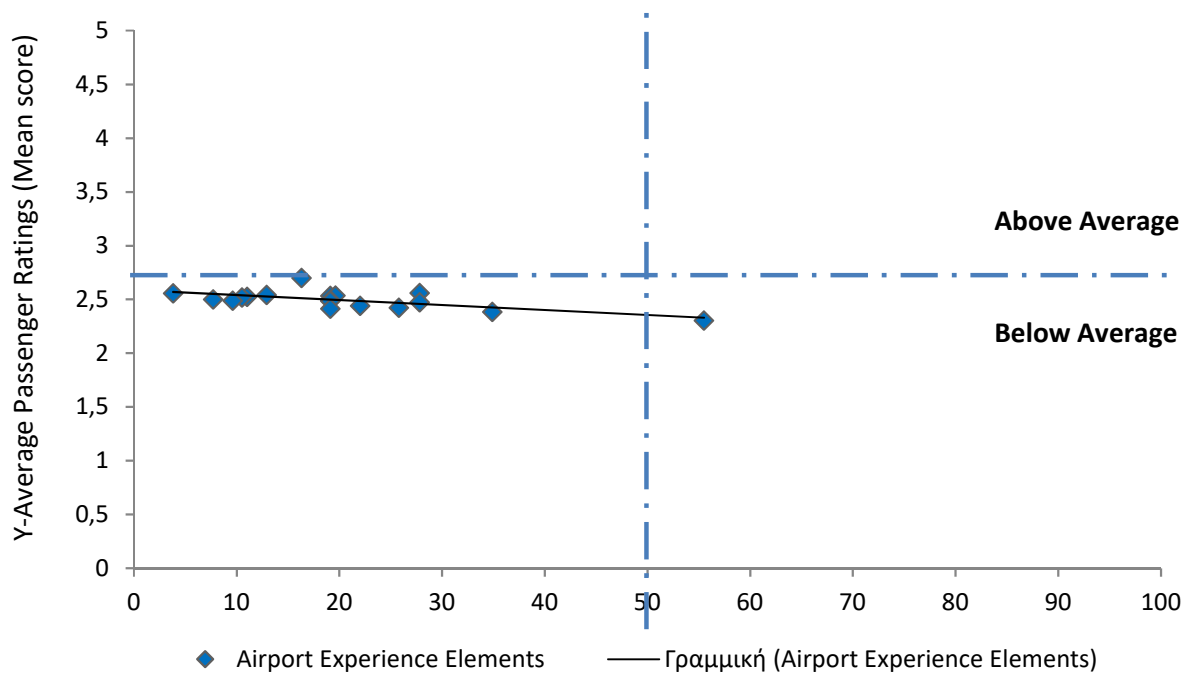
The results confirm that the airport personnel have a positive significant influence on respondents' overall impression with airport experience elements ($\beta=0.155$, $p<0.001$; $t\text{-value}=4.233$).

In conclusion, it is confirmed the airport services and facilities dimension has the most significant effect on respondents' overall airport experience elements ($\beta=0.456$) followed by airport access procedures ($\beta=0.235$), the airport environment ($\beta=0.182$) and finally the airport personnel ($\beta=0.155$).

5.5 Airport Experience Ratings and Perception of Importance

The following scatter diagram (Figure 9) shows that the level of the airport experience is below average with respect to the importance of various airport elements. Results confirm that the airport is not delighting passengers on the most important drivers of satisfaction. The most significant defect is apparent in the "Airport customer care" were it is ranked as the most important element of the airport experience and has a below average passenger rating (2.30) (see Table 12).

Figure 9: Passenger airport experience ratings vs. perception of importance



X-Passenger perception of importance (%)

Note: -Average Passenger ratings (1=Excellent -5=Very Poor)

Table 12: Top airport experience elements by passenger ratings

Ranking	Dimension	Airport Experience Element	Importance (%)	Average passenger rating (mean score)
1	AP	Airport customer care	55.5	2.30
2	AE	Airport ambience	34.9	2.38
3	AE	Airport design	30	2.57
4	AS	Dining areas	27.8	2.45
5	AP	Airport staff efficiency	25.8	2.42

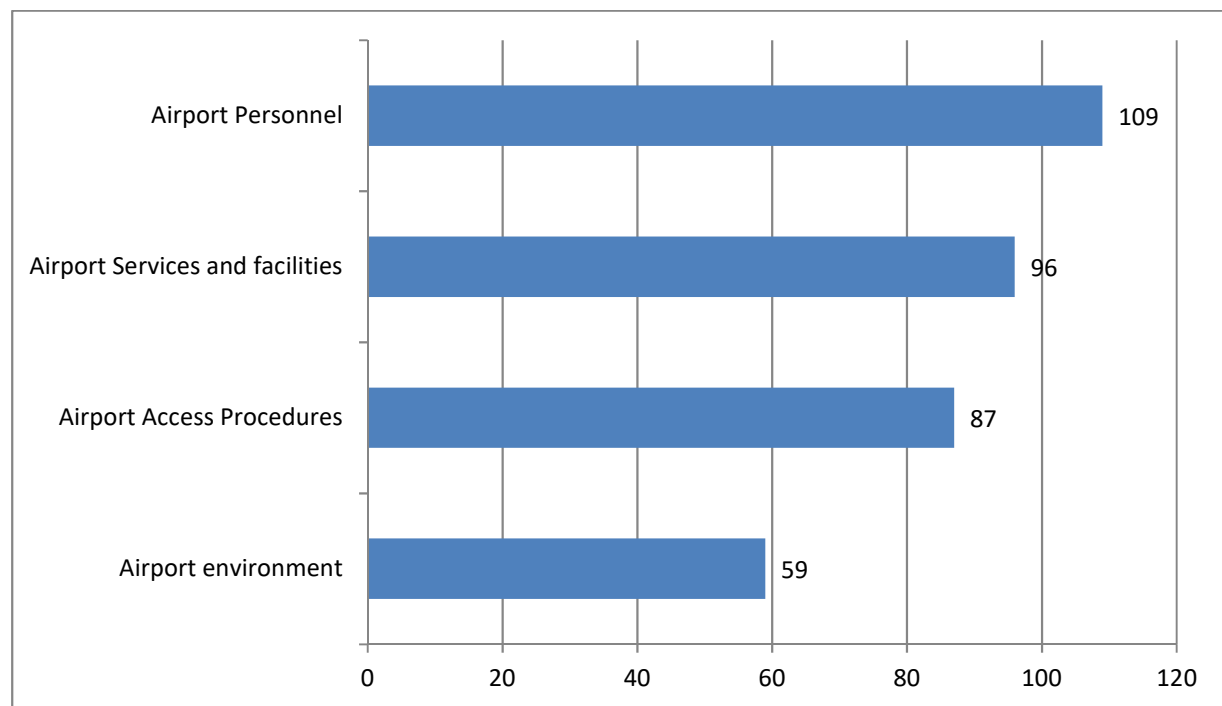
Note: AP=Airport personnel – AE=Airport Environment- AA=Airport access procedures- AS=Airport services and facilities

5.6 Content Analysis Results

Open-ended questionnaire responses were gathered with an aim to identify the airport experience dimensions in need of further improvements according to passengers' perspectives. The responses were coded after extracting the negative sentiments expressed in each reply. 'Aquad v.7' was used to perform a quantitative content analysis of all gathered

replies with an aim to categorize all mentioned negative elements according to the predefined airport experience elements. The results are shown in the following diagram (Figure 10).

Figure 10: Dimensions of the airport experience in need of further improvements (frequencies)



5.7 Overview of Open-ended Responses

Most of the responses (64.9%) were criticizing the airport personnel of CIA. Respondents were mainly complaining about a number of airport workers (hustlers) who try to exploit passengers by offering unneeded services or assistance in many areas of the airport access procedures. The airport customer care is underperforming according to surveyed passengers. Respondents were hoping to find a wider range of multilingual airport staff at the airport to provide them with necessary assistance. Regarding the airport services and facilities (57.1%), respondents were mainly complaining about the ground transportation. Airport taxi drivers are scamming passengers by overcharging their fares. Another area in need of further improvement is the dining areas. Passengers need a more diverse dining experience (various types of international cuisines).

The retail shops were described by the majority as overpriced and offering a moderate array of products. The Wi-Fi connectivity is weak and needs further enhancements. The restrooms are well-maintained, but still workers are continuously trying to exploit passengers in this area. Business lounges are not distinctive by any means, compared to world standards, and need more renovations to meet passenger expectations. The luggage claim is seen as slow and frustrating due to baggage delays. In times of congestion, passengers realize that the airport needs to increase its seating capacity, especially at boarding areas.

The airport access procedures (51.8%) dimension is related to the queuing time. Respondents think that there are too many security screenings at the airport. The elapsed time of the airport procedures should be minimized according to respondents. As for the airport environment (35.1%), it is clear that new terminals (T2 and T3) appear ultra-modern and well-designed after recent innovations. However, the overall ambience of the airport is negative. More specifically, respondents describe CIA as chaotic, overcrowded, unorganized and noisy. Airport ground staff needs to make better effort in organizing queue lines and passenger movements through the airport. Respondents see the CIA experience as an average one. More amenities are needed to provide passengers with a more joyful and exciting experience.

6. CONCLUSIONS

The research proved that socio-demographic profiles of respondents (gender-age-frequency of air travel-education-occupation fields) have an influence on their overall impression of the airport experience. The research also concluded that the four main dimensions (the airport's services and facilities, access and procedures, environment and personnel) have a positive significant influence on passengers' overall airport experience. The research confirmed that services and facilities are the most significant dimension of the airport experience. Regarding elements of the airport passenger experience, the top five are (in order of importance): airport customer care, airport ambience, airport design, dining areas, and airport staff efficiency (it is important to note that dimensions and elements can vary in importance among different airports and various survey groups). The research confirmed that CIA is not exceling in any of these elements. CIA provides its passengers with a below average customer experience (CX).

Many of the areas in need of further improvement at CIA are linked to the human input. The irregularity of passenger movement in the airport and the problems associated with the

prolonged queuing times and the hustling workers are all considered managerial issues related to the airport staff performance. It is clear that customer care has become the cornerstone of any differentiation strategy, given the homogeneity of the air transport industry.

The results also assure the importance of the airport ambience and design over many other access and service-related elements. An airport that has an ambience that compiles positive characteristics (e.g. sense of warmth- excitement-enjoyment) along with a unique design, an array of outstanding services and a caring staff can easily create a highly positive passenger experience.

7. RECOMMENDATIONS

Managers trying to create a delightful passenger experience should focus on the main airport dimensions (services and facilities, access procedures, environment, personnel) depending on the level of ascribed significance. Passengers are now accustomed to overcrowded airports and strict immigration and security procedures due to the many security risks facing the air transport industry nowadays. Thus, the way to delight passengers at airports will be to provide unconventional high quality services, a quiet and cheering environment and an efficient customer care staff.

- Airport managers must take into account the various socio-demographic characteristics of passengers (gender- age-education-frequency of air travel-occupation) in order to design an impressive customer experience. A unique customer experience must take into account the various passenger profiles with aim to create an airport experience that satisfies multiple segments.
- Managers at CIA seeking to improve the below average overall passenger experience must think beyond the conventional 'touch points'/'moments of truth' concepts. Passengers seek a delightful airport experience that provides a unique ambience, without neglecting the importance of other fundamental procedural elements (e.g. check-in - baggage claim) and basic services (e.g. retail shops-dining places). An above average experience is related to passenger's higher-order needs and wants (beyond their basic needs). The airport must offer: innovative, educational and relaxing activities; distinguished services and amenities; unique shopping and dining areas; special entertaining events.
- Results of the content analysis showed that CIA needs to primary invest its resources in the airport personnel development in areas of customer care and performance

efficiency. A change in the customer care culture can surely enhance passengers' impressions and sentiments towards the overall experience.

- Moderators at CIA must focus on prohibiting any unnecessary contacts between workers and passengers throughout their journey in order to prevent negative interactions between both parties. More effort is needed in organizing queue lines and passenger movements throughout the airport.
- Investing into the 'smart airport' concept must be prioritized by the CIA management with an aim to provide a faster and more efficient passenger experience. The provision of self-service technologies at check-in and immigration check points is not enough. Airports must lure passengers to use automated services by promoting the ease, speed and efficiency of such technology-driven services. The airport technical staff and customer service personnel can play an effective role in this area.
- CIA managers should pay special attention to well established customer review sites (e.g. Sktrax) in order analyze passengers' impression and sentiments towards the airport experience. A content analysis of such online data can help draw a big picture of passengers' aspirations, sentiments and impressions towards the overall airport experience.

8. FUTURE RESEARCH

It is recommended that future research projects focus on conducting comparative studies between various airport experiences around the world. More research is needed with the aim explore the cultural uniqueness of passenger impressions and the characteristics of various successful innovations in many dimensions of the airport experience.

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ENHANCING AIRLINE PASSENGERS' SATISFACTION THROUGH SERVICE QUALITY: THE IMPORTANCE OF THE "HUMAN FACTOR"

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ABSTRACT

The aim of this paper is to investigate the effect of service quality dimensions to overall satisfaction in the Greek airline industry. Data were collected through field research among 300 respondents, who have used a specific airline industry recently. Data analysis using structural equation modelling suggests that the performance of in-flight attendants and ground-service personnel are important factors in determining perceptions of service quality and overall satisfaction, together with reliability and satisfactory pricing arrangements. These "human factors" are shown to play a role both directly and indirectly in determining customer satisfaction in the airline context.

Key words: Customer Satisfaction, Airline Service Quality, Greek Airline Industry, Structural Equation Modeling (SEM).

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1. INTRODUCTION

The highly competitive environment of the contemporary airline industry means that there is an ongoing need for airlines to achieve customer satisfaction through service quality. As An and Noh (2009: 294) observe "... the fact that the airline industry traditionally has a high level of competition, makes airline companies strive to find ways to improve their service quality to gain competitive advantage". In a similar way, Bogicevic et al. (2013: 3) claimed that "considering the complexity of the airport industry service palette, it is important to identify which air travel factors are distractors and which factors are enhancers of passenger satisfaction".

The importance of customer satisfaction and service quality in this industry has been widely recognised. For example, Chen (2008) contends that the key to sustainable development in a climate of continuous change and uncertainty in this industry is the ability to satisfy customers through high-quality service. Similarly, Lapré & Scudder (2004) argue that airlines expand market share (both regionally and globally) primarily through consumer satisfaction, while Ostrowski et al. (1993) claim that competitive pressure is the main reason for the delivery of high-quality service among air carriers. Morash and Ozment (1994) argue that the provision of high-quality service to airline passengers is the key to customer patronage, market share, and (ultimately) profitability. In a similar vein, the relationship between service quality and market share in the airline industry was the key element of the model proposed by Suzuki et al. (2001).

Customer satisfaction and service quality are both functions of a comparison between customers' prior expectations of the service they will receive and their subsequent perceptions of the actual service performance (Berry et al., 1988). This general proposition has been confirmed in the case of airline passengers, whose perceptions of service quality have been shown to be largely based on their perceptions of the services offered compared with the ideal service level (Liou and Tzeng, 2007; Robledo, 2001). In a related study, Saha and Theingi (2009) confirm that positive relationships exist among the constructs of service quality, satisfaction, and behavioural intentions in passengers of low-cost carriers.

In accordance with these findings, Chang and Yeh (2002) contend that service quality, as perceived by passengers, is the most important factor in establishing an airline's competitive advantage. Therefore, Chiu and Lin (2004) argue that airlines must attempt to understand what passengers really need, and then deliver the appropriate level of service accordingly. In a similar vein, Pakdil and Aydin (2007) argue that a new structure of airline service-quality

dimensions might be required if airlines are to understand their customers' needs and expectations, and then deliver the most convenient service to meet those needs. In this regard, Wirtz et al. (2008) contend that appropriate human-resources management practices are required if an airline is to achieve a sustainable competitive advantage through the delivery of consistent service excellence.

Against this background, the purpose of the present study is to examine the relationship between overall satisfaction and service-quality dimensions in an airline service context—with emphasis on the role of “human factors” (i.e. staff performance) in this relationship. As Olorunniwo et al. (2006) claimed, “service managers are recommended to devise operations and marketing strategies that focus on the dominant SERVQUAL dimensions to enhance satisfaction”. Similarly, Brodie, Whittome and Brush (2009) suggest that “when a problem is dealt with effectively, there is a strong impact on customer satisfaction and subsequently customer loyalty”. The remainder of the paper is organised as follows. The next section presents a review of the relevant literature on studies of airline service quality. The conceptual framework is then presented along with the methodology of the empirical study. The results of the study are then presented. The paper ends with a summary of the major conclusions, managerial implications, limitations, and suggestions for further research.

2. LITERATURE REVIEW

2.1 Measuring Airline Service Quality with the Use of the SERVQUAL-based Models

Although a wide variety of service-quality dimensions have been used by scholars to measure service quality in airlines, most studies have utilised modifications of the SERVQUAL model (Parasuraman et al., 1988). The original SERVQUAL instrument consisted of five dimensions ('tangibles', 'reliability', 'responsiveness', 'assurance', and 'empathy'), but Grönroos (1988, 1990, 2001) subsequently suggested that 'recovery' should be added as a sixth dimension. In a later contribution, Kang and James (2004) contend that service quality should be measured in three dimensions: (i) functional quality (as described by SERVQUAL); (ii) technical quality (referring to the outcome); and (iii) the company's corporate image (which was acknowledged as a dimension that is more difficult to define and measure).

The importance of SERVQUAL-based models in studies of airline service quality and/or passengers' satisfaction is apparent from the numerous articles that have utilised SERVQUAL-derived dimensions: scholars generally agree that the higher the customer-perceived service quality is, the more satisfied customers should feel. As Chen and Chang (2005, qtd. in:

Bogicevic, 2013: 5) noted "in air travel sector service quality has been examined independently in airport service setting and in-flight service setting". Tsaur et al. (2002) developed a five-dimensional instrument for measuring airline service quality based on the SERVQUAL dimensions of 'tangibility', 'reliability', 'responsiveness', 'assurance', and 'empathy'; among the 15 criteria within these five dimensions, the most important were 'courtesy of attendants', 'safety', 'comfort', 'cleanliness', and 'responsiveness of attendants'. Park et al. (2005) and Park (2007) examined perceptions of 11 key factors of airline service quality that influenced customers' buying behaviour; although different segments of air passengers emphasised in different factors, the more prominent were 'in-flight service', 'airport service', 'employee service', 'perceived price', 'passenger satisfaction', and 'overall service quality'. Gilbert and Wong's (2003) model included 26 attributes of airline service quality, which were distributed among the dimensions of 'reliability', 'assurance', 'facilities', 'employees', 'flight patterns', 'customisation', and 'responsiveness'; according to their findings, the most important attributes of airline service quality were: 'being prompt/responsive', 'willing to help', and 'having a courteous attitude'.

Liou and Tzeng (2007) develop a non-additive model for the evaluation of airline service quality to overcome their presumption of the interdependence of service-quality dimensions. They concluded that 'employee's service' was the important dimension in the evaluation of service quality, and that 'complaint handling' was the most important attribute within that dimension. Pakdil and Aydin (2007), who measure airline service quality using SERVQUAL scores weighted by loadings derived from factor analysis, report that 'responsiveness' was the most important dimension of airline service quality, with the most important items in this dimension being related to employee actions: 'speed of handling requests', 'response to unexpected situations', and 'willingness to help'. Kiatcharoenpol and Lasirihongthong (2006), who used the SERVQUAL model to assess the antecedents to airline service quality, found that 'culture change', 'commitment of management', and 'employee involvement' all increased airline customer satisfaction and the competitiveness of the airline company. An and Noh (2009), who used a research model mainly based on the SERVQUAL instrument to investigate the impact of in-flight service quality on airline customer satisfaction and loyalty, conclude that 'responsiveness' and 'assurance' were important factors of in-flight service quality for both 'prestige' class seats and 'economy' class seats. Xiaoli et al. (2006) also found that 'responsiveness' (as well as 'pricing structure') was an important determinant of perceived service quality, customer satisfaction, and customer loyalty. Nejati et al. (2009: 247), who used a questionnaire based on the SERVQUAL model, found that the most important factors

in airline service quality were "...flight safety, good appearance of flight crew, and offering highest possible quality services to customers 24 hours a day".

2.2 The Role of "Human Factor", Price and Reliability in Airline Service Quality

It is obvious from the first part of the literature review that many SERVQUAL variables pertaining to the "human factor" have already been analysed. "Employees who are perceived as reliable, responsive, and caring", or "as friends, as they have the ability and desire to provide excellent service" (Parasuraman, Zeithaml & Berry, 1988) "friendliness and helpfulness of the cabin crew" (Zins, 2001), "courtesy of attendants" or "responsiveness of attendants" (Tsaur et al., 2002), "role of employees" (Gilbert & Wong, 2003), "quality customer care" (Bamford & Xystouri, 2005) "employee involvement" (Kiatcharoenpol & Lasirihongthong, 2006), "employee's service" (Park, 2007; Liou & Tzeng, 2007), "commercial friendship" (Han et al., 2008), and "employee trust" or "productive employees" (Brodie, Whittome and Brush, 2009) have been found significant and important in many studies. Furthermore, the importance of the role of employees was demonstrated by Abdlla et al. (2007), who used a SERVQUAL model to demonstrate that flight attendants played a key role in the relationship between tourists' needs/expectations and their perceptions of service quality. Gursoy et al. (2005) also shows that the role of employees (especially in handling customer complaints) was an important service-quality dimension in their 15-attribute model of airline service quality. Similarly, Babbar and Koufteros (2008) find that 'personal touch' (constituted by individual attention, helpfulness, courtesy, and promptness) was a significant determinant of airline service quality and customer satisfaction. Ekinici and Dawes (2009) also concluded that higher levels of consumer satisfaction were associated with enhanced customer-employee interactions because of positive personal characteristics among frontline employees.

Regarding the price factor, it has already been noted that several authors (Park et al., 2005; Park, 2007; Xiaoli et al., 2006) have reported that the price structure is an important factor in customer satisfaction among airline customers. More specifically, Balcombe et al. (2009) concluded that passengers are willing to pay a relatively large amount for enhanced service quality – especially in-flight service provision and level of comfort – when deciding to purchase a flight. Myungsook & Yonghwi (2009) investigated the impact of the in-flight service quality on airline customer satisfaction and loyalty, by analyzing data from passengers of two classes: prestige (business) and economy. Furthermore, Han, Kwornik & Wang (2008) investigated customers' judgment about the trade-off between benefits and costs, by measuring

customers' overall judgment of "worth what paid for". Finally, reliability plays an important role to airline service quality and customer satisfaction, as a basic variable of the SERVQUAL models (Gilbert & Wong, 2003; Park, 2007; Liou & Tzeng, 2007; Pakdil & Aydin, 2007; An and Noh, 2009).

It is clear from the above findings that airline service quality is a multidimensional construct. As An and Noh (2009: 296) noted, service quality is somewhat more complex in airlines than in other service industries because it "... involves a variety of processes by many entities such as airport authority, catering companies etc."

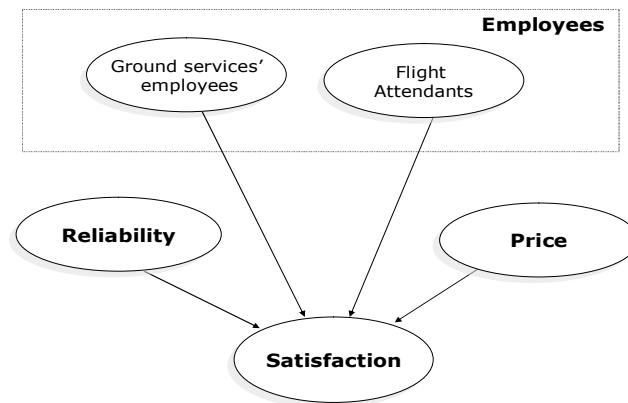
Despite abundance of the related research, what this paper adds to extant literature is that it addresses this complexity by investigating the construct of airline service quality, in terms of certain variables that reflect the characteristics of the Greek airline industry. More specifically, the present study examines both: (i) the "human factor" (both ground-service personnel and in-flight service attendants); and (ii) the more prominent dimensions of airline quality identified in the literature review – such as reliability and price.

3. THE CONCEPTUAL FRAMEWORK

Figure 1 shows the research model for the present study, which was based on: (i) the main findings of the literature review described above; and (ii) in-depth interviews conducted with both airline passengers and employees in Greece. Using this model, an empirical study was conducted to investigate the relationships among certain service-quality dimensions and their effect on customer satisfaction in the airline industry in Greece. As shown in Figure 1, the dependent variable included airline customer satisfaction, representing the level of their overall satisfaction within the specific airline, while the main independent variables included:

- *employees*: representing the "human factor" in airline service quality (including both ground-services personnel and in-flight service attendants);
- *price*: representing an increasingly important factor in the airline industry during the past decade as so-called 'low-cost' airlines have become more common; and
- *reliability*: representing the most important non-tangible factor of airline service quality identified in the literature review.

Figure 1: The model



4. METHODOLOGY

4.1 Data Collection and Sample

As mentioned earlier, the first part of our study involved in-depth interviews with 10 respondents, both airline passengers and employees. The content of the initial questionnaire was then pre-tested on 15 respondents - pilot testing - leading to a few minor alterations to improve our instrument. The revised questionnaire was finally administered to 300 respondents in Athens International Airport and Chios Airport from 1.05.2016 to 31.06.2016. The target population was adult men and women, of various ages, who were passengers of local Greek flights. The combination of such demographic criteria as sex and age are commonly used in the most airline customer satisfaction surveys mentioned in the literature review.

Table 1 summarises the demographic characteristics of the respondents who completed the questionnaire. A sample of 300 is considered adequate for performing data analysis using structural equation modelling (SEM) (Hair et al., 1998; Hoe, 1998).

Table 1: Respondents' profile

	Sample Demographics (%)
<i>Gender</i>	
<i>Male</i>	51.7
<i>Female</i>	48.3
<i>Age</i>	
<i>Up to 24</i>	40.0
<i>25 – 30</i>	18.0
<i>31 – 36</i>	11.3
<i>37 – 42</i>	10.0
<i>43 – 49</i>	9.0
<i>50 – 56</i>	5.0
<i>57+</i>	6.7
<i>Education</i>	
<i>Up to secondary education</i>	21.3
<i>Secondary education</i>	26.4
<i>University</i>	52.0
<i>Postgraduate</i>	13.3
<i>Monthly family income (€)</i>	
<i>Up to 500</i>	12.3
<i>501 – 1,000</i>	19.7
<i>1,001 -1,500</i>	15.3
<i>1,501 -2,000</i>	12.0
<i>2,001 -2,500</i>	13.0
<i>2,501 -3,000</i>	8.7
<i>More than 3,000</i>	19.0

4.2 Measurement Scales

The scales used in previous studies presented in the literature review along with the consumers' views, as these were expressed in the qualitative research, provided the basis for developing the measurement scales for the model variables. Following this, 'flight attendants' (FA) and 'ground services employees' (GSE), as two new latent variables, were measured using five and four indicators respectively. The items used in the operationalisation of these

variables can be found in Table 2 (in the 'Results' section, below). For the measurement of "price", a new scale related to "price satisfaction" (Matzler, Wurtele & Renzl, 2006) had to be established. Using in-depth interviews as a basis, "price satisfaction" was measured as a latent model variable, including three items. In addition, "reliability", which represented the fourth latent variable of the model, was measured with four indicators (see Table 2). Finally, for the measurement of consumer "satisfaction" (S) three indicators were used.

In summarizing, we could therefore say that to measure service quality, some items of SERVQUAL were modified, added or deleted when developing the survey instrument. Therefore, the final service quality was identified to four (4) dimensions (flight attendants, ground services employees, price satisfaction, and reliability), consisting of 16 statements, instead of five dimensions. Respondents were presented with these statements and were asked to express their agreement/disagreement with them, using a seven-point Likert-type scale (1 = 'strongly disagree' to 7 = 'strongly agree').

5. RESULTS

The descriptive statistics generated from SPSS analysis are shown in Table 2. In general, the results indicate that respondents felt quite satisfied with the services provided – as shown by the fact that the mean scores of all indicators were above average (3.50), rating from 4.07 for "a fair price for the airline ticket" to 5.49 for "courteous airline's flight attendants". As expected, all the airline service quality variables correlated with airline customer satisfaction. More specifically, flight attendants and reliability are the variables with the higher average scores (5.49 and 5.22 respectively) leading thus to most satisfied respondents. Cronbach's alpha coefficient was calculated to assess the reliability of the measurement scales. The results revealed that all scales were reliable (FA = 0.8768; GSE = 0.8795; PS = 0.8436; R = 0.7777; S = 0.7871). To assess goodness of fit, SEM was performed using Amos 20.0 software. The results, which are presented in Table 3, show that all the important indicators of model fit, as suggested by Hoyle (1995), had acceptable values. The final model (Figure 2) was thus acceptable. Several relationships were found to be statistically significant in the proposed model:

- FA had a direct positive effect on S; moreover, FA had indirect effects on S through GSE, R, and PS;
- GSE had a direct positive effect on S, and an indirect effect on S through PS; and

- R and PS both had direct effects on S.

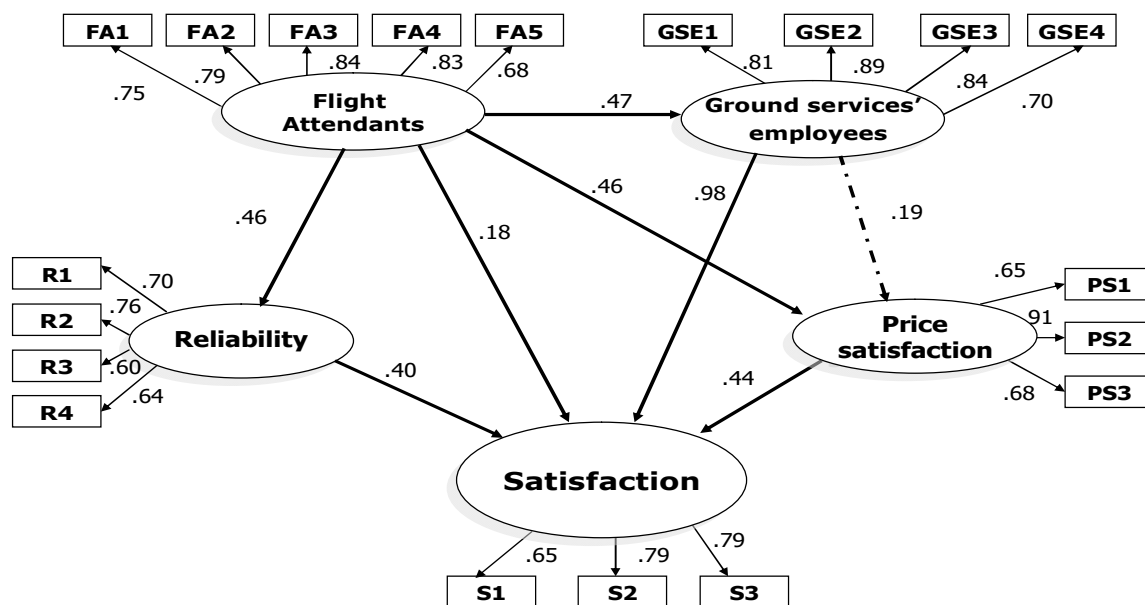
The only relationship in the final model that was not statistically significant was that between GSE and PS. The implications of these findings are discussed below.

Table 2: Descriptive statistics

	Mean <i>(values: 0-7)</i>	Variance
Flight attendants (FA)		
FA1: This airline's flight attendants understand customers' needs	5.10	1.344
FA2: This airline's flight attendants are courteous	5.49	1.485
FA3: This airline's flight attendants checking with passengers from time to time if they need anything	4.90	1.403
FA4: This airline's flight attendants are always willing to provide any information related to the flight	5.12	1.368
FA5: This airline's flight attendants can deal with an extraordinary situation during the flight	4.82	1.383
Ground services employees (GSE)		
GSE1: This airline's ground employees provide individual attention to customers	4.38	1.468
GSE2: This airline's ground employees give me prompt service	4.26	1.532
GSE3: This airline's ground employees understand what the specific needs of their passengers are	4.24	1.494
GSE4: This airline's ground employees are helpful when flights are delayed	4.45	1.582
Price satisfaction (PS)		
PS1: The price of the ticket was better than other airlines' ones	4.23	1.639
PS2: The price of the ticket is according to my expectations	4.13	1.568
PS3: I paid a fair price for the airline ticket	4.07	1.541
Reliability (R)		
R1: This airline makes me feel safe	5.22	1.272
R2: This airline provides good ground and in-flight services consistently	5.03	1.311
R3: The departure and arrival hours are always accurate	4.59	1.667
R4: This airlines' aircrafts are modern with clean and comfortable interiors and seats	4.86	1.458
Satisfaction (S)		
S1: My overall satisfaction with this airline is very high	4.72	1.298
S2: I rank this airline's service quality as being very high	4.36	1.533
S3: I intend to recommend this airline to friends and relatives	4.96	1.482

Table 3: Model fit indices

Indices	Index value	Suggested index value
χ^2	251.410	
p.	0.000	
df.	140	
Relative χ^2	1.796	< 3.00
GFI (Goodness of Fit)	0.924	> 0.90
AGFI (Adjusted Goodness of Fit)	0.897	> 0.90
TLI (Tucker Lewis Index)	0.956	> 0.90
IFI (Incremental Fit Index)	0.964	> 0.90
CFI (Comparative Fit Index)	0.964	> 0.90
RMSEA	0.052	< 0.08

Figure 2: The final model

6. CONCLUSIONS, IMPLICATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

6.1 Main Conclusions

Although, there is an abundance of studies on airline service quality and customer satisfaction, this study has shown that the "human factor" is an important aspect of service quality in

airlines. More specifically, the performance of flight attendants was associated not only with overall satisfaction, but also with the performance of ground-service personnel, reliability, and price satisfaction. The implication is that reliability includes the consistent provision of good in-flight services. Moreover, price satisfaction was associated with customers' expectations about service quality, flight attendants, and ground-service employees, all of which represent significant factors in customers' overall satisfaction with the service provided. In addition, the performance of ground-service personnel was related to the performance of flight attendants, with both being key elements in the service quality provided by the airline. These relationships confirm the importance of flight attendants and ground-service personnel in producing overall satisfaction in the airline industry. As Brodie, Whittome and Brush (2009) conclude "customer satisfaction is generated by satisfied, loyal and productive employees", as their overall findings confirmed the theory that a reliable "personal touch" service is what the customers perceived as good service quality. In addition to the "human factor", the variables of reliability and price satisfaction played important roles in determining customers' overall satisfaction with airline service.

6.2 Managerial Implications

The above findings have implications for airline managers and marketers. According to Mittal and Frennea (2010: 2), "superior customer satisfaction provides a clear strategic advantage and an inimitable resource for a firm – particularly in today's complex and often uncertain markets". In the uncertain contemporary business environment that they face, airline managers require a clear understanding of the requirements of their customers, in terms of the products and services that provide superior airline service quality. As Bogicevic (2013: 6) concluded "even though we assume that customer satisfaction is anticipated because of successful service outcome, the nature of drivers for customer satisfaction is far more complex". This study, bridge the gap between theory and practice in the Greek airline industry, as it has shown that important determinants of this service quality include the performance of flight attendants and ground-services personnel, together with reliability and satisfactory pricing arrangements. These factors should be given priority by managers - given that airline service quality is a multidimensional concept that incorporates many aspects of the wide variety of services offered by an airline. As Olorunniwo et al. (2006: 72) claimed "the message is clear in that customers are more likely to come back, recommend the service, and remain loyal to the service provider if they are satisfied with the service offerings". In a similar way, Bamford and Xystouri (2005: 38) suggest that "it is important for businesses to understand that it is not necessarily the initial service failure or incident which leads to dissatisfaction, but

the organization's subsequent lack of response to the situation. For this reason, a recovery program becomes crucial in maintaining consumer satisfaction and loyalty".

In addition, airline companies, given their size, should face current cost structures and fierce price competition, especially in the overcrowded economy cabins. According to An & Noh (2009), airline companies' in-flight service should have different delivery strategies based on the customer seat class. They also claim that generally "people with higher income and positions in their organizations tend to experience higher quality service and thus are more sensitive to the evaluation of service quality" (An & Noh, 2009: 305). Consequently, the recognition of service quality can be different among those with different income and professional status. Therefore, airline companies need to differentiate their strategies for different type of customers, by emphasizing in the appropriate factors, which would provide them with high standard of service quality and satisfaction.

6.3 Limitations and Suggestions for Further Research

One limitation of this study is that the research was conducted in only two airports of Greece. Because the specific characteristics of the Greek airline industry and customers could influence the results of the analysis, care should therefore be exercised in generalising from the present findings. As Bogicevic (2013:4) concluded, "addressing the limited generalizability of previous studies' results, there is a need for understanding which air travel factors are essentials (dissatisfiers) and which factors serve as enhancers of passenger satisfaction (satisfiers) in a global context". In addition, non-probability sampling was used, which made it impossible to estimate sampling error.

In view of these research sample limitations, it would be useful to analyse data from a larger sample, incorporating a wider range of geographical areas and other airlines. It would be interesting to investigate the importance of the "human factor" in determining overall satisfaction in other countries with different population characteristics. In addition, factors such as inbound or outbound travellers, or what was the purpose of their trip, could potentially impact travellers' expectation levels about service quality and total satisfaction with the airline.

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UNDERSTANDING AIRLINE BRAND EQUITY DRIVERS: LESSONS FROM A MULTIPLE CASE STUDY

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ABSTRACT

There is increasing consumer involvement and hence, investor interest in the airlines industry, as far as emerging economies is concerned. A study of the literature by the authors did not produce any research paper on the process drivers of brand equity in the context of airlines. Therefore, the present study makes an attempt to address this gap. The primary research question is: What are the driving factors for building brand equity in the case of airline services? This paper uses a "two-case" multiple-case design employing theoretical replication. The cases are based on two Indian organizations, Indigo Airlines and Go Air. Both these businesses are similar in many aspects but have achieved very contrasting outcomes. The primary research question is broken down into following two secondary research questions. How is Indigo Airlines building its brand? How is Go Air building its brand? Data collection involved use of documents, archives, observations, participant-observations, and surveys. Data analysis involved conducting cross-case analysis. The findings have been used to develop a conceptual framework for building brand equity in airlines.

Keywords: Branding, Airlines, Services, Brand Equity, India, Case Study Research

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1. INTRODUCTION

The commercial importance of services has been growing constantly over the years. Further, branding has been discussed as “the cornerstone of services marketing for the twenty-first century” (Berry, 2000, p. 129). Consequently, research aimed towards studying the branding of services has also gained impetus; and the question of whether services should follow the same principles of brand building as manufactured goods has been raised time and again (Szmigin & O’Loughlin, 2007). Considered as one of the most intangible service sectors, the aviation industry contributes considerably to the global economy (Kee Mun & Ghazali, 2011). This paper attempts to understand the intricacies of airline branding, in the specific context of an emerging economy like India.

2. LITERATURE REVIEW

In this section, scholarly literature pertaining to studies on branding, brand equity, and branding in airlines domain is reviewed. They are presented in the following sub-sections.

2.1 Branding

As per American Marketing Association (AMA), a brand can be defined as a “name, term, sign, symbol, or design, or a combination of them, intended to identify the goods or services of one seller or group of sellers and to differentiate them from those of competition” (Keller, 1993, p. 3). According to Charlene (2007), the concept of branding is considered to be most vital for marketing. Branding contributes to building a base of loyal customers motivated to purchase the same goods and services (Dibb & Simkin, 1993). Moorthi (2002) discusses the steps for effective branding. According to Xiang and Petrick (2008), the primary objective of branding is to build an attractive image in the minds of the consumers which is an antecedent for gaining his or her trust and loyalty.

Due to the unique characteristics of services (i.e., intangibility, heterogeneity, inseparability, perishability), branding has been found to be more useful to services than goods (de Charnatony & McDonald, 1998; Kapferer, 2004). A strong service brand helps in visualizing the invisible product and increases consumer trust (Berry, 2000) by reducing perceived risk (Chang, Hsu, & Chung, 2008). Furthermore, Cobb-Walgren, Ruble, & Donthu (1995) and Chen & Chang (2008), found that a service brand with higher brand equity produced significantly higher brand preference and purchase intention. Interestingly, Vargo & Lusch (2004a; 2004b)

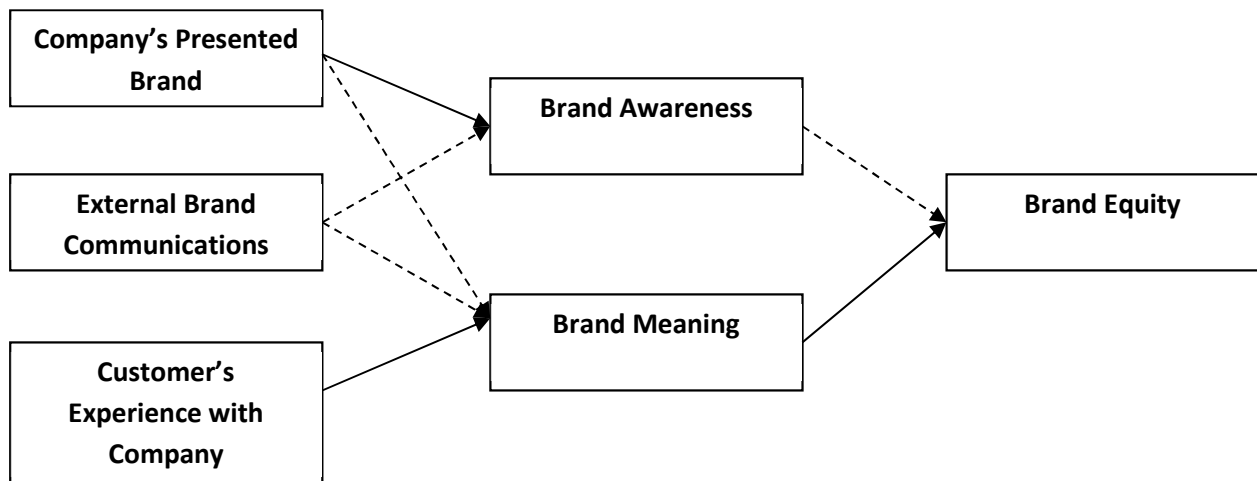
discussed how the principles of services are equally applicable to goods. Therefore, the concepts of service branding should also be useful to marketers of physical goods. Even, Berry (2000, p. 130) mentioned that his proposed service brand equity model “differs in degree, not kind, from a packaged-goods branding model.”

2.2 Brand Equity

Brand equity, defined simply, is the value addition (or value destruction) that a brand provides to an, otherwise, unnamed or fictitiously named version of the product or service (Charlene, 2007). According to Keller (1993, p. 60), customer-based brand equity (as opposed to financial-based brand equity) is defined as “the differential effect that brand awareness and brand meaning combined has on consumer response to the marketing of that brand.”

There are several well accepted brand equity frameworks (e.g., Aaker, 1991; Keller, 1998). However, the brand equity framework proposed by Berry (2000) stands out since it singularly focuses on the service sector. Further, this model was empirically validated by Fung So and King (2010).

Figure 1: Service branding model (Berry, 2000)



The bold lines in the model, depicted in figure 1, indicate an impact which is direct and primary whereas the dotted lines indicate a secondary impact. There are three key components viz. ‘presented brand’, ‘external brand communications’, and ‘customer’s experience with company’. According to Berry (2000), these three components contribute, directly or indirectly, to brand awareness and brand meaning, which combined together constitute brand knowledge as per Keller (1993).

The company's presented brand as defined by Berry is the company's controlled communications such as advertising, packaging, and so on. External brand communications refer to the uncontrolled understanding that the customers derive about the organization. It can be through word of mouth which is increasingly becoming an independent source of seeking opinions or through publicity which is not in the full control of the organization. Customer experience as stated above is the firsthand encounter of the customer with the brand and its services. Brand awareness is the familiarity of the customers with the brand and brand meaning refers to the dominant perception about the company that the customer holds at top of the mind. Brand equity is the knowledge of the brand that resides in the minds of consumers. Berry basically suggests that customer's experience with the company is a dominant contributor to brand meaning, which is a dominant contributor to brand equity.

Further, a study by Bick (2009) suggests that there is a positive relationship between brand equity and shareholder value. In fact, brands can account upto 25% of a company's market value (Bick, 2009). According to another study, brand equity can lead to brand profitability and brand sales volume (Baldauf & Cravens, 2003). Another study suggests that brand equity has a positive impact on customer acquisition, retention, and profitability (Stahl, Heitmann, Lehmann, & Neslin, 2012). Also, Kim, Kim, & An (2003) found, in the context of hotel sector, that a high brand equity can lead to significant increase in revenues.

2.3 Branding Studies of Airlines

Kee Mun and Ghazalo (2011) identified seven dimensions of brand satisfaction in their study of two Malaysian airlines: tangibles, price, core services, reputation, publicity, word of mouth, and employees. A study of brand equity in the case of airlines done by Chen & Tseng in Taiwan (2010) operationalized airline brand equity with four dimension: brand awareness, brand image, perceived quality and brand loyalty. However, the authors did not get any research paper on the process drivers of brand equity in the context of airlines. Given that there is increasing consumer involvement and hence, investor interest in this industry, an understanding of the process drivers of brand equity is essential. Therefore, the present study aims to address this gap.

Also, there is a boom in India so far as air travel is concerned - thanks to low air fares and the recently implemented seventh pay commission and investor-friendly policies (Kulshrestha & Chaturvedi, 2016). As a result, most of the airline brands in India are presently on an expansion spree (Chowdhury, 2016). These airlines will stand to gain by a study that focuses on understanding brand equity drivers of airline services. The present study is also expected

to benefit airlines in other emerging economies in their pursuit of high brand equity development and consequent higher market shares.

3. RESEARCH METHODOLOGY

The following is the research question for the present study based on the gap identified in literature: What are the driving factors for building brand equity in the context of airline services?

The present paper uses case study research method, which is an empirical enquiry to address “how” or “why/ what” questions about any contemporary phenomenon over which the investigator has little or no control (Yin, 2009). The choice of case study research design was made on two grounds: its ability to adequately address the chosen research question as well as the authors’ expertise in using this research design.

In designing the present case research, a multiple case-design was chosen as it is considered as being more robust (Herriott & Firestone, 1983). A multiple case study is analogous to multiple experiments, where the primary logic is replication (Rowley, 2002). According to Yin (2009), in multiple case designs, the cases can be selected in such a way that they either (a) predict similar results (termed literal replication) or (b) predict contrasting results that are explainable (termed theoretical replication). If the results from the multiple cases turn out as predicted, either literally or theoretically, then the findings become more compelling (Rowley, 2002). In situations where resources are scarce (as in the case of the present research), a theoretical replication-based study is far superior to one using literal replication (Yin, 2009). Therefore, it was decided to have a “two-case” multiple-case design employing theoretical replication.

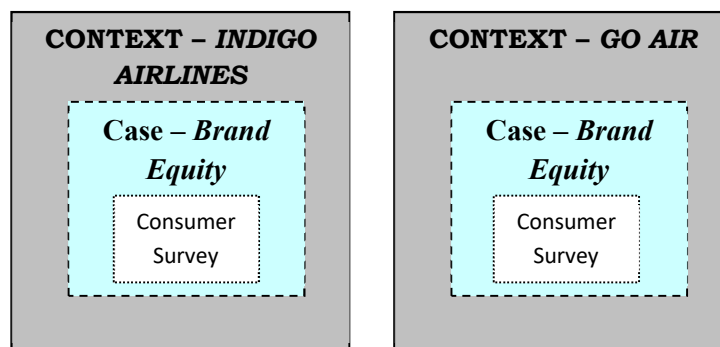
3.1 Case Selection

In order to achieve theoretical replication, two Indian airlines were chosen as case organizations. Both these firms, Indigo Airlines and Go Air, are similar in many aspects but have achieved very contrasting outcomes. Both are budget airlines that started at around the same time (i.e., 2004-05) and use Airbus aircrafts. Even their names are similar. However, Indigo Airlines is the leader in the Indian market with a share of 38% in 2015-16 (Ghosh, 2016). On the other hand, Go Air is a laggard operating at a market share of 8.1% (Shukla, 2016). The broad, primary research question was broken down into the following two secondary research questions.

1. How is Indigo Airlines building its brand?
2. How is Go Air building its brand?

By studying these contrasting cases, the authors aim to distill the key principles of effective branding with respect to airline services. The design discussed above is depicted graphically as follows:

Figure 2: Case study research design



Data collection was done using a variety of sources such as documents (both internal as well as public), archives (from the website of the directorate general of civil aviation), observations and participant-observations by the authors.

Further, cross-case synthesis technique was used to analyze the case data. According to Yin (2009), this technique is most suitable for multiple case studies.

For the embedded consumer surveys, data was collected from Generation Y consumers from different parts of the country. Gen Y individuals are ones born between 1980 and 2000 (Cennamo & Gardner, 2008); (Weingarten, 2009). Further, for most businesses, they represent future profitable customers as their lifetime values are high (de Torcy, Taylor, Delhay, Schickel, & Fulcher, 2005). Hence, they were chosen as respondents for the study. For doing the survey, a sample of 480 Gen Y consumers was recruited. Out of this, only 390 participants completed the survey. Sampling was done using convenience method, with the implication that results cannot be generalized beyond the sample. The survey was administered online using Google Forms.

4. DATA ANALYSIS

The effectiveness of brand building efforts will be measured using two parameters: a) present market share, and b) consumer evaluations. Case selection has been based on market share

as mentioned earlier. This is justified based on the literature review, which suggests that high brand equity can lead to high consumer preferences, thereby leading to high market share.

Berry's service brand equity framework, given its strong service sector emphasis, will be used as the basis for understanding brand building efforts of the case organizations. According to Berry, the broad drivers of service brand equity are: (i) company's presented brand, (ii) external brand communications, and (iii) customer's experience with company.

Further, for understanding company's presented brand, the following three constituents have been identified: brand elements, brand positioning, and advertising. This delineation is based on studies by Keller (1993), Lovelock and Wirtz (2007), and Berry (2000).

According to Keller (1998), brand elements drive brand equity and they could be brand names, logos, characters, slogans, jingles, packages, URLs, and signages. For the present study, the authors have zeroed in on three major brand elements viz. brand name, logo, and slogan. In the present era of smart phone applications, the importance of URLs is declining. Further, none of the chosen airlines have deployed characters and jingles, and hence not applicable. Both airlines use aircrafts made by Airbus Industrie, France and have their logo colours painted all over. Therefore, there was no felt need to assess aircraft packaging separately.

For understanding external brand communications which are not fully in the control of an organization, the following parameters were used: (i) corporate awards, (ii) CSR activities, and (iii) social media activities. This identification is based on work by Lovelock and Wirtz (2007).

Finally, for examining customer's experience with the brand, (i) employee care, (ii) operations design, and (iii) brand promise delivery were the parameters. This selection is based on work done by Lovelock and Wirtz (2007) who argue that an integration of the three functions is essential to meet the needs of service consumers.

In qualitatively analyzing the brand building efforts of the case organizations, two marketing experts were approached. One was services marketing academic and another services marketing practitioner with average work experience of 20 years. They were asked to do cross-case analysis of the data collected by the authors.

Further, consumer evaluation of service quality was done using service performance (SERVPERF) scale (Parasuraman, Zeithaml, & Berry, 1988). Also, Net Promoter Score (NPS)

of both the brands was computed. NPS is widely regarded as a reliable indicator of repeat patronage (Reichheld, 2003).

4.1 Cross-case Analysis

Here, we present the findings of cross-case analysis using the approach discussed above.

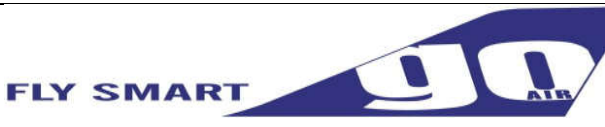
4.1.1 Company's Presented Brand

As discussed earlier, this comprised three components viz. brand elements, brand positioning, and advertising. They are further discussed in the following sub-sections.

4.1.1.1 Brand Elements

The brand elements were examined on memorability, meaningfulness, likeability, transferability, adaptability, and protectibility as suggested by Keller (1998). The marketing experts rated the brand elements deployed by both the airlines as "Good". They found the brand elements, in both the cases, a little weak on likeability and transferability, but well-placed on all other fronts.

Table 1: Cross-case analysis of brand elements of case organizations

Brand Element	Indigo Airlines	Go Air
Brand Name	Indigo Airlines	Go Air
Logo		
Slogan	Go Indigo	Fly Smart

4.1.1.2 Brand Positioning

The brand message mentioned by IndiGo Airlines on their website is "low fares, on-time flights and a hassle-free experience" (Indigo, 2016a, p. 3). It is primarily low-cost and on-time. However, that of Go Air states "punctuality, affordability, and convenience" (GoAir, 2016, p. 4). Both these promises are very similar to each other. Go Air further mentions its positioning as 'the Smart People's Airline'. The tagline 'Fly Smart' reinforces this positioning.

The brand positioning of both the airlines was examined on the parameters of uniqueness and significance as suggested by Ries and Trout (2001). The brand positioning used by both the

airlines was not found to be very unique and significant, given the similarity in the positioning messages. Therefore, the experts rated the brand positioning of both the airlines as "Good".

Table 2: Cross-case analysis of brand positioning of case organizations

Brand Positioning	Indigo Airlines	Go Air
	Low-Cost/ On-time	Low-Cost/ Smart People's Airline

4.1.1.3 Advertising

In the last three years, both IndiGo Airlines (hereinafter referred to as IndiGo) and Go Air (hereinafter referred to as Go) have advertised regularly using the outdoor medium. Outdoor has been the most preferred medium for advertising with Go having a campaign in 2014 for a span of three months (Cardozo, 2014; Chhabra, 2014) and IndiGo having a campaign in 2015 (Kotoky, 2015).

With the tagline 'Ready for take-off', IndiGo at the time of its launch, concentrated on creating a presence through print and outdoor. It started advertising using the radio in the second quarter of 2014 (afaqs, 2015). Based out of Montreal, Tony Tyler, the director general of the International Air Transport Association (IATA) has quoted about IndiGo that "They are very good at marketing themselves" (Kotoky, 2015). This comes at a time when IndiGo is not a member of the IATA. Keeping up with the times, IndiGo also launched a selfie contest for engaging its young audience on Valentine's Day in 2015 (Neogy, 2015). Go has invested largely on promotions but lacked in coherent campaigns as compared to IndiGo. In fact, IndiGo has also been looked at as a case study for effective integrated marketing communication practices in Kruti Shah's (2014) book 'Advertising and Integrated Marketing Communications'. She states that over time IndiGo has managed to break away from the tag of 'cheap' and 'low-cost' airlines to one that is 'no-frills chic'.

While IndiGo has come up with regular advertising campaigns time and again using different media, Go has not been very active as an advertiser. The campaigns launched by IndiGo have always been in line with their brand positioning. Their 2010 ad campaign with the central message being 'on time is a good thing' strengthened their position as the leading on time carrier in the four months preceding the campaign (Ghosal, 2010). In 2011, when IndiGo introduced its international flights, it did so with a musical television ad. As reported by Bhatt (2011, p. 4), "throughout the TVC the tempo of the script is maintained in a poetic rhythm characteristic of a Broadway play," connoting the smooth and hassle free services of IndiGo.

The then president of Indigo, Aditya Ghosh commented, "Our all-new lively advertisement not only celebrates the milestone of us going international but also reiterates our promise of providing a hassle free and on time travel experience to our valued customers" (Bhatt, 2011, p. 5). Indigo has also been successful with target marketing with its 2015 outdoor campaign promoting same day return flights aimed at business travelers (Kotoky, 2015).

Go, on the other hand, has had very few widespread campaigns. The Go Air challenge in 2006 was an aggressive marketing campaign to battle competition where it provided customers getting a better fare rate on competing airlines twice the difference in reimbursement (Madison PR, 2006). But that was a long time ago. Another campaign was in 2014 which used the outdoor medium. The campaign was "to reinforce its brand presence in the target markets" (Chhabra, 2014).

Table 3: Ratio of ticketing, sales and promotion expenditure over total operating revenues of case organizations for 2015-16

Ratio of Ticketing, Sales & Promotion Expenditure over Total Operating Revenues for 2015-16 (INR¹)	Indigo Airlines	Go Air
	6%	3%

Further, as seen in table 3, Indigo relatively spends more in percentage terms on ticketing, sales and promotions. This does help in getting noticed by consumers and prospects.

The advertising efforts of both the airlines were examined by the experts. This was based on message strategy and media strategy as suggested by Kotler and Keller (2009). The experts noted that there was no widespread use of diverse media in both the cases. They gave a rating of "Good" and "Average" to Indigo and Go respectively.

4.1.2 External Brand Communications

The efforts of the case organizations in generating positive external brand communications are discussed in this section. This is divided into the following sub-sections.

4.1.2.1 Corporate Awards

Indigo lays special emphasis on participating in different forums and events pertaining to the aviation industry. This, aided by its superior service, has helped it to win many corporate

¹ INR stands for Indian Rupee

awards. The awards won by IndiGo Airlines in last 3 years are listed below (IndiGo, 2015a, p. 1).

- “Most outstanding domestic airline at Travel and Hospitality Award 2014, New Delhi, January 2015
- Most preferred domestic airline of the year at North East Consumer Awards 2014, Guwahati, January 2015
- Best domestic airline at East India Travel Awards, Kolkata, October 2014
- Most Valuable Brand 2014 in Aviation & Logistics by WCRC 100 Most Valuable brands of the year, Mumbai, December 2014
- Favourite Domestic Airline by Conde Nast Traveller at the Reader’s Travel Award 2014
- Best Indian Airline at 7th International Conference on Indian Civil Aviation, ASSOCHAM, Oct 14, Delhi
- The Porter Prize for Industry Architectural Shift by Institute of Competitiveness, Delhi, September 2014
- Customer Value Leadership Award at The Global Community of Growth, Innovation and Leadership conference by Frost & Sullivan, Mumbai, September 2014
- Best Domestic Airline at the 3rd Annual GMR IGI Airport Awards, Gurgaon, July 2014
- Best Domestic Airline by Trav Talk at India Travel Awards – West, Pune, July 2014
- Outstanding Excellence in Customer service at ET Customer Experience Management Summit, July 2014
- Best Low-Cost Airline in Central Asia and India at the Skytrax World Airline Awards, Farnborough UK, June 2014,
- Best Domestic Airline at CNBC Travel Awards, Indore, June 2014
- Award for Airline of the year (domestic) and fastest growing airline at inaugural BIAL Pinnacle Awards, Bengaluru, May 2014
- Outstanding Travel Experience at ASSOCHAM Think Tourism Think India Thought Leadership Meet, New Delhi, March 2014
- Best Airline-India at the Travel Leisure awards, New Delhi, March 2014
- Award for Excellence in Airline and Excellence in In-flight Services in LCC category at Aviation awards by SAP Media Worldwide Ltd, Hyderabad, March 2014”

As far as Go Air is concerned, the airline has managed to win only one award in the last three years (GoAir, 2014). This was the “Cargo Airline of the Year 2014 Award”, which is not very relevant to its passenger business. Winning performance excellence awards can lead to a lot

of free media coverage and positive consumer conversations around the brand. Based on the above information, the experts rated Indigo as “Very Good” and Go as “Poor”.

4.1.2.2 CSR Activities

IndiGo has a dedicated CSR programme, IndiGoReach, which is aimed at reaching out to the less privileged sections of the society and works for their betterment (IndiGo, 2015b). The key focus areas that IndiGoReach works for include the environment, children and women. In association with Make a Wish Foundation, IndiGoReach enables children with life threatening diseases to fulfill their desires. With the help of their employees, IndiGo runs programs to spread awareness amongst children regarding hygiene and substance abuse. To promote education and literacy, IndiGoReach contributes to schools like ‘Tamana’ in the form of cupboards for classrooms and stationary for children.

For the environment, IndiGo is committed to reduce carbon emissions by sponsoring rural populations at certain places with environmental friendly options of energy production like biogas plants, solar cookers and heaters and so on. IndiGo is the first Indian airlines to associate with Fair Climate Network for low carbon rural development. IndiGo planted 655 silver oak trees near Bengaluru airport in the year 2014 keeping in mind that trees play a crucial role in maintaining ecological balance. Roping in their employees, IndiGo has conducted cycle rallies and celebrated the world ozone day on a large scale to generate awareness for the environment.

Empowering women has been a priority agenda for IndiGo airlines. As compared to the world average of 14%, IndiGo airlines have 20% females in their executive positions. Approximately 40% of IndiGo workforce is female. Apart from the environment, children and women, IndiGoReach makes sure to provide support in times of natural calamities like in the case of the Uttarakhand floods in 2013.

Go Air, on the other hand, has a CSR policy document in place but no annual reports have been made public yet. The policy document states that Go Air will collaborate with NGOs and other social service organizations in order to encourage programmes in different parts of the country (GoAir, 2015). There is no structure given as to the key areas of development or empowerment and the CSR document primarily conforms to the guidelines laid down by the government. Internet search did not yield any information about their CSR activities. Based on the above information, the experts rated Indigo as “Good” and Go as “Poor”.

4.1.2.3 Social Media Activities

Social media activities done by a brand can lead to a lot of consumer conversations. Amongst the various social media platforms available today, Indigo and Go have active presence only on Facebook, the most popular of the lot. Therefore, only the activities of the both the airlines on Facebook was examined.

On its Facebook page, IndiGo has a mix of its ads and updates on its flight schedules and weather conditions of different cities. Go has uploads only limited to its advertising and other marketing efforts. Both the airlines are responsive to comments made on various posts by their customers. However, based on the frequency of response time, Facebook has labeled the IndiGo page as one that 'typically replies within an hour' whereas the Go Air page is labeled as one that 'typically replies within a few hours'. The official page of IndiGo has 464,755 likes whereas Go Air is far behind at 129,652 (as of 17th July, 2016).

Based on the above information, the experts rated Indigo as "Average" and Go as "Below Average".

4.1.3 Customers' Experience With the Brand

In this section, the efforts of the airlines with respect to enhancing the customer's experience with the brand are being discussed. This section comprises three sub-sections, which are discussed as follows.

4.1.3.1 Employee Care

Here, the details of salaries and work load of employees of both the airlines are discussed. Good employee care does impact a service organization's revenue growth and profitability (Heskett, Jones, Loveman, Sasser, & Schlesinger, 1994).

The following table shows a comparison of average salaries of both the airlines fetched from the website of Directorate General of Civil Aviation (DGCA, 2016). As can be seen, Indigo paid significantly higher remuneration (compared to Go) to its staff in 2015-16. Particularly, Indigo pays significantly higher salaries to front end employees, who interact directly with consumers and that way, influence their overall travel experience. Data was also fetched from the regulator's website regarding number of cabin crew as well as ground staff per aircraft in the case of both the airlines. They are displayed in Table 5.

A higher number of front end employees per aircraft aids in better customer care. As seen in Table 8, Indigo, by providing more frontline employees per aircraft, ensures better customer experience. Based on the above information, the experts rated Indigo as “Good” and Go as “Average”.

Table 4: Personnel salaries of case organizations for 2015-16

Category of staff	Indigo Airlines	Go Air	% Difference in Avg. Salaries of Indigo vs. Go
	Avg. Salaries (INR ²)	Avg. Salaries (INR)	
Pilots and co-pilots	5,665,152	5,562,870	2%
Other cockpit personnel	2,850,000	791549	260%
Cabin attendants	508,730	400,024	27%
Maintenance and overhaul personnel	1,092,016	915,044	19%
Ticketing and sales personnel	1,231,884	391,058	215%

Table 5: Number of frontline employees per aircraft of case organizations for 2015-16

Parameter	Indigo Airlines	Go Air
Nos. of cabin and support crew per aircraft	27	22
Nos. of ground staff per aircraft	61	21

4.1.3.2 Operations Design

Further, Indigo provides more convenience to its flyers compared to Go due to larger fleet size, more number of flights and routes, as displayed in the table below.

Table 6: Operational details of case organizations for 2015-16

Parameter	Indigo Airlines (IndiGo , 2016b)	Go Air (Chowdhury, 2016)
Nos. of aircraft	108	20
Nos. of flights	806	141
Nos. of destinations	40	22

² 1 INR = 0.015 USD; 1 INR = 0.014 EUR (1 USD = 66.235 INR; 1 EUR = 71.921) as on 1st January, 2016

The difference between Indigo and Go is very stark. The experts rated Indigo as “Very Good” and Go as “Poor”.

4.1.3.3 Brand Promise Delivery

Data fetched from the regulator and displayed in the following table shows the performance of Indigo and Go on relevant operational parameters. Clearly, Indigo lives by its brand promise.

Table 7: Customer complaints and other operational data for 2015-16 for case organizations

Parameter	Indigo Airlines	Go Air
Nos. of complaints/ 10,000 PAX	0.30	1.20
Flight cancellations	0.79%	0.36%
On-time Performance (for four metro airports)	81.2%	70.9%

The in-flight announcement script of Indigo is accentuated by words like “on-time” and “before-time”, which reinforce their positioning. On the other hand, the Go script does not any make reference to their positioning of “smart people’s flyer”.

The on-ground as well as in-flight announcement scripts are more courteous in case of Indigo versus Go. As a proof, the Indigo announcement script uses the word “guests” instead of “passengers” in case of Go.

About.com is a website where experts share their views on topics of diverse nature. Tagged as India’s travel expert, Sharell Cook (2015) has reviewed both IndiGo and Go Air in her article ‘Guide to Domestic Airlines in India’. For IndiGo, she states that “the airline hasn’t compromised on punctuality, connectivity of flights, safety, or customer service. If you’re looking to fly with a low cost airline, IndiGo offers excellent “value for money”. In her review of Go Air, she states that it has often been subjected to complaints for punctuality which the airline is trying to tackle in the best possible manner. Here again, the experts rated Indigo as “Very Good” and Go as “Average”.

4.1.3.4 Embedded Case: Consumer Survey

The consumer survey comprised two parts viz. computation of NPS and service performance perception (SERVPERF) study. Computing NPS involved asking respondents one single question using a 0-10 scale (where 0 is least likely and 10 is most likely): would you

recommend this company to your friends and acquaintances? Further, the respondents were administered the SERVPERF scale developed by Parasuraman, Zeithaml, and Berry (1988). This scale measures the service performance perceptions of consumers. Compared to SERVQUAL scale, the SERVPERF scale is respondent-friendly and is a better indicator of overall service quality of a firm (Jain & Gupta, 2004). Since sampling used is non-random, inferential statistics such as ANOVA will not be applicable and hence not used for analysis (Malhotra & Dash, 2011). More details are provided in the following sub-sections.

4.1.3.4.1 Net Promoter Score

NPS is computed by subtracting the percentage of customers who have given 9 or 10 ratings (called promoters) minus those who have given 0 to 6 ratings (called detractors) (Reichheld, 2003). Passively satisfied customers are those who have given 7 or 8 rating in the survey.

Table 8: Net Promoter Scores (NPS) of case organizations

Parameter	Indigo Airlines	Go Air
% Detractors	10%	75%
% Passively Satisfied Customers	28%	21%
% Promoters	62%	4%
NPS	52%	-71%

Clearly, Indigo is miles ahead compared to Go. This is because of high percentage of promoters and low percentage of detractors. However, the percentage of passively satisfied customers is significant even in the case of Indigo. This suggests that Indigo has to find out ways to improve the customer experience. This will help in boosting the present NPS to more than 75% - a level at which Amazon and other highly customer focused service organizations operate (Reichheld, 2003).

While, Go Air has to do serious conversations with its customers to identify the reasons for high dissatisfaction (75% detractors). Further, it has to make concerted efforts and work on eliminating the factors causing high dissatisfaction. Based on the above information, the experts rated Indigo as "Very Good" and Go as "Very Poor".

4.1.3.4.2 Service Performance Perceptions

The survey findings revealed that the consumer perceptions of service quality are higher (by as much as 20%) in case of Indigo versus Go.

Table 9: SERVPERF results of case organizations

SERVPERF Results				
Dimensions	Mean	Standard Deviation	Mean	Standard Deviation
	Indigo Airlines		Go Air	
Reliability	4.01	0.81	3.03	0.72
Responsiveness	3.88	0.80	3.11	0.70
Assurance	3.85	0.81	3.09	0.74
Empathy	3.14	0.83	2.84	0.78
Tangibles	3.78	0.88	3.24	0.78

As seen in table 9, the maximum difference between the perceptions of Indigo and Go are on reliability followed by assurance, responsiveness, tangibles, and empathy. Empathy is an area where consumer perceptions of both Indigo and Go are low. This time, the experts rated Indigo as “Almost Good” and Go as “Below Average”.

4.1.3.4.3 Sample Descriptive Statistics

The descriptive statistics of the sample are presented in tables 10, 11, 12 and 13. As shown in the tables, the sample chosen on basis of convenience was quite balanced in terms of gender. All the respondents belonged to Generation Y with 46% respondents coming from 18-25 years age group and rest from 26-30 years age group. In terms of occupation, executives are the largest category (54.36%) followed by students (25.36%) and self-employed professionals (20%). On annual household income, the INR 1.0 – 1.9 million (mn) income category was the largest distantly followed by the INR 2.0 mn & above category and thereafter, the INR 0.5 – 0.9 mn category.

Table 10: Sample descriptive statistics- Gender

Descriptive Statistics: Gender		
Male	201	51.54%
Female	189	48.46%
Total	390	100.00%

Table 11: Sample descriptive statistics – Age Group

Descriptive Statistics: Age Group		
18-25	180	46.15%
26-30	210	53.85%
Total	390	100.00%

Table 12: Sample descriptive statistics – Occupation

Descriptive Statistics: Occupation		
Students	100	25.64%
Executives	212	54.36%
Self-Employed	78	20.00%
Total	390	100.00%

Table 13: Sample descriptive statistics – Annual household income

Descriptive Statistics: Annual Household Income (INR)		
< 0.5 mn	0	0.00%
0.5-0.9 mn	38	9.74%
1.0 – 1.9 mn	286	73.33%
2.0 mn & Above	66	16.92%
Total	390	100.00%

5. SUMMARY AND CONCLUSIONS

Table 14 presents the cross-case analysis summary in response to the secondary research questions of the present study. Finally, to address the larger research question (What are the driving factors for building brand equity in the context of airline services?), factors wherein, the case organizations diverge significantly in terms of their efforts, were identified. As mentioned earlier, both the case organizations are at opposite ends of the revenue/ market share spectrum. Therefore, the factors wherein the organizational efforts diverge would be the driving factors. They are shown in italics (e.g., *1C*, *2A*, *2B*, *3A*, *3B*, *3C*) in table 14.

Table 14: Cross-case analysis summary

S. No.	Particulars	Indigo Airlines	Go Air
1	Company's Presented Brand		
1A	Brand Elements	Good	Good
1B	Brand Positioning	Good	Good
1C	<i>Advertising</i>	<i>Good</i>	<i>Average</i>
2	External Brand Communications		
2A	<i>Corporate Awards</i>	<i>Very Good</i>	<i>Poor</i>
2B	<i>CSR Activities</i>	<i>Good</i>	<i>Poor</i>
2C	<i>Social Media Activities</i>	<i>Average</i>	<i>Below Average</i>
3	Customer's Experience with the Company		
3A	<i>Employee Care</i>	<i>Good</i>	<i>Average</i>
3B	<i>Operations Design</i>	<i>Very Good</i>	<i>Poor</i>
3C	<i>Brand Promise Delivery</i>	<i>Very Good</i>	<i>Average</i>
	Consumer Evaluations		
i	NPS	Very Good	Very Poor
ii	Service Performance Perceptions	Almost Good	Below Average

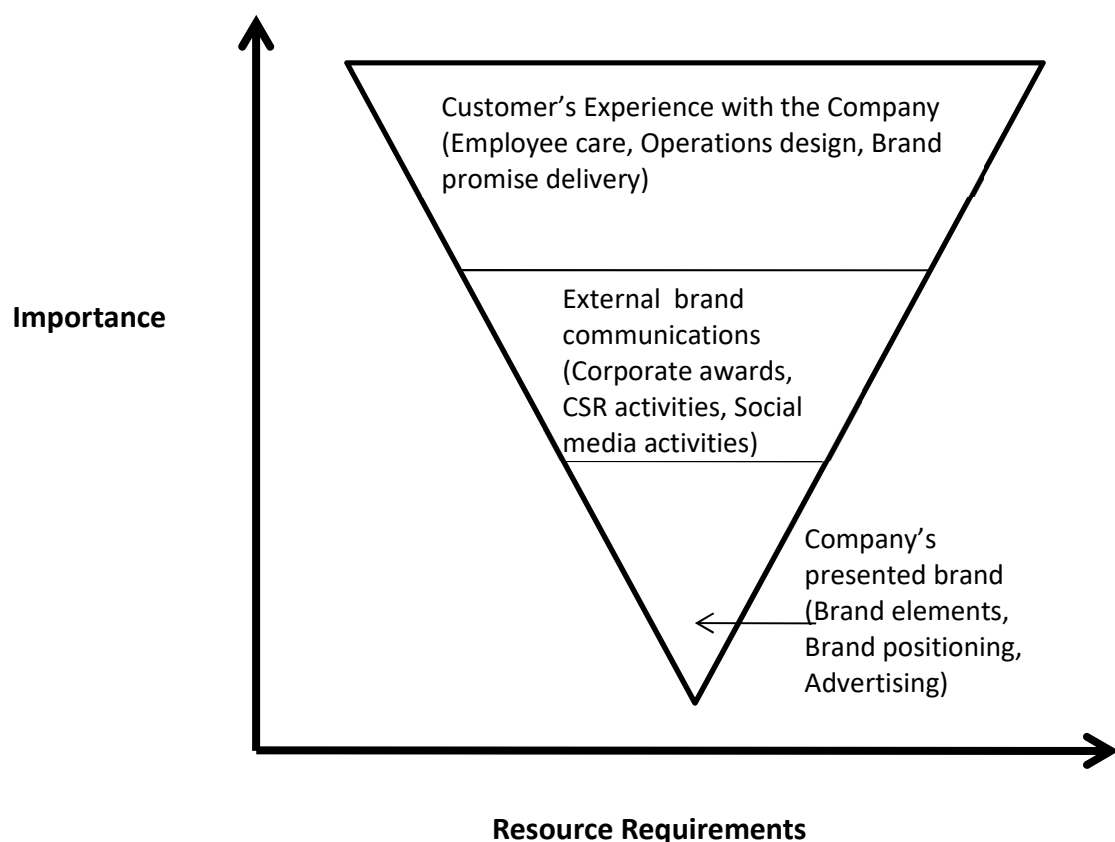
Further, the performance of both the organizations on the first component, company's presented brand, is more or less similar. Therefore, the major drivers for contrasting outcomes cannot come from this. This is very much in alignment with the results of the empirical study done by Fung So and King (2010).

Additionally, of all the three components, Indigo performs best in the third component, customer's experience with the company. According to Berry (2000), this is the dominant contributor to brand equity. The consumer evaluations, though not generalizable, are clearly in favour of Indigo, especially, in the case of Net Promoter Score (NPS). Finally, Indigo does reasonably well in the second component, external brand communications. Whereas, Go is comparatively far behind in the second and third components.

The above discussion is captured in a unique conceptual framework inductively developed by the authors and displayed in figure 3. Customer's experience with the company is most crucial

to brand equity formation. This is manifested in the following factors viz. Employee care, operations design, and brand promise delivery. It is evident from the factors that, collectively, they are very resource intensive. The next factor in terms of importance is external brand communications. This comprises corporate awards, CSR activities, and social media activities. This factor should be moderately resource intensive to be in tandem with the importance of the factor. Finally, company's presented brand is least important in terms of its impact on brand building. Therefore, resource requirements/ allocation for this factor should be least as well.

Figure 3: Brand building in airlines: A conceptual framework



6. IMPLICATIONS FOR RESEARCH AND PRACTICE

There is enough literature to suggest that qualitative studies using case study research can be conclusive (e.g., Flyvberg, 2006; Yin, 2009, etc). Therefore, the findings of this study should be taken seriously by practitioners. However, in the present study, depth interview (DI) was largely avoided due to major difficulties experienced in accessing airline officials. Use of DIs would have added more depth to the present study and interested researchers can look into same while replicating this study. Also, future researchers can choose to empirically test the proposed conceptual framework to check its applicability across different contexts.

As regards practitioners, the framework gives clear pointers about how to go about building strong brand equity. Branding is not just the work of brand managers; rather, it encompasses multiple functions. The present paper, based on empirical research, inverts the traditional pyramid for brand building, wherein advertising reigned supreme. Rather, customer's experience with the company should be the primary driver supported by external brand communications and company's presented brand.

Thus, the proposed conceptual model flips the current thinking of branding and provides a fresh and valuable perspective. It is hoped that airlines, across markets, will leverage these learnings to build stronger brand equity leading to higher customer loyalty, revenues and profits.

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FLYING BEYOND BORDERS: INTERMODAL CONSIDERATIONS TO IMPROVE ACCESSIBILITY OF AEGEAN SEA ISLANDS, GREECE USING DISCRETE CHOICE ANALYSIS

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ABSTRACT

Accessibility is of major importance for tourism and trade development in Eastern Aegean Sea islands, Greece. In particular, the island of Chios is heavily dependent on Athens International Airport for both its inbound and outbound tourism. On the other hand, the International Airport of Izmir in Turkey, located much closer to the island, serves several European destinations. Crossing the borders in an intermodal transport context may lead to a substantial air travel alternative for Chios, thus improving its accessibility and potential for tourism development. A discrete choice analysis, based on primary data research regarding travel scenarios from Chios to ten main European airports-destinations, shows the potential for new traffic flows in addition to the existing ones. Airport utility maximization differences observed among various social groups is also noteworthy.

Keywords: Airport catchment area, Intermodal transport, discrete choice models, accessibility, travel alternative, utility maximization

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1. INTRODUCTION

Catchment area analysis refers to the estimation of the geographical area from which a large proportion of an airport's outbound passengers originate, or inbound passengers travel to. Usually, within acceptable travel distances only one airport provides flights to the preferred destination (Poulaki et al, 2013; Kouwenhoven, 2008). However, the evolution in the air transport sector as well as the continuous optimization in surface connections has given people the ability to choose between multiple airports during their travel decision making. Since the deregulation of the airline industry in the USA and Europe, the number of airports providing commercial operations has risen substantially and passengers have a wider choice of airfares and airports than ever before (Papatheodorou, 2002; Koo et al, 2016). Consequently, the size of a catchment area and its dynamics in overlapping with neighbouring catchments, depends on several factors based on airport services (accessibility, frequencies, fares) and air travel demand (time, cost) (Lieshout, 2012). Direct competition between airports has generated more than one air travel alternatives and it is worth investigating how people choose an airport for their travel, i.e. in terms of vicinity or to minimize their general transport cost.

To investigate this point, a study has been undertaken with regards to airport choice between Athens International Airport (ATH) and Izmir Adnan Menderes Airport (ADB), by the inhabitants of the Greek Eastern Aegean Island of Chios. Travel scenarios (total travel time and total travel cost) concerning a roundtrip from Chios to ten (10) main European hubs by air via ADB or via ATH in a questionnaire survey were given to the inhabitants of Chios to establish airport preferences. The results of this investigation provide evidence of the ADB potential to consider an intermodal transportation strategy to expand its catchment area into the Greek Eastern Aegean Islands (Poulaki et al, 2013), since according to Vesperman and Wald (2011) the expansion of an airport's catchment area is to facilitate the ability of airport travellers to use intermodal airport access. This may prove of benefit to both inbound and outbound travellers of Chios especially in an era of cost-cutting around the globe (Papatheodorou and Pappas, 2017).

2. DISCRETE CHOICE MODELLING

The air transport industry presents increasing interest for discrete choice models because such models can explain how passengers make decisions at an individual level with regards to air travel. The trade-offs faced by an individual vis-à-vis the various alternatives and the final choice made generate this interest. According to Garrow (2010), the attributes of each

alternative lead the individual to the final choice which maximizes utility based on priorities that individuals set each time. This is called utility maximization rule through an alternative choice set and may be represented in a function. Factors that affect decision-making are mainly travel time and cost. Additionally, there are others that influence this process such as income, age etc. Thus, a utility function should include all those factors with a respective weight of influence (Kaltsounis and Vythoulkas, 2009).

The simplest discrete choice model widely used is the multinomial logit model (MNL) which is a generalized binary logit model and describes how an individual chooses between three or more discrete alternatives. Similarly to binary logit model, MNL probabilities are derived from the hypothesis that errors follow a Gumbel distribution. To decide which variables will be included in the utility function, a specific procedure, similar to that used in determining the regression models, is applied (Profyllidis, 2008). For each feature, an assessment is made whether the model can explain the final behaviour of the traveller. In this function, the form of regression includes variables that may be generic and/or specific. Generic variables appear in function of the utility of each alternative and their coefficients are the same. Specific ones are variables that appear separately for each option, being displayed in the utility function of that particular option.

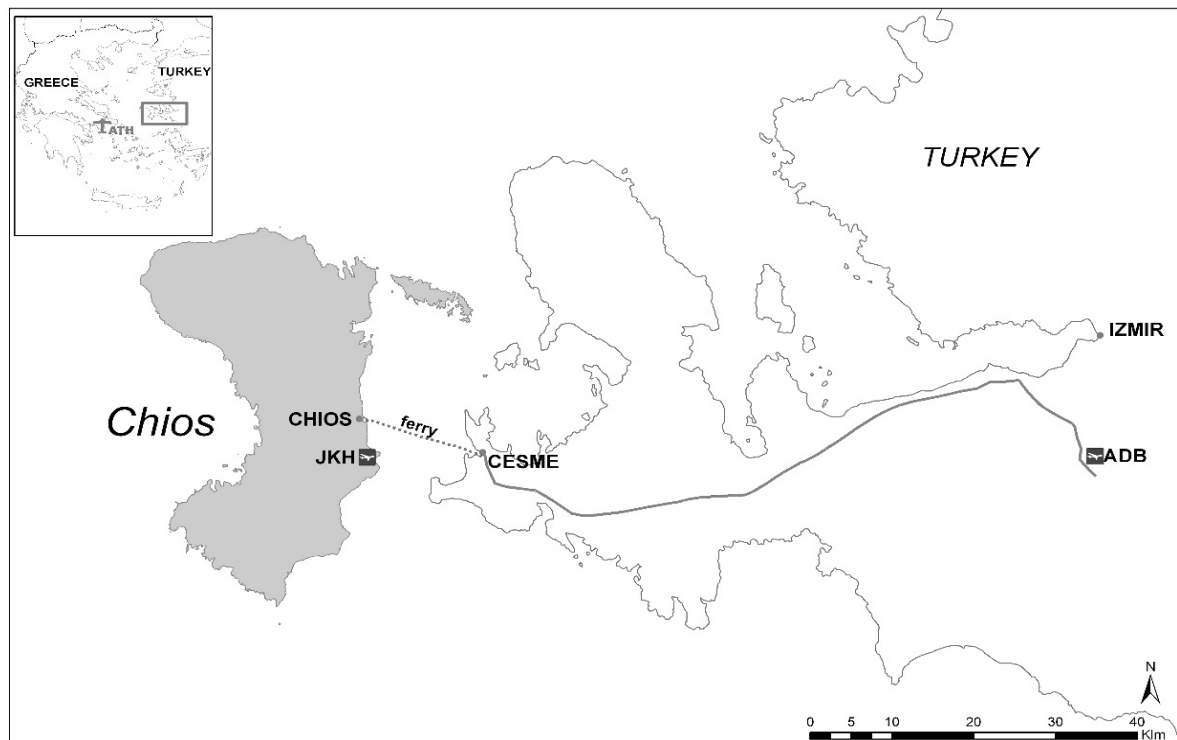
3. RESEARCH METHODOLOGY

A stated-preference primary research has been undertaken in the island of Chios distributing questionnaires over a two-week period in February 2013, where inhabitants as potential travellers have been called to choose among alternative travel scenarios the one that maximizes their airport utility.

The following map shows the distances between Chios Island and the two airports in question, i.e. Athens International Airport (ATH) and Izmir Adnan Menderes Airport (ADB). At this point it is worth mentioning that most of the island's international tourism (inbound/outbound) concerns domestic/international connecting traffic via ATH. After all, the local market is too small and the Chios airport (JKH) infrastructure is rather limited to sustainably support direct services to international destinations at least on a year-round basis. Interestingly though, an intermodal surface transport solution from Chios to ADB is introduced in this study to illustrate

that airport's accessibility by the inhabitants of the Greek island and conversely ADB's possible use by inbound tourists too.

Map 1: Accessibility of Izmir Adnan Menderes International Airport from Chios Island



Source: (Poulaki et al, 2013)

Door to door roundtrip travel scenarios have been designed in real time using online booking engines and each alternative scenario includes the optimal solution in terms of travel time and cost (excluding night-stop option). Booking date is the 7th of January 2013 and the travel date concerned the first week of March (1-8/3/2013). Accessibility to ATH is realized by ship from Chios port (8 hours & 60€ average fare one way) or by airplane from Chios airport (45' & 150-180€ average fare roundtrip). In addition, accessibility to ADB is realized by an intermodal transport system that includes a Short Sea Shipping Link from Chios port to the port of Cesme and then a shuttle bus to ADB (1 hour 40' & 40€ average fare roundtrip).

Given travel scenarios refer to travel alternatives using Chios as origin and ten main European cities as destination. This research has the characteristics of a stated preference research as described by Kaltsounis and Vythoulkas (2009) in terms of attributes and particularities which:

- is based on the statements of travellers regarding their response to changes related with their potential travel;

- each alternative is presented as a bundle of attributes, like travel time, travel cost etc.;
- the analyst builds these hypothetical alternatives to measure the impact of each attribute;
- alternative scenarios given to potential travellers must be understandable and simulate a realistic and possible situation similar to travels already made by them. Participants in the research state their preference choosing among those given scenarios.

To estimate the various utility determinant coefficients, the Biogeme software was used. This software is structured to provide analysts with appropriate tools to test various types of discrete choice models avoiding logarithmic procedure (Kitrinou et al 2010; Bierlair et al, 2009). Variables statistically insignificant are excluded a priori from Biogeme dataset and econometric analysis process. Several tests were undertaken in Biogeme to finalise the number of independent variables which are statistically significant as explanatory to the dependent one and altogether finally formed the econometric model. At this point, it is worth mentioning that repeating the dataset tests and using a general-to-specific approach assures the highest possible validity of the output in dealing with multicollinearity and heteroscedasticity.

The analysis was based on multinomial logit models (MNL) to assess choice probabilities in the case of three alternative travel scenarios, i.e.:

1. Travel from Chios to international destinations via Izmir Adnan Menderes International Airport (ADB - optimized in time and cost)
2. Travel from Chios to international destinations via Athens International Airport Eleftherios Venizelos (ATH - optimized in cost)
3. Travel from Chios to international destinations via Athens International Airport Eleftherios Venizelos (ATH - optimized in time)

Explanatory variables include demographic elements such as age, income, educational level and travel behavioural attributes such as the accompanied status during travelling and intercontinental final destination. Thus, the multinomial logit models include the following variables shown in Table 1.

Table 1 Variable overview

	<i>Variable Name</i>	<i>Values</i>	
		1	0
1	DESTAMS	If the final destination is Amsterdam	Other
2	DESTBER	If the final destination is Berlin	Other
3	DESTFRA	If the final destination is Frankfurt	Other
4	DESTIST	If the final destination is Istanbul	Other
5	DESTLON	If the final destination is London	Other
6	DESTMAD	If the final destination is Madrid	Other
7	DESTMUC	If the final destination is Munich	Other
8	DESTPAR	If the final destination is Paris	Other
9	DESTVIE	If the final destination is Vienna	Other
10	DESTZRH	If the final destination is Zurich	Other
11	AGE2	If participant is more than 35 years old	If participant is less than 35 years old
12	EDUCATION2	If the participant holds a tertiary education degree	If the participant holds a secondary education degree
13	INCOME2	If participant gains more than 2000 euros per month	If participant gains less than 2000 euros per month
14	Busnal	Travel alone (not accompanied)	Other
15	Children	If the participant doesn't have any children	Other
16	dum2intldest	If the final destination is the USA	other ¹
17	TCIZA	Total travel cost in euros for scenario 1	
18	TTIZA	Total travel time in hours for scenario 1	
19	TCATA	Total travel cost in euros for scenario 2	
20	TTATA	Total travel time in hours for scenario 2	
21	TCATB	Total travel cost in euros for scenario 3	
22	TTATB	Total travel time in hours for scenario 3	

¹Participants who declared that have already realized a travel from Chios to international destination via ADB

4. RESULTS AND OUTPUT INTERPRETATION

Table 2 two summarizes the main aggregate model statistics:

Table 2 Aggregate Model Statistics

Number of observations	2196
Number of individuals	2196
Null log-likelihood	-2168.868
Init log-likelihood	-2168.868
Final log-likelihood	-1015.478
Likelihood ratio test	2306.780
R ²	0.532
Adjusted R ²	0.523

Tables 3, 4 and 5 report the estimated coefficients for scenarios 1, 2 and 3 respectively

Table 3 Utility coefficients for scenario 1

<i>Variable Name</i>	<i>Coefficient</i>	<i>t-statistic</i>	<i>p-value</i>
Constant (for scenario 1)	0.653	1.78	0.07
TC (generic)	-0.00928	-6.76	0.00
TT (generic)	-0.0867	-5.53	0.00
DESTAMS	0.00644	1.48	0.14
DESTBER	-0.00256	-0.68	0.50
DESTFRA	-0.0568	-0.29	0.77
DESTIST	0.0155	0.10	0.92
DESTLON	0.145	1.98	0.05
DESTMAD	0.0281	0.20	0.84
DESTMUC	0.000159	0.05	0.96
DESTPAR	0.0612	0.44	0.66
DESTVIE	-0.0641	-0.49	0.62
DESTZRH	-0.0241	-0.58	0.56
EDUCATION2	0.207	1.65	0.10

Having Table 3 in mind, the utility function in the case of Scenario 1 may be modelled as follows:

$$U_{IZ} = 0.653 + 0.145 * DESTLON + 0.000159 * DESTMUC + 0.00644 * DESTAMS - 0.00256 \\ * DESTBER + 0.0612 * DESTPAR - 0.0641 * DESTVIE - 0.0568 * DESTFRA \\ + 0.0155 * DESTIST + 0.0281 * DESTMAD - 0.0241 * DESTZRH + 0.207 \\ * EDUCATION2 - 0.0867 * TTIZA - 0.00928 * TCIZA$$

Table 4 Utility coefficients for scenario 2

<i>Variable Name</i>	<i>Coefficient</i>	<i>t-statistic</i>	<i>p-value</i>
Constant (for scenario 2)	-0.377	-1.26	0.21
TC (generic)	-0.00928	-6.76	0.00
TT (generic)	-0.0867	-5.53	0.00
AGE2	1.30	10.29	0.00
busnal	0.174	1.07	0.29
children	0.0189	0.88	0.38

Having Table 4 in mind, the utility function in the case of Scenario 2 may be modelled as follows:

$$U_{A1} = -0,377 - 0,0867 * TTATA - 0,00928 * TCATA + 0,0189 * children + 0,174 * busnal \\ + 1,30 * AGE2$$

Table 5 Utility coefficients for scenario 3

<i>Variable Name</i>	<i>Coefficient</i>	<i>t-statistic</i>	<i>p-value</i>
Constant (fixed for scenario 3)	0 (by default)	Default	default
TC (generic)	-0.00928	-6.76	0.00
TT (generic)	-0.0867	-5.53	0.00
INCOME2	-0.259	-0.71	0.47
dum2intldest	-0.0703	-0.07	0.94

Having Table 5 in mind, the utility function in the case of Scenario 3 may be modelled as follows:

$$U_{A2} = -0,0867 * TTATB - 0,00928 * TCATB - 0,259 * INCOME2 - 0,0703 * dum2intldest$$

Before interpreting the output of the econometric analysis, it is worth mentioning that after several tests we ended up in the advanced full generic version of processing the variables. One reason is that third travel scenario was available only for the 6 destinations, so missing

data of the remaining four influenced the specific process output. Another one is that utility coefficients presented optimized statistic indexes in the case of the generic process.

Constants in utility functions declare the willingness of the participants, while variable coefficients declare the choice probability. Constant in scenario 3 is 0 by default. Travel time and cost factors as explanatory variables are included each time in the function of the corresponding alternative choice scenario having the same beta coefficient in the context of the generic data process. Furthermore, Biogeme tends to place variables in the functions where they present statistical significance. Additionally, interpreting variables are included in the corresponding functions even though they do not seem to present statistical significance. Having the above in mind, the results may be interpreted as follows:

Scenario 1: This is more likely to be chosen by individuals of higher educational level. Especially air travel to London, Munich, Paris, Istanbul, Amsterdam and Madrid seems to be preferred via ADB as the coefficients for those destinations have a positive sign.

Scenario 2: This is more likely to be chosen by individuals who are not attracted by scenario 1. More specifically, these are individuals without children, older in age and not accompanied while travelling for business purposes.

Scenario 3: This is more likely to be chosen by individuals with a higher monthly income and by those whose final destination is the USA.

The fact that all destinations are placed by the model in the utility function of scenario 1 shows that most of the participants chose to travel internationally from Chios via ADB. Furthermore, econometric analysis gives more information with regards to the individual profile for alternative choices that maximize utility of each potential travel.

6. CONCLUSIONS

Econometric analysis using discrete choice modelling proves that an airport catchment area is not stable and may experience radical transforms in case of a change in significant determinant factors of choice and decision-making. By adopting an intermodal transport strategy, an airport may improve its accessibility and attract passengers from other airports of the wider region even from the other side of the borders; the key is utility maximization. Despite the known geopolitical complexities between Greece and Turkey, the present case study reveals that

economics (at least in a stated-preference individual context) may play a more important role. In any case, undertaking a similar research exercise for inbound travellers is necessary; this is the only way to validate that in addition to outbound, inbound tourists to Chios are also interested in visiting the island via ADB. Still, the present study implicitly argues that this may be a valid assumption to make. Finally, replicating the study in a different geographical region can be very interesting and valuable to further support the dynamics of an airport's catchment area especially when its level of services and accessibility from neighbouring border regions and countries improves.

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IMPACT OF THE NEW DISTRIBUTION CAPABILITY (NDC) STANDARD ON FUTURE AIRLINE DISTRIBUTION – A CRITICAL ANALYSIS

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ABSTRACT

In 2012 IATA has initiated a new communication standard in airline distribution called New Distribution Capability (NDC) that will enable airlines, IT providers, and travel agents to work together to create new capability in the distribution of airline products and services as well as to simplify the business. NDC has been introduced to solve limitations of the existing programs in the distribution system and to represent the modernization of future air travel distribution. NDC standard intends to give a potential impact on future airline distribution where airlines will have wider opportunities to directly interact with intermediaries and reduce commission fees to the Global Distribution System (GDS). This study, in particular, confirms that airline distribution specialists firmly believe that NDC constitutes an important development in the airline industry and, while still being in its development stage, it clearly has the potential to address today's market issues and to solve tomorrow's challenges.

Keywords: New Distribution Standard, Airline Distribution, Global Distribution Systems.

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1. INTRODUCTION

1.1 *Background of the research*

The aviation industry has gone through drastic changes in the past 20 years. The global development of the Low Cost business model, the depression of the aviation market following the 9/11 attacks and the high oil price has put enormous pressure on established network carriers to decrease their costs. As a consequence network carriers were searching for cost cutting potentials in all business segments. One of the big cost blocks were distribution costs, especially the costs of the Global Distribution Systems (GDS).

In parallel the digital technology spurred people to create innovations in business. In the airline industry, digital technology has significantly changed the commercial environment especially in addressing customers' needs during the process of searching, planning, and buying air products (IATA, WTAAA, T2 Impact, and Atmosphere Research Group, 2015). Advanced technology is not only enabling airlines to modify their products, personalize it according to the customer's needs, and analyze current trends, but also providing customers the opportunity to design their preferred air products (IATA and Atmosphere Research Group, 2015).

In 2015, more than 3.5 billion people worldwide used commercial airline flights and it is projected to reach 7 billion passengers by 2034 (IATA, 2015). In this internet era, an increasing share of passengers plan, search, and buy airline tickets online. This phenomenon has encouraged airlines to more and more sell and distribute their tickets through the internet (Harteveldt, 2012).

In the 1970s, when airlines were connected to travel agents through the IBM green screen system, airlines' ancillary air products couldn't be sold because of the primitive nature of that IT system. The introduction of Electronic Miscellaneous Documents (EMD), the electronic successor of Miscellaneous Charges Orders (MCO), solved the limitations in online sales of ancillary products in today's distribution systems in the best possible way for the green screen technology, but still left gaps for the direct and indirect distribution.

With the transparency created by the internet, customers are becoming more demanding. For every single product that they buy, they want to know what the value of the product is, and what benefits they get for the price that they pay (Hoyles, 2015). However the existing IT tools cannot meet those customers' needs. Therefore, in early 2012, IATA launched a program

named New Distribution Capability (NDC) to address these limitations (Hoyles, 2015; Tyler, 2013).

1.2 Research Objective

This research is aimed to

- explain the principles of airline distribution channels,
- evaluate the existing distribution channels,
- give an outlook on the future of distribution channel,
- analyze advantages and disadvantages of New Distribution Capability (NDC), and
- describe potential consequences of NDC.

In the conclusion, this research paper will come up with a SWOT analysis for the implementation of this new standard and give recommendations to the stakeholders.

1.3 Research Methodology

This research is conducted in two parts. The first part is a non-empirical literature based research methodology where existing publications on the New Distribution Capability (NDC) are critically reviewed. Kothari (2004) explains that in conducting analytical research, researchers have to use information from credible resources which are already available and publicly accepted. When the information and facts are collected, the researchers analyze them to make a critical evaluation of the findings and current situation.

In the second part an empirical research methodology is used. Distribution experts of the airline industry will be invited to answer an online survey on the future of distribution and NDC, in order to complement the results of the literature review.

2. AIRLINE DISTRIBUTION CHANNELS TODAY

2.1 Airline distribution policy

Distribution policy is a part of marketing management where producers get in contact with the final customers for the sale of their products. This contact can be direct or indirect (Shaw, 2011). In the airline industry, airlines use both direct and indirect distribution channels to sell

air products. In direct distribution, airlines sell the products directly through their ticketing offices or websites, and in indirect distribution the airlines use third party distributors such as travel agencies and online travel agencies (Harteveldt, 2012).

Prior to the existence of airline websites as one of the direct distribution channels, approximately 80% of airline products were sold through indirect channels. Since the emerging of direct online sales (airlines website and online travel agents), approximately 50% of the global bookings are managed through this channel (Open Axis Group, 2010).

2.2 Direct distribution channels

The main advantage of a direct distribution channel for the airline is that normally only a reduced commission, kick-back or fee has to be paid to channel intermediaries. Direct channels become significant to airlines in distributing their products through airline ticket offices, call centers, and the internet-based sales channel (Shaw, 2011). Figure 1 shows a screen shot of the Qatar Airways web page.

Figure 1: Direct distribution channel (Source: Qatar Airways, 2017)

The screenshot shows the Qatar Airways website interface for a flight search from Frankfurt (FRA) to Doha (DOH). The search results are displayed for the date Wednesday, 20 Sep 2017, for 1 adult. The total price shown is 350.77 EUR. The page includes a navigation bar with options like Selection, Review, Passenger details, Trip summary, Payment, and Confirmation. Below the search results, there is a table showing different fare classes and their prices. The 'Economy Saver' fare is highlighted as the lowest fare this week.

Fare Class	Price (EUR)	Weight	Distance	Seats Available
Economy Saver	350.77	30 Kgs	1426 Qmiles	3
Economy Value	412.77	30 Kgs	2137 Qmiles	3
Economy Flex	609.77	30 Kgs	2849 Qmiles	3
Business Saver	1,074.77	40 Kgs	3561 Qmiles	4
Business Value	1,166.77	40 Kgs	4980 Qmiles	4
Business Flex	1,312.77	40 Kgs	6098 Qmiles	6

The page also includes a 'Fare details' section showing the flight schedule, departure and arrival times, and a 'Flight & Cabin features' section detailing the fare rules, including changes, cancellations, and baggage allowances.

Since decades, the websites of airlines and other travel intermediaries have significantly changed customers' behavior in searching, comparing, and purchasing airline tickets. The mature stage of this new direct channel helps airlines not only to sell but also to personalize

products and services and to give another new shopping experience to the end customers (Open Axis Group, 2010).

Besides, airline's websites also give an opportunity to customers to choose the products based on the value that they expect. Today an airline's website has a significant role in distributing airline's products through direct distribution channels – especially as mobile commerce registers an increasing importance in both developed and developing countries. Larger airlines can directly present their offers through their own website with a lot of personalized offers (IATA, 2013).

Taneja (2011) maintains that in order to increase profit, airlines should enhance direct distribution channels, increase ancillary revenue, and reduce distribution cost by optimizing the use of indirect channels.

Direct access to customers and their data become increasingly important for airlines. Direct distribution channels are almost exclusively used by low cost carriers (LCCs). In 2012, LCCs successfully generated about twice as much of their bookings through website direct channels compared to full service/flag carriers (Harteveldt, 2012). Most LCCs use direct distribution channels to generate bookings through their website in order to avoid high costs from indirect distribution processes including but not limited to GDS costs plus travel agency kick-back, operation of an electronic ticketing database and money repatriation.

On the other hands, it is still difficult for airlines to achieve their sales targets by only relying on direct channels due to geographical coverage limits and technological limitations of the online channel. Therefore, the role of indirect channels (mainly travel agency) is still crucial for the airline business (Shaw, 2011).

2.3 Indirect distribution channels

To achieve a wide geographical coverage, airlines use travel agencies as an indirect distribution channel to distribute air products to the end customers. In the past, airlines paid commissions to the agents for every transaction (Shaw, 2011). In many markets this has already changed. Airlines switched to a zero commission policy and the agents are charging service charges to the end customer. However airlines still pay incentive to travel agents as well as high GDS fees. For some airlines, the costs in selling tickets through an indirect channel are 20-times more expensive compared to direct channels (Harteveldt, 2012). However, airlines are not able to avoid indirect channels due to their limitations in covering their entire market (Taneja, 2011).

Some passengers like to be directly served by the travel agents staff for advice, help, or personalization of the travel. However, the presence of travel agents as airlines indirect channel is considered suboptimal in some areas such as in providing rich airlines content, personalizing products, and selling ancillary products (Hoyles, 2015).

Shaw (2011) underlined that, in recent years, direct selling through airline websites has significantly increased airlines sales since people tend to choose buying through a direct online channel rather than going to a sales office or traditional travel agency. As a consequence the travel agency's business concept has also transformed from traditional sales into digital sales namely online travel agencies (OTAs) (see figure 2) (O'Connell and William, 2011).

Figure 2: Indirect distribution channel through Online Travel Agent

(Source: www.kayak.com)

★	\$497 Delta		KLM / Delta	10:15a FRA → 3:30p JFK	11h 15m	1 stop (AMS)	nonstop	Economy
	View Deal			8:00p JFK → 10:00a FRA	8h 00m			KLM Cityhopper operates flight 1764.
			Show details					
★	\$497 KLM		KLM / Air France	10:15a FRA → 3:30p JFK	11h 15m	1 stop (AMS)	nonstop	Economy
	View Deal			8:00p JFK → 10:00a FRA	8h 00m			KLM Cityhopper operates flight 1764. Delta operates flight 3647.
			Show details					
★	\$498 United		United	5:10p FRA → 7:55p JFK	8h 45m	nonstop	nonstop	Economy
	View Deal			4:05p JFK → 5:35a FRA	7h 30m			Lufthansa operates flight 8843, 8840.
			Show details					

While Online Travel Agents (OTAs) are now an established distribution channel, currently meta search engines (like Google and tripadvisor) are an emerging indirect distribution channel that provides new shopping experience to travelers

A recent analysis from the Open Axis Group (2010) shows that while travelers can go through OTAs to search and purchase air tickets, they cannot get full information about the value they purchased.

Whilst traditional travel retail channels have their own niches in some specific segments (Shon et al., 2003), Airline websites and OTAs dominate the majority of tickets sales in many

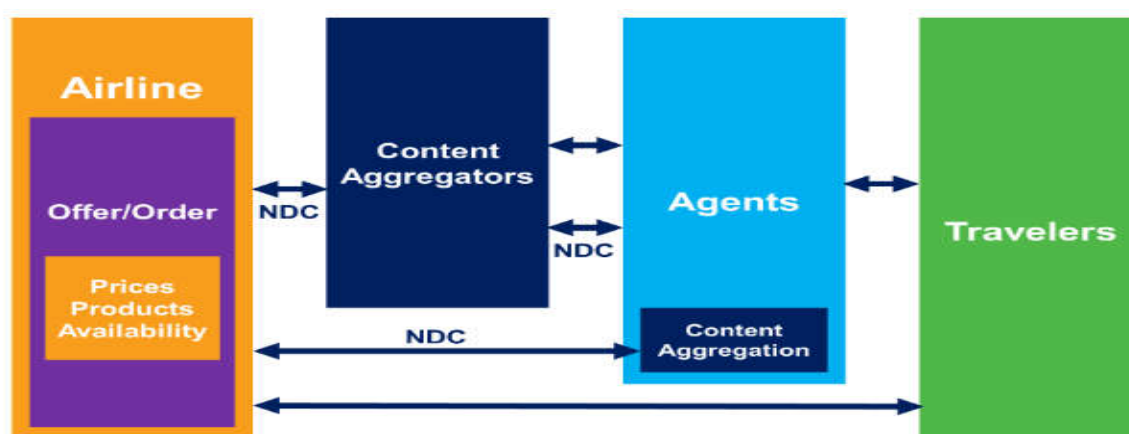
markets, and it is predicted to continue growing (O'Connell and William, 2011). However, there are inherent limitations built-in the current distribution standard that might restrict airline websites and OTAs to grow (Open Axis Group, 2010). Furthermore, past research has shown that legacy airline business strategies, such as GDS by-pass to exclude downstream players or vertical integration to compete with rivals, have created a negative impact on the business performance of airlines (Cheng et al., 2012).

2.4 The role of GDS and GDS Companies

A Global Distribution System (GDS) is used as a primary reservation tool that enables third party intermediaries (mainly travel agencies) to access schedule, allotment and price information, create reservations and issue tickets in real time (Coza, 2014). There are three important GDS companies that are known worldwide; Travelport (Galileo, Apollo, Worldspan), Amadeus and SABRE (Coza, 2014). Other GDS of more regional importance are Travelsky, Infini and Topaz.

In today's airline distribution, airlines together with third parties (OAG/ Innovata and ATPCo) file fares and schedules and deliver those to the GDSs. Allotment information are made available in the GDS through an online interface between the airline's CRS and the GDS. Travel agents then will search for schedules, available flights and prices in the GDS and finally create a reservation in the GDS. The GDS finally sends a copy of the reservation to the airline CRS and those will be the last party that know who have purchased the tickets (IATA, 2013). Please refer to figure 3.

Figure 3: Flight Distribution Today (Source: IATA, 2016d, pp. 11)



GDS has facilitated airlines in selling their products and still approximately 50% of airline bookings are channeled via a GDS; this means that the GDS has still a significant role in the

airline indirect distribution channel (Harteveldt, 2012). Airlines used to pay a US\$12 booking transaction fee per segment to the GDS. As a matter of fact, in 2012, the Economist estimated that approximately US\$7 billion was paid by airlines as GDS fees being double the industry's net profit expectation for the year.

2.5 Limitations of the current distribution system

While GDS have been taking a significant role in distributing air products from airlines to travel agencies, many observers (e.g. Coza, 2014) estimate that the GDS will no longer be used by 2020. High booking fees and the inherent technical limitations of the distribution system (esp. the limits of today's interfaces and communication standards: Type A/TTY and Type B/EDIFACT) are two main concerns of the airline industry that might lead to the use of the new system or standard in airline distribution (Harteveldt, 2012).

Today the current indirect distribution channel has several major limitations:

- Product commoditization: Airlines cannot personalize their products and services based on customers profile and history (Open Axis Group, 2010). As a consequence the airline's products are fully commoditized and airlines can only compete with other airlines based on two criteria: price or schedule (Open Axis Group, 2010).
- Lack of transparency: The resellers cannot provide transparency of the fares family as provided by airline websites channel (Open Axis Group, 2010).
- No access to rich airlines content: Travel agents cannot provide rich content (e.g. frequent flyer, inventory, and pricing system) as presented in airlines websites to customers (Hoyles, 2015). As a consequence the sale of ancillary products through travel agencies is currently not possible (IATA, 2016a).
- Limited supplier control: Airlines can control and steer their intermediaries only to a limited extend (Open Axis Group, 2010).
- Legacy technology and long development cycle: The technology used by GDS is limited and incompatible with internet-based (XML, web-service) distribution system owned by the airlines (Open Axis Group, 2010).
- Delay of transmitted data (Hoyles, 2015).

3. AIRLINE DISTRIBUTION IN THE FUTURE

3.1 The IATA initiative: New Distribution Capability

In early 2012, IATA member airlines agreed during the 34th Passenger Agency Conference in October 2012 on a new program called New Distribution Capability (NDC) to solve limitations of the existing programs in the distribution system and to represent the modernization of air travel distribution (Popovich, 2016).

Hoyles (2015) defines: "NDC is a travel industry-supported program (NDC Program) for the development and market adoption of a new XML-based data transmission standard (NDC Standard)" (Hoyles 2015, p. 4).

This NDC standard is created to enhance communication capability between airlines' computer reservation systems and other participants (e.g. travel agents) in the airline distribution environment. Furthermore, NDC is designed as an open standard also enabling communication between airline systems and technology providers, intermediaries, resellers or other third parties (Hoyles, 2015).

Rationale for this new standard is the IATA Resolution 787 (IATA, 2012) that was adopted by airlines during the 69th IATA Annual General Meeting on June 3rd 2013 in Cape Town. The scope of the resolution is "a standard process [...] for airlines to create their own product offer within their own systems (i.e. assemble fares, schedules and availability – all in one transaction) which will be provided directly by and owned by the airline" (Tyler, 2013).

3.2 Advantages of New Distribution Capability

NDC addresses various limitations of the current system shifting from a technology-centric to passenger-centric shopping and booking experience (IATA and Atmosphere Research Group 2016). In particular it would accomplish so by

- providing travel agents with the same capability as airlines' websites, allowing the sale of all primary, ancillary and promotional air products with more information for the passenger on each product with regards to expected facilities and transparent policies of the products purchased (IATA, 2016a),
- enabling airlines (full service and low cost carriers) to differentiate their products and services to be retailed to different customers (individual and corporate customers) (Hoyles, 2015),

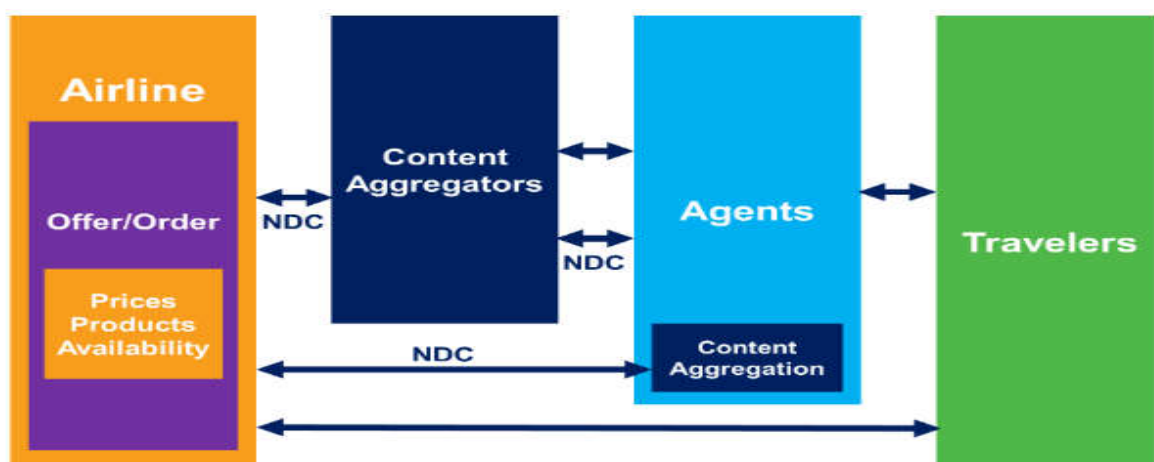
- helping content aggregators and travel resellers to have access to full and rich contents of the airlines (Hoyles, 2015), and
- providing corporate buyers and leisure travelers a new online shopping experience with a lot of unique and personalized features as they find on retail websites (Popovich, 2016).

NDC will help to replace the outmoded distribution components and help develop the airline distribution system from an airline reservation system to a full retailing platform including real time data, “frictionless” payment transactions and state-of-the-art mobile access (IATA and Atmosphere Research Group 2016).

The NDC standard will also enable airlines CRS to communicate with other airlines’ CRS, e.g. Low Cost Airlines who were not using IATA standards for the distribution process (Hoyles, 2015).

To make this concept work, a collaborative approach among the players is highly needed. All players in the industry including airlines, travel agencies, OTAs, GDS, corporate customers, and IT solution providers must work together to ensure that NDC can be implemented and run by all in any circumstances (IATA and Atmosphere Research Group, 2015). Please, refer to figure 4.

Figure 4: New distribution system (Source: IATA, 2016d, pp.12)



In providing the end-to-end process in airline distribution, the NDC Standard divides the key functional domains into three scopes or schemas (Hoyles, 2015):

- NDC Shopping, by which airlines can provide rich content and personalization in offering both core and ancillary products and services;
- NDC Order Management (Booking, Payment & Ticketing, Servicing, Interlining, Reporting, Settlement & Accounting), which provides new capability to airlines in managing order lifecycle between airlines and resellers covering booking & servicing and payment & ticketing;
- NDC Airline Profile, which enables the routing of direct requests from the market to the airline.

Besides, airlines are able to directly communicate with their airline partners through NDC features called NDC Shopping and NDC Order Management (Hoyle, 2015).

3.3 Regulatory Aspects and Critique

Since the beginning of the development of the standard, several areas were criticized by different industry stakeholders (Tyler, 2013). The focus was on three of them:

- NDC would contravene privacy laws
- NDC would bypass travel agents and
- NDC would eliminate comparison shopping.

Several travel agent associations have looked into possible privacy law contraventions by the NDC standard and have addressed this issue to regulatory bodies. The European Travel Agents' and Tour Operators' Associations (ECTAA) followed the launch of NDC and participated in hearings of the "Article 29 Data Protection Working Party", an EU advisory body on data protection matters and met with Member States' Data Protection Attachés and the European Data Protection Supervisor. ECTAA addressed data protection concerns to raise awareness on NDC, its incompatibilities with Data Protection provisions and in this respect asked for guidelines (ECTAA, 2014). ECTAA underlines that in Europe, agents are particularly concerned regarding NDC compliance with the EU data protection legislation (ECTAA, 2015). After consulting with several industry associations, the Working Party responded that the NDC initiative may result in a remarkable change in terms of personal data processing associated with operational practices in the air travel market. Because of the uncertainty of the initiative's development, the Working Party does not see itself in a position to adopt a formal opinion on the issue, but will keep it on its agenda (The Article 29 Data Protection Working Party, 2014).

In the United States the American Society of Travel Agents (ASTA) commented regarding IATA's NDC application with the US Department of Transport (DOT) with an answer to IATA's application serious privacy concerns associated with NDC. The initiative gives the appearance of an unprecedented agreement among horizontal airline competitors on a new business model for the pricing and selling of airline tickets (ASTA, 2013a).

With regards to lack of comparison shopping with the NDC initiative, ASTA noted in its answer that NDC appears to have been designed for the purpose of defeating the fare transparency that the airlines and IATA have publicly confirmed has constrained their ability to raise the prices consumers pay. ASTA quoted that "the most important attribute of the GDSs is their role as industry aggregators." Further "the GDS was essential for comparison shopping, and [...] being able to shop multiple airlines and hotels enables the agent to offer real value to a customer" (ASTA, 2013a).

As part of this discussion, IATA and Open Allies for Airfare Transparency (representing GDSs, travel sellers and other stakeholders) filed in January 2014 a joint motion with additional conditions for approval of Resolution 787 with the DOT (Airlines International, 2014, Airline Business, 2014).

Whilst ASTA recommended the rejection of IATA's NDC application (ASTA, 2013b), the DOT tentatively approved the resolution subject to conditions. Resolution 787 will "create modern, industry-wide technical standards and protocols for data transmission throughout the distribution chain, promoting efficiency, cost savings, and innovation through a real-time exchange of price and service information among carriers, travel agents, customers, and other parties, such as web-based aggregators" (DOT, 2014).

4. EMPIRICAL ANALYSIS

4.1 Data collection

In 2016, an online survey on the future of airline distribution was conducted among 100 airline distribution experts and 43 experts provided their answers¹.

The distribution of the respondents in term of economic sector is the following:

- 48% were from airlines, mainly in top management positions (e.g. in the area General Management, Distribution, Sales and Marketing, etc.);

¹ Please refer to Annex A for detailed results of the survey.

- 24% were System Providers;
- 7% were in Universities;
- 4% worked for Government Agencies & NGO
- 2% were Travel Agencies
- 15% were in the residual class "Other"

The survey included two closed and two open questions. In particular, the closed questions allowed the interviewee to provide a 5 scale Likert-Type Response (0=Not at all, 5=very much). On the other hand, in the open questions, the respondents were allowed to rank up to five answers (i.e. I = most important, II = second most important, III = third most important and so on). Three answers were mandatory with the option to give two more answers. The answers have been then clustered and weighted. As for the weight, in particular, every answer mentioned as the most important received 5 points, the second important one 4 points, the third important 3 points and so on.

4.2 Presentation of the results

The closed questions produced very important insights in term of assessment of the importance of the NDC and its perceived development stage. In particular, asking airline experts about their opinion whether the current NDC initiative is an important development for the airline distribution industry, the average answer on a scale between 1 ("not at all") and 5 ("very much") is 3.9. Even more important is the distribution of the answers, with more than 73% of the interviewees agreeing on the fact that NDC could realistically represents a turning point for the airline distribution industry.

The second question, as anticipated before, was aimed at assessing the perceived level of development of NDC and asked if the NDC initiative is either already offering or has the potential to offer the right measures to cover current and perspective issues in the industry. In particular, being asked whether they see the NDC initiative *is already offering* the right measures to cover today's issues, the average answer is 2.6. This result confirms that market experts believe that NDC is still in its infancy, especially from a technological standpoint, since almost 83% of the sample answered 2 or 3 on a 5 scale Likert (1= Not at all; 5 = very much). However, when the *potential to develop* is taken into account, the group has certain trust in the IATA initiative and believes with an average answer of 3.7 that NDC can solve tomorrow's challenges in the airline distribution industry. Thus, combining the two results above, we can conclude that albeit the IATA proposition is still perceived as far from being an answer to

today's issues, it certainly has the potential to represent, in the foreseeable future, a major breakthrough in the airline distribution industry.

The first open question builds on the previous insights and is aimed at understanding what the most critical areas in terms of future development for the industry are. In this regard, the top five items mentioned were:

1. NDC and its customer use;
2. economic model behind airline distribution;
3. cost for development and implementation of new technologies;
4. distribution of ancillary airline products and services; as well as
5. the airlines' ability to control their content in distribution channels.

More specifically, through the analysis of the individual observations, we inferred that when the panel was asked to rank their first most important point of concern, the actual and perspective economic model of the industry as a whole was the most important (business issue), while the data volume related to search and analysis (technological issue) was the close second. NDC and its customer use, being aimed at solving the current business issues through technological innovation, obviously raise some doubts among the panel as far as the current business model is concerned, albeit the same experts recognize its potential value in the next future. This is consistent with what we observed before about the second closed question.

The panel concurred that "security and anti-fraud" as well as "distribution of ancillary airline products and services" are the second most important current issue for the industry. Again, aside from the technological aspect of the concern, the NDC proposition clearly addresses the issue of marketing and distributing ancillary products.

In full support to our last observation, we also noticed that the panel indicated the "airlines' ability to control their content in distribution channels" as the third most important critical factor. Again, the NDC, as largely discussed in the previous sections of this work, will offer a new approach to content dissemination, and in doing so, it will constitute a valid option for overcoming the major limitations of today's distribution channel.

In order to offer a more comprehensive perspective on the airline distribution industry, the last open question regarded the perceived core developments occurred in the past. The first

three answers ranked by the experts show a high level of concentration around the following themes:

1st answer: i) Development of GDS and ii) CRS & ATPCo (auto price function);

2nd answer: i) Airline Online Sales Channels and ii) IATA resolution 747 (NDC);

3rd answer: i) Development of E-Ticketing and OTAs (e.g. Orbitz)

As it is possible to infer, despite being still in its infancy stage, NDC has been already ranked among the core development of the industry.

5. IMPLICATIONS

5.1 For airlines

In the future, by the use of NDC standard, airlines will have wider opportunities to directly interact with intermediaries and reduce commission fees to the GDS. Instead of reducing commission fee that must be paid by airlines to GDS, some people argue that NDC will also create more costs to airlines running the program. Initially airlines have to allocate big investment into this new system, albeit, currently it is unclear how much the cost will be for the airlines (Newcombe, 2014). For many airlines this uncertainty still represents a major concern especially considering their limited financial resources. In addition, many smaller airlines are not even aware of this drastic change and the impacts for their distribution strategy and business models. However, for LCC the new standard offers an opportunity to enlarge their business model towards a hybrid strategy and include indirect channels in their distribution strategy (Klophaus et al., 2012).

5.2 For GDS Companies

As for the impact on GDS companies, Svend Leirvaag, Amadeus vice-president, claimed that IATA has derailed air travel industry with NDC questioning its capability to provide rich content to travel agencies, to allow a transparent shopping experience for the customers (Travolution, 2013), and to help creating efficiency in the industry. He expressed his disagreement and resistance towards the NDC program at the CAPA World Aviation Summit 2015 in Helsinki. He was also skeptical, if NDC would be able to deliver the promised results (Taylor, 2015). In this regard, the Global Business Travel Association (GBTA) assumes that the planned airline “profiling” in NDC will disadvantage business buyers and cause differentiated pricing for travelers (Ferguson, 2016). In addition, the revised distribution platform in NDC will lead

airlines to adopt more direct marketing and sales strategies that will significantly change company travel policies for business travelers (Ferguson, 2016). In the same vein, Elisabeth Martins, Sabre UK commercial director, is questioning the NDC's ability in creating transparency. She is saying "We have serious doubts about transparency and the ability to compare prices. If someone in the industry is on top of technology it is the GDSs, not the airlines" (Travolution, 2013).

These first reactions from GDS companies were caused by uncertainty with regards to the future development of the core business model. Obviously there is a risk that some GDS companies will be reduced to the role of a mere aggregator.

5.3 For travel agents

As NDC will enable travel agents to sell the same product range (esp. ancillary products) that airlines offer already today in their direct distribution channels, they will remain in the relevant set of sales points for the buyers and can continue development their own business model based on a full content opportunity.

Due to the shift in power away from the GDSs companies back towards the airlines, it is expected that the kick-backs from GDS companies to travel agents will disappear and possibly be replaced by incentive payments from the airlines. The first steps into this direction have been taken by Lufthansa through charging travel agents for GDS reservations with 16€ (Bryan, 2015).

IATA and Atmosphere Research Group 2016 state in their paper on the Future of Airline distribution that third-party retailers remain in the distribution mix while airlines expect their direct channels to account for 45% of reservations by 2021 (IATA and Atmosphere Research Group 2016).

Online Travel Agents (OTAs) will need to adjust their system with NDC or use an aggregator. This adjustment needs more efforts, cost, and time, but in the end this will benefit them by being able to provide more convenient features to customers in getting new air products shopping experience (O'Neill, 2013). This is also valid for Offline Travel Agents. Long term all travel agents will have cost benefits from a more efficient distribution system. There will be a threat, too, from new disruptive entrants like CAFGA² for travel agents (and GDS companies, too).

² Concur, Apple, Facebook, Google and Amazon.

5.4. For Travelers

An IATA study from 2015 stated that passengers would welcome NDC. More than 75% of air travelers said that compared to today, NDC-based displays would make it easier to compare and understand flights, prices and costs. More than 70% of business fliers and 65% of leisure fliers would be more likely to purchase optional airline services (Airlines International, 2015).

5.5. Other participants in the airline distribution chain

In addition, the NDC roll-out will also involve IT providers that directly support the airline distribution system, and this is automatically leading to supplementary works for IT companies (O'Neill, 2013). Besides, NDC and the change in airline systems will also impact Airline Tariff Publishing Company (ATPCO), OAG (Air Travel Intelligence), and other fare filing companies (O'Neill, 2013).

5.6. For new and/or disruptive Industry Players

In 2014, IATA launched in cooperation with investment firms a five million US-dollar NDC Innovation Fund (NDCIF) to attract start-ups to NDC and to provide opportunities for an innovative travel industry (Airlines International, 2014). In 2016 and after one shareholder of the NDCIF withdraw its participation due to current economy and market conditions, IATA was seeking new investors (Airlines International, 2016b).

While airlines in the past focused on their established direct and indirect distribution channels, new players having no history in airline distribution but in e-commerce, are today scrutinizing the system (Harteveldt, 2012):

- Concur with its travel reporting software "TripIt" enables customers to consolidate their travel plans in one "Super-PNR", collecting massive volumes of customer data and insights that no transport or travel service provider could collect itself. Eventually Concur may sell this passenger intelligence to airlines and other interested stakeholders in passenger travel.
- Apple offers with passbook a virtual wallet solution which stores various documents and information of the customer such as frequent traveler cards, boarding passes and other admission tickets. By offering the consumer an easy and functional solution, Apple puts itself between the airlines and the customers, is collecting additional information about the customers and may commercialize the airlines' access to the customer.

- With its giant social media platform, Facebook is collecting as many details as possible from its users, including search and geographic data. In combination with its ability to process shopping transactions, Facebook would be able to create a travel value platform that could pit airlines against intermediaries to reach travelers, knowing exactly the interests and needs of its users.
- Google has built a virtual environment with social media platforms, operating systems, hardware, online stores, data aggregating and meta search solutions and much more. Being so deeply and widely integrated into the traveler's everyday life, Google may facilitate or interfere with the relationship an airline has with its customers – controlling the channels an airline could use to have access to its customers or even monetize the access.
- Besides its own wallet solution, Amazon has defined the customer's e-commerce experience and expectations. Eventually, Amazon may directly enter the airline distribution arena; until then it surely hosts travel websites on its Amazon Web Services and continues to influence the way customers want to shop.

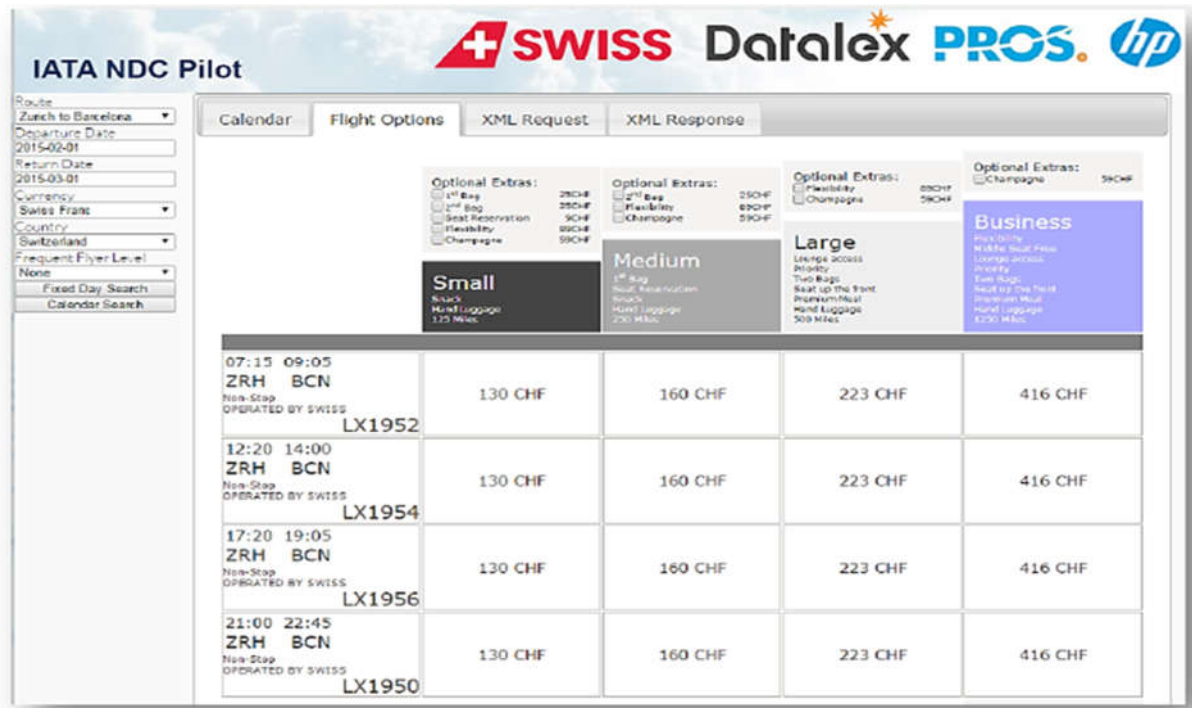
6. THE IMPLEMENTATION OF NDC

In 2014, there have been 8 airlines participating in NDC pilots and 3 airlines in live transactions. Participating airlines shared their findings in implementing NDC covering the themes of project startup wins, schemas, handling rich content, and the offer management concept. Besides, new implementers also requested IATA use cases illustration through sample schemas instances (Drake, 2015).

Swiss International Air Lines (LX) is one of the participating airlines in a NDC Pilot in cooperation with three leading IT providers; PROS, Datalex, and HP Enterprise Services. They launched the project to demonstrate integrated merchandising, revenue optimization, and fulfillment against the SWISS CRS/PSS for an agency point of sale (Drake, 2015). Please, refer to figure 5.

Within two years, there is a significant increase in the numbers of airlines and travel agents deploying NDC. In 2015, as it is possible to infer from the following figure 6, there have been 16 airlines participating in NDC pilot and 11 of them have delivered live transactions (Courtas, 2016). Besides, airlines have also already implemented NDC functionalities; 12 airlines

implemented offer and order management, 3 airlines implemented offer management, and 1 airline implemented post booking ancillary (Courtas, 2016).



Airline	IT Providers/Aggregators*	Travel Agent(s)
Aer Lingus (EI)	Airline IT department	Club Travel
Air China (CA) →	Travelsky Technology Limited	China Air Service
American Airlines (AA) →	Reserve, Farelogix	Copastur
British Airways (BA) →	Airline IT Department	Skyscanner, other undisclosed agent
China Southern Airlines (CZ) →	Airline IT department	Ctrip
Flybe (BE)	Hewlett Packard Enterprise, Travelfusion*	Selected travel agents through Travelfusion
GOL Linhas Aereas (G3) →	Navitaire, Reserve*	Flytour, Rextur-Advance
Hainan Airlines (HU) →	Travelsky Technology Limited	CTBA
Heli Air Monaco (YO) →	Resiber, APG-Orchestra	To be coming
InselAir (7I) →	JR technologies, SITA	InselAir affiliated TMC
Qantas (QF)	Airline IT department	Selected travel agents through Helloworld
Qatar Airways (QR) →	Farelogix	GTV Tours
Rotana Jet Aviation (RG) →	TPConnects*	Asia Group of Companies (Asia Travel)
Scoot (TZ)	Navitaire, Travelfusion	TBC
Shandong Airlines (SC) →	Travelsky Technology Limited	Qingdao Huajun Air Service
Siberia Airlines (S7)	Openjaw, Ontravelsolutions	Onetravel Minsk

Beyond NDC pilots, a number of airlines have implemented the NDC standard for a specific business case (IATA, 2016b):

- British Airways has implemented an NDC based communication with Skyscanner for metasearch search and sale for British Airways ancillary products (Skyscanner, 2015).
- Condor has implemented order and offer management for its new reservation environment for UK travel agents (Pribas, 2016).
- Emirates has implemented NDC shopping schemas to provide access to its ancillary products (Emirates, 2016).
- Seven Asian low cost carriers joined a pan-regional low cost carrier alliance and use an interline platform with NDC standard to exchange flight schedules and ancillary product information (Cebu Pacific, 2016, ATW, 2016).
- United Airlines implemented shopping schemes to sell dynamically-priced Economy Plus seating (IATA, 2016c).

7. CONCLUSION

Airline distribution systems keep changing in accordance to market trends and technology. Approximately 50% of all airline bookings are nowadays generated via internet-based direct distribution channels such as airlines' websites, taking away bookings from the indirect channels which had managed around 80% of the bookings in the past.

Cost in selling tickets through indirect channels is 20-times more expensive compared to direct channels due to the fees that have to be paid by airlines to the intermediaries. To avoid these costs, most low cost carriers focused on sales through their own website. However, airlines websites cannot be used by network airlines to sell their airline partners' tickets without involving a GDS. GDS is still playing a significant role for mainly full service airlines to generate more revenue from selling other networks. Besides, GDS also enables travel agencies to sell tickets of different airlines. On the other hand, GDS has no capability to provide travel agents rich content as found in airlines website. Therefore, high booking fee and the other limitations of the GDS become two main concerns of the airline industry that might lead to the use of new system or standard in distribution channel.

To respond to the current situation and future anticipation, IATA has initiated a new airline distribution standard called New Distribution Capability (NDC). NDC is not a new system to replace the GDS, but a communication standard enabling airlines, IT providers, and resellers (mainly travel agencies) to work together on new distribution capabilities.

NDC promises a lot of advantages to the industry: product differentiation, faster delivery and promotion of new products to the market, personalization on specific products and customers, and an access to full and rich content of the airlines. Travel agencies and resellers will be able to do product and service comparisons among airlines, and customers will get a transparent shopping experience.

But the implementation of NDC will also create consequences for airlines, GDS companies, travel agents, IT providers and new entrants. Some people argue that NDC will create high cost for airlines as they will have to allocate big investments to this new system. The introduction of NDC is predicted to weaken the position of the GDSs. Besides, travel agents fear that NDC will enable airlines to directly charge booking fees to travel agents that could result in higher cost for the travelers. Online travel agents have to invest more money, effort, and time to adjust their current system to the NDC standard.

By combining the insights gained through the non-empirical literature review section with the empirical results from our airline business expert survey, we tentatively describe NDC's strengths, weaknesses, opportunities and threats in the following table.

Table 1: NDC SWOT Analysis

STRENGTHS	WEAKNESSES
▪ Passenger-centric business concept: passengers have a more customized shopping experience ▪ Enables airlines to present and package their products in a more complete way (e.g. Ancillary products) ▪ Providing travel agents with the full access to airlines' rich content ▪ Reducing distribution fee commission ▪ Enhancing close collaboration among the players ▪ Enabling direct communication between airlines, travel agents and passengers	▪ Requiring system adjustment from airlines and travel agents resulting in costly investments ▪ Old technology is stable and makes a fast exchange of information possible; new and complex concept might lead to instable transactions ▪ Compliance to EU data protection legislation

OPPORTUNITIES	THREATS
▪ Industry sees the potential of NDC, but acknowledges that a technological and business gap has to be filled ▪ Fostering simplification of business processes ▪ Airlines are able to redefine the value chain ▪ Opening of new revenue sources for airlines ▪ New market opportunities for newcomers such as Concur, Apple, Google, Amazon, and Facebook	▪ Technical integration might be challenging ▪ Improper implementation due to lack of education and planning ▪ GDS might improve their own capability for trading ancillary products by updating their It systems and mobile compatible software tools ▪ Loss of revenue for the GDS ▪ Biased offer for business and private travelers/ travel agents

Since 2013, IATA initiated the deployment of NDC Pilots and the numbers of airlines participating in these pilot projects have been increasing year over year. By 2015, there have been 16 airlines participating and 11 of them have been engaged in live transaction. For a better implementation in the future, the participating airlines publically share their technical and non-technical findings with IATA to enable further improvements.

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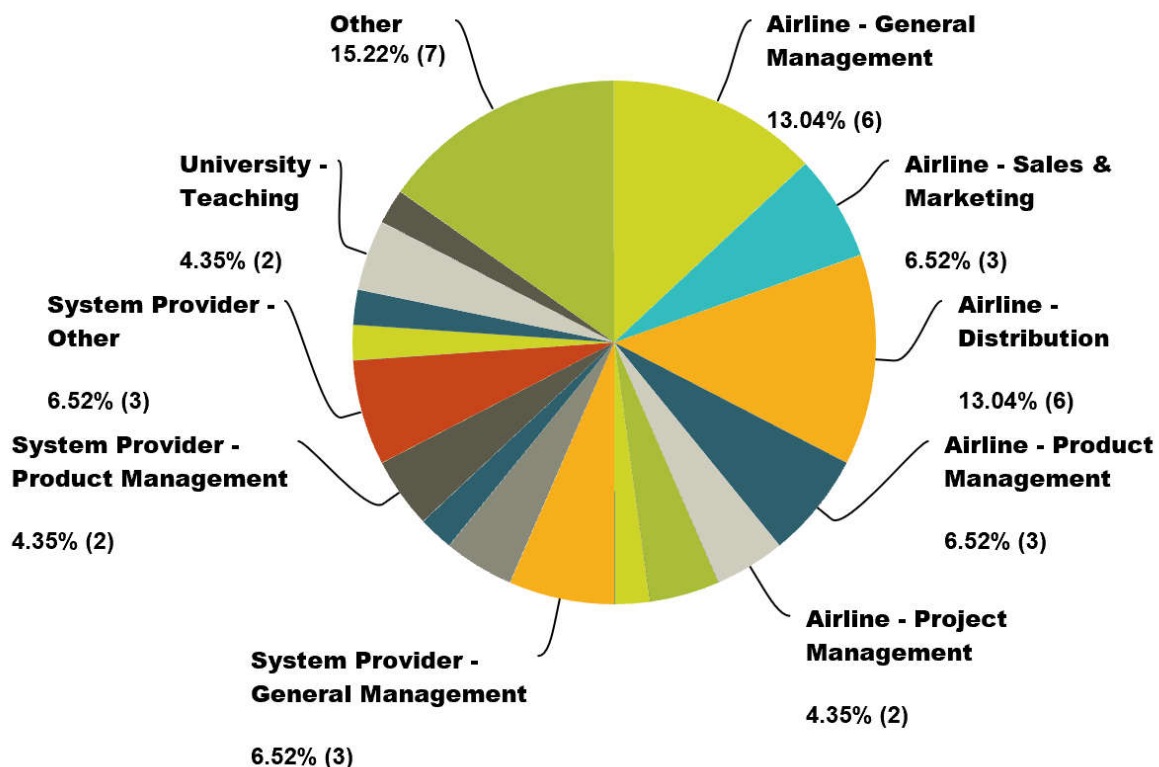
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Annex: Results of the Online Survey

The online survey was conducted with Airline Distribution Specialists during March 2016 through Survey Monkey. A total of 46 responses were collected.

From those 46 responses, 22 came from specialists working in the airline industry, 11 from specialists working for system providers, 3 from universities, 2 from Government Agencies or NGOs and one from a travel agency. 7 responses came from specialists working in other industries.³



Role	Responses	
Airline	47.84%	22
Airline – General Management	13.05%	6
Airline – Sales & Marketing	6.52%	3
Airline – Distribution	13.05%	6
Airline – Product Management	6.52%	3
Airline – Project Management	4.35%	2
Airline – Other	4.35%	2

³ The following graph and table shows only those categories that were mentioned by at least one specialist.

Travel Agency	2.17%	1
Travel Agency – Distribution	2.17%	1
System Provider	23.91%	11
System Provider – General Management	6.52%	3
System Provider – Sales & Marketing	4.35%	2
System Provider – Distribution	2.17%	1
System Provider – Product Management	4.35%	2
System Provider – Other	6.52%	3
Government Agencies & NGOs	4.34%	2
Government – Standards & Regulation	2.17%	1
NGOs – Other	2.17%	1
Universities	6.52%	3
Universities – Teaching	4.35%	2
Universities – Research	2.17%	1
Other	15.22%	7
TOTAL	100%	46

During the survey the participants were asked their opinion about today's and tomorrow's importance of IATA's New Distribution Capability (NDC) Program by choosing the corresponding value on a scale from 1 ("not at all") to 5 ("very much") or 0 ("I don't know").

The first question asked was: **"Do you consider the current NDC initiative being an important or very important development or milestone for the airline distribution industry?"** The average of all 46 answers was 3.93:

"Important or very important development or milestone"						
Not at all 1	2	3	4	Very much 5	Don't know 0	Average
0	6	6	19	15	0	3.93
0%	13.04%	13.04%	41.31%	32.61%	0%	

The second question asked was: **"Do you see the NDC initiative already offering or having the potential to develop the right measures to cover today's issues and to solve tomorrow's challenges in the airline distribution industry?"** The average of all

46 answers with regards to the question whether NDC is already offering the right measures was 2.58, while the average with regards to the question whether NDC has potential to develop the right measures in future was 3.76:

"Already offering"						
Not at all 1	2	3	4	Very much 5	Don't know 0	Average
2	22	16	3	2	1	2.58
4.35%	47.83%	34.78%	6.52%	4.35%	2.17%	

"Potential to develop"						
Not at all 1	2	3	4	Very much 5	Don't know 0	Average
1	4	13	14	13	1	3.76
2.17%	8.70%	28.26%	30.43%	28.26%	2.17%	

In form of an open question, the 43 airline industry specialists were asked: **"What are – in your opinion – today's most important issues and tomorrow's challenges in the airline distribution industry?"**.

Participants were allowed to give up to five answers to this questions with the first answer being the most important, the second answer the second most important, the third answer the third most important and so on. Three answers were mandatory with the option to give two more answers. The answers were then analyzed, arranged in groups and weighted: every answer mentioned as the most important received 5 points, the second important one 4 points, the third important 3 points and so on. All points for the answers in one group were then summed up. The five mostly mentioned areas with highest importance were:

Grouped Items and Topics	Weight
NDC and its customer use	58
The economic model behind airline distribution	53
Cost for development and implementation of new technologies	47
Distribution of ancillary airline products and services	37
The airlines' ability to control their content in distribution channels	29

Detailed answers were:

To complete the picture, this question was combined with another open question to the specialists: **“What are – in your opinion – the most important past developments and milestones in the airline distribution industry?”** The answers were again analyzed, arranged in groups and weighted as described above. Detailed answers were:

mentioned x times as Grouped Items and Topics	1st answer	2nd answer	3rd answer	4th answer	5th answer	Result
NDC and its Customer Use	5	3	5	2	2	58
The economic model behind airline distribution	7	1	1	4	3	53
Cost for development and implementation of new technologies	4	3	3	3		47
Distribution of ancillary airline products and services	2	4	2	2	1	37
The airlines’ ability to control their content in distribution channels	1		8			29
Security and anti-fraud		5	2	1	1	29
Data Volume for Search and Analysis	5			1		27
GDS Monopoly Disruption (“LH 16 EUR GDS Fee” Case)	2	1	2	2	1	25
Reduction in Complexity	2	2	1			21
Further Development of Mobile Commerce and Social Media	1	1	2	2	1	20
Metasearch and “CAFGA”	2	1	1			17
Interoperability	1	2	1			16
Payment Solutions	2		1	1		15
Further (De)regulation	1	1	1	1		14
Real Time Pricing		3				12
Managing Transition		3				12
ONE Order		1		2	1	9
Optimizing Direct Channel Performance	1		1			8
Price Transparency and Competition	1		1			8
Product Differentiation		2				8

mentioned x times as Grouped Items and Topics	1st answer	2nd answer	3rd answer	4th answer	5th answer	Result
Development of GDS	9	4	2	2		71
CRS & ATPCo (auto price function)	8	6	1	1		69
Airline Online Sales Channels	5	6	3	2	1	63
Development of E-Ticketing	5	3	5	2	3	59
OTAs (such as Orbitz)	1	2	6	3	2	39
IATA Resolution 747 (NDC)	1	5	4		1	38
(De)regulation	2	2	3	2	1	32
Internet Technology	3	2		2	1	28
AIRIMP Standards	2			3		16
Sale of Ancillary Products		1	3	1	1	16
Mobile Booking Solutions	1	1		1	2	13
Low Fare Shopping Engines	1		2			11
Ticketless Solutions	1	1				9
Airline Alliances		1	1		1	8
Interline			2	1		8
EMD Standard		1	1			7
IATA StB		1	1			7
Safety	1				1	6
Discontinuation of Commission		1		1		6
Codeshare			1	1	1	6

PHILOSOPHICAL BLUNDERS WITHIN THE CARICOM AVIATION INDUSTRY

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ABSTRACT

The worsening state of affairs in the Caribbean Community (Caricom) aviation industry is undeserved. Philosophical blunders perpetuate the foremost regional state air carriers. The Regulatory Authorities lack the leadership zest to drive change. There is urgent need to re-visit the 1996 Multilateral Air Service Agreement (MASA) and re-engage Caricom Governments, State Air Carriers, and Regulatory Aviation Authorities to relight the region's aviation industry vision. Leaders must focus their collective effort towards a viable and dependable air transport industry infrastructure. The leadership miscalculations are causing weighty financial losses while adding to the air network deterioration.

Keywords: Philosophical Blunders; Leadership miscalculations; Caricom Aviation; Regulatory Frustrations

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1. INTRODUCTION

The situation within the Caricom regional aviation industry is becoming unwarranted. Caribbean Airlines Ltd (CAL) and Leeward Island Air Transport (LIAT) the key players serving the long-standing Caricom bloc are struggling to stay afloat. The pronounced Caricom regional aviation industry philosophical vision collectively agreed by the Caricom Heads of State in 1996 has not received traction. The leadership within airlines and regulatory authorities are not mindful of the collaborative Caricom ideology which sets the stage for a viable economic space conjointly driving progression for the regional citizenry. Regional commentators believe the leadership failures within state airlines are tied to political mandates.

This paper explores amongst others, the two crucial dynamics, airline philosophy and politics, and how the intermingling is frustrating progress and causing turmoil. State airlines continue with botched decisions, the outcomes annoying the travelling public. Conversely, many infant and emerging economies recognizing the need for growth have engaged into collaboration to open up aviation markets via step by step deregulation while inching towards open skies policies. Why is this pattern of affairs enduring within Caricom? Using regional airline cases supported by secondary sources, this paper attempts to unravel the lead up into the current status. The existing paradigm is contrasted with lessons from successful business models. Following the conclusion are forthright recommendations for the leadership.

2. THEORETICAL UNDERPINNINGS

Philosophy is idiosyncratic to individuals. To explain this phenomenon deeper is beyond the scope of this paper. In essence, a leader's philosophy, depending on the way that person is mystically (or not) and socially wired, will craft the way such a person adopt a leadership style at conducting the management and business activities. A person copying a philosophical or creative idea and proceed to implement such ideology is taking the organization towards a misfortune. Likewise, when all else fails and leaders are faced with strategic struggles, they have a tendency to mimic their past organizational directives at a previous firm. Firms are

unique, each with their own characteristics. Hence, the importance of the philosophical examination within the due diligence process on prospective top management hires. Even within the firm, this process is vital since persons may advance upward to become the CEO someday (Ivancevich 2004).

How the leader sees the world stems from rooted virtues. That vision may be quite different from the proposed firm's vision. However, the two can merge to form a hybrid and this may become the CEO's philosophical posture and that of the firm's working model. Therefore, knowing the circumstances behind a Leader's thinking is crucial to organizational outcomes. Furthermore, the Human Resource (HR) Management Philosophy is more about the developed leadership style of the top management, the trickle down corporate culture, and values. The philosophy determines how the mission or a purpose and objectives are to be achieved. The passion for success is what fuels everything. Shared passion, that shared belief, is what motivates employees and other stakeholders, gives them the sense of belonging, and excites them about accomplishing the same mission and being a part of the movement. Ultimately, it is all about the philosophical vision of the leader of the organization (Ivancevich 2004).

3. BACKGROUND IN THE FOREMOST CARICOM STATE CARRIERS

We spend very little time trying to figure out the philosophy of the leaders within the firm. What is their background? What are they thinking about? Where did they get those ideas from on how to run the organization? Did they succeed or became a failure at the previous work place? Do they have any passion for the business success? What are the leader's vision, mission or purpose, and objectives for the business? In what direction is the leader heading? You need to ask many more questions to get a pattern of their habits and expectations. At British West Indian Airways (BWIA), an airline enduring for more than six decades, a foreign CEO was hired to re-engineer the airline and create a so-called, "new airline."

BWIA airline had a chequered history inclusive of countless management turnover, multiple visions, missions impossible with a limited aircraft fleet, full government control to a private partnership divestment failure and back to full government control. And not forgetting a hurried Initial Public Offering (IPO) to stave off serious debt, and ultimately removed from the securities market due to a precipitous share value resulting in catastrophic failure (Browne 2003). At no time over the last two decades the airline ever took a clear direction until its demise in 2007. These events had most employees confused, helpless, and unable to contribute to any turnaround. All the healthy recommendations together with countless appeals from stakeholders for re-structuring BWIA went unresponsive. Such was the importance of the airline. After a lifespan of 66 years this major carrier was on its way to becoming extinct. The news shook the Caribbean (ATW 2006).

The process of re-engineering the airline began with the hiring of a foreign CEO in March 2006 (Morris 2006). By September 2006, in collaboration with the CEO, the decision of a full closure was agreed and sanctioned by the Government of Trinidad and Tobago (T&T). The pride of the Caribbean was to be laid to rest and re-incarnate into the new entity called Caribbean Airlines Ltd (CAL) in January 2007 (ATW 2006). After the announcement speculative rumors were flying system-wide in the organization. Feeling insecure, the brain drain of the brightest and best skilled employees began since there was absolute silence on the CEO's strategic moves. His strategic re-engineering method commenced with the planned closing down of the present operational airline, lay-off the entire thousands of devoted staff, and re-hire bare minimum using an external hiring agency. Some of the new policies and procedures included disbanding seniority, dispersing all the "watchdog" unions, introduction of informal appraisal systems, individual employment contracts maximizing the human resources, disposal of selected airline assets and non-productive routes. A key operational objective was to create an altered culture of maximum productivity (Morris 2006).

The European CEO left Trinidad, the home base of CAL, soon after the new entity was established. His local Trinidad subordinate replacement followed a similar strategic direction. A major decision he undertook was to replace the Bombardier Dash 8 turbo-propeller airplane fleet with the French ATR turbo-propeller airplanes. With the continued losses into millions of dollars, the challenges with the merger of Air Jamaica, employee dissatisfaction, frequent breakdowns of the ATR fleet, and numerous customer complaints, the replacement CEO was forced to exit CAL after serving one year. The signs evolved of unmanageable operational failure (Sheppard 2010).

Surprisingly after his forced exit from CAL, he was now hired again by regional advocates to take charge of Leeward Islands Air Transport (LIAT), a multiple ownership regional state carrier (Trinidad Guardian 2012). This political appointed CEO brought his philosophical practices from CAL. To attempt profitability as a shareholder mandate, he progressed to disconnect some islands from the route grid. Again, to modernize fuel efficient assets and seek profitability, he undertook the major decision to replace LIAT Bombardier Dash 8 turbo-propeller airplane fleet with the French ATR turbo-propeller airplanes. The debate ensued throughout the Eastern Caribbean on the disconnection of islands when in fact the mission of the carrier is to connect islands (Daily Observer 2013).

Adding further agony to residents, the ATR airplanes are plagued with mechanical deficiencies disrupting planned schedules. This is coupled with aircraft performance issues emanating from the shorter flight island hopping schedules, topographical obstacles and airport infrastructure limitations. Again facing piles of complaints from stakeholders, this time from the Eastern Islands of the Caribbean and especially infuriating the shareholder Heads of those Island States; he was forced out from LIAT (Daily Observer 2013). That carrier should have been cognizant of his chequered past. LIAT remains a disorganized operator with dire financial constraints.

3.1 Current Status of CAL

Since 2007 to present, CAL's new business model and culture has tottered to gain the full acceptance with the employees and travelling diaspora. The new airline is in fact worse off today as declared by the T&T Government. CAL is manifesting into organizational pandemonium. It lacks leadership while highly dependent on the state for yearly subvention of hundreds of millions of T&T hard working taxpayers' dollars (Chan-Tack 2017). In spite of the yearly capital subvention it receives plus incoming operational revenue, in December 2013 CAL had a close call, as declared by the fired chief financial officer. CAL narrowly averted having 11 of its Boeing 767 - 800 aircraft seized by hurriedly securing a US\$50 million (TT\$320 million) loan from T&T First Citizens Bank to cover outstanding arrears owed to the International Lease Finance Corporation (Gumbs 2013).

CAL pressed in the T&T Parliament to answer and be accountable to the nation, the Finance Minister declared State-owned Caribbean Airlines is estimated to have lost US\$60 million for the year 2014 (Taitt 2014). Again being asked in Parliament to account on the airline's troubles, this time in 2015, the Trade Minister admitted the losses being suffered by CAL was due to the calamitous merger with Air Jamaica five years earlier. It has been hurting the airline ever since. To make matters worse for the travelling public, the airline announced effective January 2016 it's discontinuation of the London Gatwick service (Khelawan 2015c). The two used Boeing 767's cash purchased from LAN Chile specifically for the route could not stand up to the competition of major airlines with brand new technology. Hands tied by the Board of Directors and frustrated with political interference, the current CEO eventually left the airline (Harrinanan 2015).

In November 2017 CAL management faced the wrath of a Government of Trinidad and Tobago Parliamentary Joint Select Committee (JSC) investigation which demanded drastic organizational changes. The JSC stated, "CAL remains a backward public sector outlay, riddled with unprofitability, inefficiency, and a lack of transparency." Inclusive of route cuts,

recommended for action are management re-structuring, lay-offs, wage-cuts, wage-freeze, and possibly no more taxpayer subvention (Chan-Tack 2017; Newsday. 2017; Kowlessar 2017). The airline history is again repeating itself from BWIA's last days.

CAL CEO announced in January 2017 of wet leasing (with a full crew compliment) a Swift Air Airline ATR for three months to supplement the shortfall in services due to the on-going maintenance issues (La Rose 2017a). In December 2017 the ATR commotion continued within the airline with the most recent spill over impacting the air-bridge between the islands Trinidad and Tobago, operated solely by CAL. "CAL to use jets today" is headlined as the airline has found itself with thousands of standby passengers wanting to go back and forth between the islands. These consolidated services operated by the airline's Boeing 737 jet fleet, in consequence, has disrupted the airlines Boeing 737 international services. Since then the situation has worsened (Wayow 2016; Trinidad Express 2017). The air-bridge calamity has encouraged sit-in-protests at the airports as Tobago flights have been cancelled due to continued ATR maintenance issues and the non-availability of the Boeing jets (La Rose 2017b).

3.2 Current Status of LIAT

LIAT on the other hand has its unique leadership miscalculations and political challenges. There are strong links to the activities of the Regulatory Aviation Authorities (RAA) and the underlying frustrations faced by airlines and general aviation operators. In 2003, LIAT, state owned by the majority shareholder Governments of Barbados, Antigua and Barbuda and St. Vincent and the Grenadines, pleaded to heads from the Organization of Eastern Caribbean States (OECS) on the ineffectiveness of the RAA and blame those in the leadership for their woes. LIAT management continues to repeat, the old rules do not work for them and it is too expensive to follow. They demanded for any progress to be made regionally the RAA must transition to new authorities (Bajnath 2016a; Bajnath 2017a).

Struggling to stay afloat, another CEO is hired, this time from the United Kingdom (LIAT.com 2015). In April 2015 he announced his philosophical revelation for LIAT to take a detour in its strategic direction. This change is popularly welcomed by Barbados. The airline's new market plan is to increase its services in the Southern Caribbean to engage in rivalry with CAL and snatch market share (Khelawan 2015b). Once again, the Caricom 1996 group vision by States is unheeded. This new strategy is accepted by the shareholder governments by majority vote in a Barbados meeting. They also decided to relocate the airline's fleet base from the VC Bird International Airport in Antigua, where it has been for decades, to the Grantley Adams International in Barbados. The restructuring plan aimed at creating a viable airline also calls for staff reduction across the organization (Trinidad Express 2015). Meantime, it is saddled with the added cost of holding on to the "hard to dispose of" older Bombardier Dash-8 airplanes while the newer ATR are being delivered, the tenth to land in 2016. Conjointly with this dilemma, cash injection is badly needed and the airline approached the Barbados-based Caribbean Development Bank (CDB) for more financial assistance. The airline has already provided a (US) \$65 million to finance the new ATR aircraft (Khelawan 2015b).

Soon after in March 2015, the Prime Minister of Antigua and Barbuda as a shareholder representative in LIAT criticizes plans for an alternate airline to LIAT and relocation to Barbados. He believes this is a sinister plot and he needs more information as to the source of its conception. He vehemently said that his administration would resist efforts to shift the base of the financially-strapped regional airline, to Bridgetown. Adding, he would demand the resignation of the airline's CEO, if the plans about a new carrier prove to be true. The proposal was discussed at a recent meeting of the Board of Directors; however, the proposal was actually turned down because of the strong objection of the government of Antigua and Barbuda on the issue. Furthermore, the Prime Minister of Antigua and Barbuda is not in agreement of one prime minister being in control of the chairmanship of LIAT when it should be rotated to other members. He also believes because Barbados has the majority of shares that does not give them the right to move everything and the base to Barbados (Trinidad

Express 2015). Needless to say, after this episode the LIAT British CEO resigned (Daily Observer 2016).

Complaints continue to pour in on the management style and idealistic outcomes of LIAT. In September 2016 the St. Vincent Prime Minister threatened to withdraw funding to LIAT. Again, the Board and Management of LIAT have come under fire for failing to meet their strategic objectives as well as service targets. The St. Vincent and the Grenadines government says it will not inject any more funds into the cash-strapped regional carrier, until the airline improves its services to the island. The travelling public is faced with numerous challenges, including the lack of information on delays and cancellation of flights. The government reminded the leadership of LIAT that the central mandate of LIAT is to provide the best possible service with the equipment available (CMC 2016).

Fed up with the whole scenario, in April 2017 the LIAT Pilots Association (LIALPA) boldly declared they will not stand by and watch the airline's financial health continue to deteriorate at massive levels, to the point where LIAT can't even pay salaries on time. Furthermore, LIALPA said in a statement that it has no other choice but to call on the shareholder governments to remove the current LIAT management (Caribbeannewsnow.com 2017).

4. CONTRIBUTING FACTORS TO THE ANGUISHES

Taxes, fees and surcharges imposed by most Caribbean governments are seriously hurting the tourism industry in the region. The plethora of these taxes and fees tacked on to fares and charges for various airport facilities on both intra-island travellers as well as international visitors are taking a heavy toll on the already overburdened travel industry. Because of this, international airlines have become very selective of the destinations they choose to service in the Caribbean and are now more disposed to mounting services to destinations with lower taxes (Khelawan 2015a).

Caricom State Air Carriers have persistently reminded us of the strangling regulations that restrict their free movement to strategically plan their business models. Protectionist governments make the small Caribbean market difficult for any private carrier to operate into. REDjet, the first and only home-grown Caribbean Low Cost Carrier suffered this faith in 2012. The lengthy processes with obtaining permissions with route approvals became challenging, very time-consuming and expensive for this new and exciting start-up. The airline revised their planned launch dates multiple times and eventually the burdening circumstances led to its financial demise in 2012 (CAPA 2012).

4.1 Success Models

Major macro-external forces are constantly driving change. As such, senior management must be ready and capable to adapt and discharge their duties in a dynamic business environment. Business models change as external factors drive new globalization features, which require a new strategic thinking. Therefore, strategic decision making is vital to organizational success. That would mean employing experts with the requisite background who possess the philosophies of adding value towards the airline transformation (Ivancevich 2004). There are examples of airline companies who have made extraordinary reversals in their fortunes and who were at some time in similar dilemmas as our state regional carriers. Singapore Airlines, Cathay Pacific in Hong Kong, Emirates Airlines, Gulf Air and Qatar Airways in the Arabian Gulf, nationally owned or subsidized at some point, have all been the essential platforms on which their parent states have built their strategic and economic importance, even in unlikely destinations. The remarkable success story of Jet Airways of India stressed the strategic importance of selecting the right human resources by recruiting executives from international airlines with years of industry expertise to bring in different perspectives in management from day one of operations.

In the private commercial business sector we have exemplars on creativity and innovation. Their success stories flourished on the belief of cherishing their philosophies and proceed with

confidence on how to make the business an outstanding exploited venture. Modern successful leaders are Steve Jobs of Apple Corporation, Elon Musk of Pay Pal and SpaceX, and Sir Richard Branson of Virgin. These mentors were moulded by an entrepreneurial spirit during their early childhood into adolescence. Research show persons growing up engulfed with that entrepreneurial fire in the belly had a natural passion for success. They were positively influenced by their immediate family supporters although experiencing bouts of business failures. These are some subtle foundation factors we hunt for in the prospective leaders for the renewed Caricom vision.

5. CONCLUSION AND RECOMMENDATIONS

The vision and all good intentions from the Trinidad and Tobago Government were for CAL and LIAT to collaborate in an alliance network. CAL is to serve as the principal regional flag focusing on international routes while LIAT is supposed to be the intra-regional carrier. Such philosophical visions evolved from the Multi-Lateral Air Service Agreement amongst the 14 Caricom Heads signed in 1996. Their goals, “conscious of the need to improve the level, quality and efficiency of air services within and beyond the Caribbean Community; and cognizant of the strategic role that air transport services play in fostering the sustainable development of economies within the Caribbean Community.” However, post CAL implementation, the ideology did not go according to plan. Although the Agreement is filled with good objectives, the application of its idealistic contents seems to be ignored, consequently contributing to the existing regional dysfunctional circumstances.

CAL, similar to its predecessor BWIA, continues with a high turnover of Boards and Management teams. LIAT has a similar history; however, with the diverse shareholders the coordination becomes more complexed to find a philosophical direction. Adding to the regional aviation deterioration is the strong correlation of the high turnover of CEO’s and the change in the political directorate. Until very recent, foreign and regional appointees blamed political interference for their vexed departure. The history of the region is uppermost appointee’s lack the visionary capacity and competence to craft and execute proper strategic plans, and make

major risk evaluations. Without offering any grand conceptual framework, the approach is the regurgitating of failed policies and strategies resulting in the perpetual underperformance of the airline with huge financial losses.

The collaborative efforts in the emerging South East Asia ASEAN-10 States are good lessons for the region to emulate. The Leaders of those nations recognizing the need for growth engaged into collaboration and refrained from political banter. ASEAN-10 leaders found the will to get together or otherwise die as a nation and a community. ASEAN figures on Gross Domestic Product, Trade, Foreign Direct Investments and tourist arrivals began climbing during the easing stages and steepened just short of total air transport liberalization. Caricom has a lot in common with the ASEAN and can replicate their successes. It is essential for the Caricom region to recognize the relevance of the ASEAN struggle. Like the ASEAN, Caricom should continue to embark on a solid program of developing fruitful relations and economic cooperation for the common good. Maybe changing from too nationalistic to a more regional approach may be the answer (Bajnath 2016b, 153-192).

Airline managers must also share in the blame of the regional discontent as the trails of dissatisfaction continue within the Caribbean. We have seen where the wrong leaders can bring disastrous results. Alternatively, carefully picking and planning with the right leadership can contribute positively to the airline's outcomes and regional economic value. The world is driven on connectivity. Government is the central driver. Institutions such as Caricom, Airlines, Regulatory Aviation Authorities, and Airport Authorities etc. have vital deeper roles to play in implementing changes if the region is to align to the global stage. This requires policy makers and the leadership to re-visit the philosophical vision for Caricom. The Caricom Secretariat must be progressive and push for greater air transport co-operation as professed within the 1996 Multi-Lateral Air Transport Agreement (MASA).

Some suggestions reiterated from the author's earlier publications:

- Deeper philosophical background checks must accompany due diligence for top posts.
- Boards and Management must face routine performance evaluations. Failure warrants removal.
- Airline Boards comprise members of different Caribbean islands striving for common objectives.
- Caricom Heads must rekindle the MASA with collaboration from Airlines, Regulatory Agencies.
- Establish a Supervisory Aviation Body within Caricom to deal with the inter-connection of burning issues and drive collective decision making.

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