



Canadian Social Science
Vol. 14, No. 10, 2018, pp. 17-30
DOI:10.3968/10633

ISSN 1712-8056[Print]
ISSN 1923-6697[Online]
www.cscanada.net
www.cscanada.org

Perception of Travel Agents Towards Amadeus And Galileo Global Distribution System

Adeyefa Adedayo Emmanuel^{[a],*}; Olasoju Olajumoke Oluwafunmilayo^[a]; Omemu Adebukunola Mobolaji^[a]; Adedipe Abioye^[a]; Oladosu Olufunmilayo Adedoyin^[a]

^[a]Department of Hospitality and Tourism, Federal University of Agriculture, Abeokuta, Nigeria.

*Corresponding author.

Received 10 July 2018; accepted 21 September 2018

Published online 26 October 2018

Adeyefa, A. E., Olasoju, O. O., Omemu, A. M., Adedipe, A., & Oladosu, O. A. (2018). Perception of Travel Agents Towards Amadeus And Galileo Global Distribution System. *Canadian Social Science*, 14(10), 17-30. Available from: <http://www.cscanada.net/index.php/css/article/view/10633>
DOI: <http://dx.doi.org/10.3968/10633>

Abstract

This study was conducted to assess the perception of travel agents towards Amadeus and Galileo Global Distribution System in some selected travel agencies in Lagos Island, Lagos state. Two hundred and forty-three (243) questionnaires were administered while two hundred and seven (207) were retrieved. Hypothesis was tested using Pearson chi-square value which was less than 0.05 ($p=0.000$) thereby rejecting the null hypothesis which implies that there is a significant relationship between using Global Distribution System and Travel agencies. Result also reveals that the Pearson chi-square value of the second hypothesis is less than 0.05 ($p=0.000$) thereby rejecting the null hypothesis which implies that Global Distribution System contributes to the development of travel agencies. Therefore, Global Distribution System helps in the development of travel agencies. Other findings are; Amadeus Global Distribution System is used more than its counterpart Galileo Global Distribution System. Also, Global Distribution System has helped broaden staff knowledge towards reservation and hotel bookings. Based on these findings, it is hereby concluded that Global Distribution System Amadeus is quite popular and more used among the agents working with airlines; Global Distribution System Amadeus assumes the leading position in relation to Galileo Global Distribution Systems, primarily due to the development of software that is tailored specially to meet the needs of individual users, allowing the availability and exchange of quality information to a large number of users, thus linking tourism related companies in the global networks.

Key words: Perception; Travel Agent; Amadeus; Galileo Distribution System

1. INTRODUCTION

Travel has always been in place since the existence of the human race. Travel refers to the activity of travelers. A traveler is someone who moves between different geographic locations, for any purpose and any duration (IRTS 2008). It can be done via land, air and water. Traveling is an adventure, an education and an experience all rolled into one and it is a continuous learning process. It can be said to be related to both science and art. Art in the sense that the richness of cultures we enjoy is sold and Science in the aspect of managing the business part of it. Over the years, the movement of place to place has evolved, in light of this, travel agencies has come into being.

Travel business is an economic activity, which is related with continuous and regular buying and selling of travel related services for satisfying human wants. Travel industry has been agreed as a service industry. The primary job of a travel agency is to provide easy and trouble free travel to the traveler. (Jagmohan Negi, 2005).

A travel agency is a private retailer or public service that provides travel and tourism related services to the public on behalf of suppliers such as activities, airlines, car rentals, cruise-lines, hotels, railways, travel insurance, and package tours. (Anuchandran, 2012). In addition to dealing with ordinary tourists most travel agencies have a separate department devoted to making travel arrangements for business travelers and some travel

agencies specialize in commercial and business travel only. There are also travel agencies that serve as general sales agents for foreign travel companies, allowing them to have offices in countries other than where their headquarters are located. In present times, travel agents play an essential and continually expanding role in worldwide travel and tourism. Without travel agents, it would be practically impossible for travelers and tourists to shop for suitable flights at the best prices for tours, cruises, packages, hotels, resorts, and so on. Additionally, they provide a suitable one-stop access to virtually all segments of worldwide travel, transportation and tourism (McKercher, Packer, Yau, & Lam, 2003). Generally, travel agents play a vital role in the tourism distribution system, forming important link between providers and consumers. Their stock in trade is knowledge and it is this knowledge that they will sell to the consumers (McKercher & Du Cross, 2002). A Travel agent can also mean any person who for compensation or other consideration, acts or attempts to act as an intermediary between a person seeking to purchase travel services and any person seeking to sell travel services. A travel agency is a business that operates as the intermediary between the travel industry (supplier) and the traveler (purchaser). Part of the role of the travel agency is to market prepackaged travel tours and holidays to potential travelers. The agency can further function as a broker between the traveler and hotels, car rentals, and tour companies (Goeldner & Ritchie, 2010). Travel agencies can be small and privately owned or part of a larger entity. The airlines release seats to be sold to accredited travel agents who in turn sell to customers for a certain percentage.

Recently, the term ICT has been broadened to explicitly encompass the electronic communication field, and the abbreviation ICT (Information and Communication Technology) is now widely used (Buhalis, 2004; Gholami, Emrouznejad, & Schmidt, 2008). Information and Communication Technologies may be defined as “electronic means of capturing, processing, storing, and disseminating information and provide new mechanisms for handling existing resources and information” (Laudon & Laudon, 2007).

Information technology is heavily embedded in all levels of airline operations. Internet technology and web based commerce have dramatically transformed the airline industry in the last ten years (Werthner & Klein, 2005). Information and Communication Technologies (ICTs) have always played a predominant role in the airline sector (Werthner & Klein, 2005) but with the advent of the Internet and open source technology their impact is becoming increasingly more crucial and evident (Buhalis, 2004; Jacobsen, Batarow, & Bode, 2008). As travelers embraced the Internet, this enabled airlines to evade the traditional distribution pattern through travel agencies and sell direct to end consumers (European Commission, 2006; Sismanidou; Palacios; Tafur, 2008).

Airline distribution is synonymous to Central Reservation Systems (CRSs). Up to the 1970s, travel agencies had to locate the best routes and fares for their customers in airline manuals and then call the carrier for availability and reservation. The emergence of CRSs not only provided a reservation tool and real-time connectivity to travel agencies but, more importantly, CRSs were effectively transformed into marketing and distribution systems which contributed significantly to promoting competition between vendor/host airlines (Sismanidou et al., 2008).

Global Distribution System platforms evolved from the original airline central reservation systems (CRSs), which were first introduced decades ago. Global Distribution Systems have served as the nexus of electronic commerce in travel for decades, providing virtual real-time connectivity between thousands of suppliers of travel inventory (airlines, hotels, car rental, tour operators, cruise lines, etc.) and hundreds of thousands of retail sellers of travel products. Each Global Distribution System provided airlines with a network of more than fifty thousand selling points worldwide and the ability to customize their offers and prices to meet market conditions. Currently, the three major Global Distribution Systems combined, handle over 1.4 million travel transactions a year (Sismanidou et al., 2009).

Global Distribution System portals and gateways on the Web allow consumers to purchase tickets directly, select seats, and even book hotels and rental cars (Beatrice, Cezar, & Alexandra, 2013).

1.1 Problem Statement

Today, global travel is one of the world’s largest industry segments, with an estimated total contribution to the global Gross Domestic Product (GDP) of USD 7.2 trillion according to the World Travel and Tourism Council (WTTC). This is equivalent to 9.6% of the global GDP and includes induced, indirect and direct contribution generated by industry suppliers and intermediaries, comprising airlines, hotel chains, rail providers, travel agency locations, and numerous international car rental and insurance companies, and global and regional tour, cruise and ferry operators. Travel agents have been able to sell airlines through the help of Global Distribution Systems and basically, Nigeria uses 3 major Global Distribution System; Amadeus, Galileo and Sabre. It is therefore the desire to understand the perceptions and reason why travel agents prefer a particular Global Distribution System to another. A number of problems have been identified in this research. A careful examination of Lagos Island (isale eko), Lagos state gave rise to these following problems which the report seeks to investigate:

- Some Global Distribution Systems are more user friendly than the others.

- There is decrease in the use of some of the Global Distribution System.
- There is complexity in the usage of some of the Global Distribution System.

1.2 Research Questions

- What is a Global Distribution System?
- How versatile is the Global Distribution System to travel agencies?
- Does the Global Distribution System have any contributions to the travel agency?
- What are the perceptions of travel agents towards the use of Amadeus and Galileo Global Distribution System?

1.3 Aims

The aim of the study is to critically analyze the perception of Travel Agents towards the use of Amadeus and Galileo Global Distribution System.

1.4 Objectives

The research objectives are to:

- 1) Analyze the perception of travel agents towards the use of Amadeus and Galileo Global Distribution System.
- 2) Investigate the type of Global Distribution System mostly used in Travel agencies.
- 3) Evaluate the importance of Global Distribution System in Travel agencies.
- 4) Examine the contributions of Global Distribution System towards Travel agencies.

1.5 Research Hypotheses

H0: There is no significant relationship between using of Global Distribution System and Travel agencies.

H0: Global Distribution System does not contribute to the development of Travel agencies.

2. LITERATURE SEARCH

2.1 The Introduction of Computerized Reservation Systems (CRS)

An airline company had a problem of depositing and conducting a great amount of data. It had to keep track of data on flight schedules, the cost of tickets, seat availability and passengers' reservations. Reservation programs were developed as internal control systems for airlines – to be used by their reservation staff to monitor seat availability more efficiently (Sion, Mihalescu, & Mărginean, 2013).

When (s) he is confronted with a request from a travel agent, the reservation agent from the airline company can find information and make reservations easily and rapidly using a computer connected to the main airline company database.

Airline managers understood that it would be more effective to allow agents to access the main system

directly. That is why telecommunication costs have been decreasing since the 1970s; airlines were starting to place terminals in their agencies to allow agents to look for information and make reservations for them.

Clearly, this method has been more successful than the previous one. Being able to access the reservation database reduced the time agents needed to find information for clients and make reservations and communication costs associated with the old manual system were also eliminated. At the same time, it gave instantaneous access to availability and to price information in real time, which helped increase service quality.

This arrangement was beneficial from the point of view of the airlines as well, as it was far less costly to distribute the equipment by facilitating direct access to the system, than to hire additional staff members to handle the increasing business volume.

Moreover, the airline company managers discovered that travel agents preferred to make the reservations with a company that provided reservation terminals. This helped the market expand, airline companies drew great revenue from the passengers, and the economic entrepreneurial spirit changed from a simple reduction in price to one of far greater strategic importance. Replacing terminals in agencies in a way that connected agents to flights ensured a better future for flight reservations. (Sion et al 2013)

2.2 The Evolution of Computerized Reservation Systems (CRS)

They are essentially computerized systems that assist tourism firms in the profitable manipulation of inventory and in the smooth distribution of tourism products. CRS are normally operated by tourism service providers, such as airline companies, hotels, or tour operators and they are distributed nationally or internationally through computerized systems or videotext. Normally, they use the mainframe and the extended networks to support more terminals guided from a distance in the travel agencies or other tourism firms.

Ever since the 1980s, CRS have greatly expanded, affecting all tourism firms. The constant update of information and the ability to provide specific information as well as to support the reservation, confirmation and purchase of a large variety of tourism products are the great advantages of CRS. (Sion et al., 2013)

Initially, they appeared at the beginning of the 1960s, in view of supplying an effective tool to manage inventory. The rapid growth of demand and supply in tourism in the preceding decades had demonstrated that the industry could be kept under control by a single powerful computerized system.

Airline companies were the pioneers in the introduction of this technology because they replaced manual reservations with electronic databases. Soon, international hotel chains and tour operators realized its potential and followed the trend through the development

of information centralization and of the reservation system. CRS is often used as an umbrella term to include a whole range of systems. CRS can provide important strategic tools for firms and destinations while autonomous business strategies are being formed.

The airline reservation systems tended to become a global distribution system (GDS) comprising a wide array of services and products that offered an infrastructural global distribution for the entire industry. Computerized Reservation System and Global Distribution System facilitated changes in the tourism industry before the arrival of the Internet. They got established as a comprehensive tool in travel marketing, and were often called travel supermarket. The need for a Global Distribution System appeared both from the part of demand and that of supply, and often from the perspective of the expansion witnessed in the tourism industry in the past few decades.

Before 1993, the traditional tourism distribution system consisted of consumers (buyers of travel related services), traditional retail travel agents, traditional corporate travel agents, traditional tour operators, Global Distribution Systems, incoming travel agents (intermediaries between operators and suppliers), destination marketing organizations (DMO's), and suppliers (Kracht & Wang, 2010).

In this distribution channel, retail travel agencies served exclusively as intermediaries and advisors. Since travel and tourism is a fragmented, information-oriented industry, it is highly receptive to the benefits of the Internet (Luisam, Joaquín, Enrique, & Anna, 2010). Industry players realized that the Internet had the potential to serve as a new communication and distribution channel serving travelers and suppliers of travel services and products. Indeed, this channel enabled tourism businesses to improve their competitiveness and performance (Law, Leung, & Wong, 2004). As a result, the advent of the Internet required travel agencies to make considerable adaptations to remain solvent and relevant (Laverty, 2014)

The digital age offers various opportunities to travel agencies to harness the benefits of information communication technologies in an affordable and simple way (Collie, 2014; Abou-Shouk, Lim, & Megicks, 2013). As such, the Internet has become one of the most important platforms for travel-related service tourism professionals to provide services and communicate information to their target customers (Tsang, 2010). The development of information technology and evolution of airline reservation systems of individual airlines have led to the development of the Global Distribution Systems (GDS) recognized as a worldwide computerized reservation network that electronically connects the tourist offer with the tourist demand.

2.3 History of Global Distribution System

Today there are four major Global Distribution System companies. These are Amadeus, Galileo, Sabre, and Worldspan. Because of globalization and how it affects business, it is easier to travel now than it ever was before. It is easier to do business over a long distance than before. This requires that new ways for doing these types of business and of others, are needed. The Global Distribution System does this by being the “electronic supermarkets linking buyers to sellers and allowing reservations to be made quickly and easily” (Das 2009). Basically the Global Distribution System can be seen as the system that lets the internet work as the way to make transactions happen. The first Global Distribution System began to be created in the 1950s and was functional in the 1960s (ITSA 2009), and the reason was to have a way for keeping track of commercial airline flights and availability. Before the concept of the Global Distribution System was a possibility there was a lot of time that was wasted by those employees who had to keep these things organized without an easy way to contact other airline and travel agencies. Now, with Global Distribution System, it is possible to come to one place and to have so many of these agencies available to you so that everything can be so much quicker and efficient, and so that it is more organized too. Global Distribution System was some of the first of the electronic commerce businesses. These systems were owned and operated by other big companies, first ones being the airline companies. For example, SABRE and Apollo were owned by American Airline and United. In addition to the four which have been shown above, there are other smaller Global Distribution System but they are local to specific regions.

The Global Distribution System is operational 99.9% of the time, and access is available when it is up and running. It is capable of handling as many as 17,000 messages every second during the highest traffic times (ITSA 2009). These systems usually use the most advanced enterprise systems architecture, which allow the system to be extremely fast in responding to the user commands. Systems are built in a way that the user is able to make very large numbers of reservations in short time, because some agencies must book for parties or for businesses, and so on. The Global Distribution System is an incredibly fast machine and is able to use greater than 1 billion combinations of fare. The systems have more than 95% of available seats in the world, and represent more than 750 airlines, 50,000 hotels, 400 tours, and 30,000 car rental sites (ITSA 2009).

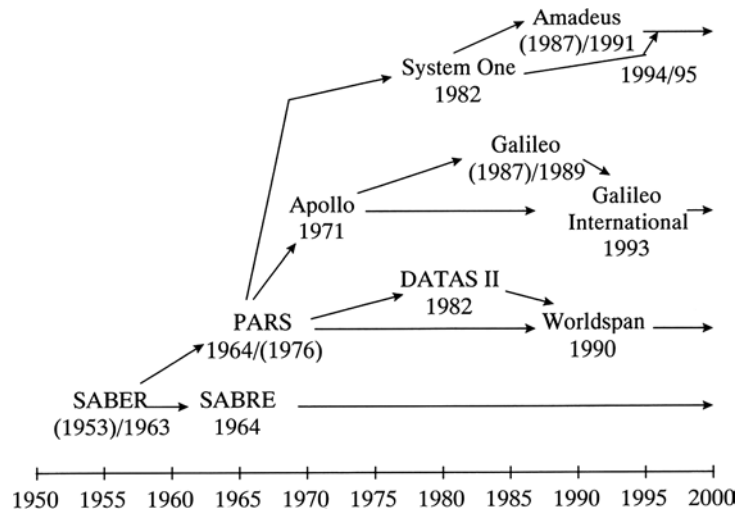


Figure 1
Evolutionary Development of Global Distribution System Technology
 Source: Karcher, 1997.

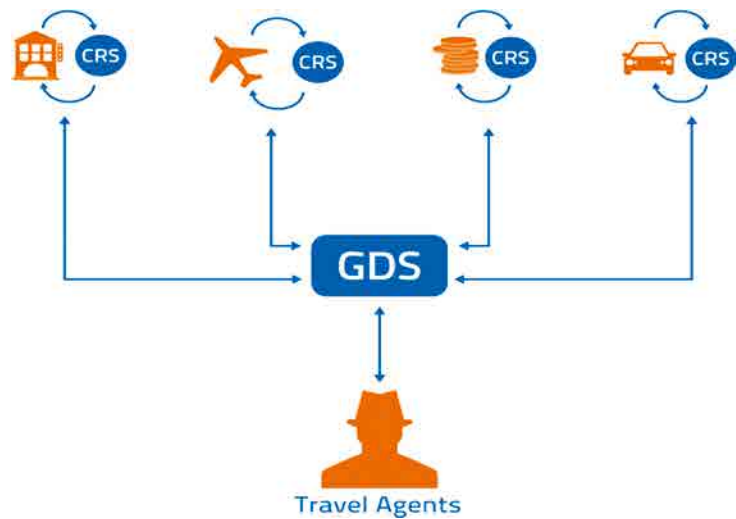


Figure 2
Theoretical Framework
 Source: Hotel Reservation System, 2015.

2.4 Travel Agency

In present times, travel agents play an essential and continually expanding role in worldwide travel and tourism. A travel industry without travel agents would be an industry in disorder (Rezky, Huam, Amran, Thoo & Sukati, 2012). Without travel agents, it would be practically impossible for travelers and tourists to shop for suitable flights at the best prices for tours, cruises, packages, hotels, resorts, and so on. Additionally, they provide a suitable one-stop access to virtually all segments of worldwide travel, transportation and tourism (McKercher, Packer, Yau & Lam, 2003). Generally, travel agents play a vital role in the tourism distribution system, forming important link between providers and consumers. Their stock in trade is knowledge and it is this knowledge that they will sell to the consumers (McKercher, & Du Cross, 2002). In fact, they have been described as information gatekeepers in the travel purchase decision-

making process (Resky et al., 2012). Travel agency is one of the most important organizations in the tourism private sector that plays a significant and crucial role in the entire process of developing and promoting tourism in the country or at the destination. It is a travel agency which packages and processes all the attractions, accesses, amenities and ancillary services of a country and presents them to the tourists. That's why travel agencies are known as image builder of a country. A prospective travel agency is one that makes arrangement of travel tickets (air, rail, road and sea); travel documents (passport, visa and other documents for travel), accommodation, entertainment and other travel related services from the principal suppliers. It may also secure travel insurance, foreign currency for the traveling people (Goeldner & Ritchie, 2010).

A travel agency may either be one of a chain of retail outlets or a single operation. The work of the larger agencies is often divided between different divisions, e.g.

counter service, business travel and foreign exchange. In smaller concerns each member of the staff will have to handle many aspects of the agency's business. Some agencies limit their activities to arranging travel and/or holidays to a specific area, but most cater for a very much wider demand and fulfill all the functions associated with acting as intermediary between the providers of holidays, transport, accommodation etc., and the client. Companies that deal only with business travel are called Business Travel Houses. They may also be responsible for dealing with the planning, publicity and bookings for trade fairs and conferences.

Travel agency sales clerks take bookings on behalf of tour operators, sell tickets for travel, make hotel bookings, take payments from the public and give advice, on types of holidays, methods of travel, passports, visas, travelers cheques, foreign currency etc., They need to have a good knowledge of the products and destinations offered by the tour operating and travel companies. Managers and assistant managers are responsible for the day-to-day operation of branch offices. This includes staffing, marketing, accountancy, complaints etc. Travel managers should have professional qualifications and experience. In a small agency training will probably be on-the-job. Large companies may offer a training programme. (Roday, Biwal, & Joshi, 2009).

The main features of travel agency business are:

- An important link between the clients and principal suppliers.
- Image builder.
- Ensures rapid travel service.
- Provider of authentic and reliable travel information.
- A social and continuous process.
- Establishes good relationship with clients and vendors.

Mostly, they are specialized in a particular product component, such as air tickets, accommodation, conferences and conventions etc. (Roday et al., 2009).

2.5 Galileo Global Distribution System

The Galileo Travel Reservation System is a value-added aggregator of travel inventory, dedicated to supporting its customers and through them, expanding choices for travelers worldwide. Galileo Travel Reservation System is one of the world's leading online reservation system used by the travel industry (Galileo, 2008). It enables agents to book flights, sell seats, issue tickets, book car hire and hotel accommodation. The online reservation system that book and sell tickets for multiple airlines are known as Global Distribution Systems. Originally designed and operated by airlines, guides were adapted for by travel agents (Galileo, 2008).

Features:

- (1) Flight scheduling, fares, and reservation policies for all participating flight distributors
- (2) Hotel property indicators, descriptions, availability, and reservation guidelines.

- (3) Car hires company indicators, descriptions, availability, and booking guidelines.

- (4) Customer travel bookings are made through Galileo.

- (5) Links to other Galileo systems, providing direct access to air, car, and hotel vendor inventories. (Galileo, 2008)

The Galileo Travel Reservation System is a leading Global Distribution System (GDS). Galileo Web Services enable travel agencies, technology development partners and suppliers of air, hotel, car, rail and cruise services to seamlessly integrate Galileo data and functions into their applications via the Internet, thereby reducing development time, effort, maintenance and operating costs.

Fights by the airline owning the online reservation system had a preferential display on the computer screen. Due to the high market penetration of the Sabre and Apollo systems, owned by American Airlines and United Airlines, respectively, Worldspan and Galileo were created in an attempt to gain market share in the computer reservation system market and, by inference, the commercial airline market. In response and to prevent possible government intervention, United Airlines started online reservation system and sought minority partners. The advantage of this kind of online reservation system lies in the availability of 24/7. The airline reservation system can be accessed by anyone at any point of time to book the tickets. With Galileo Global Distribution System, efficient of the travel enterprises will certainly improve. Web based airline reservation system will be connected to the Galileo Global Distribution System through Galileo API / Galileo XML to fetch the online inventory on Air Tickets (Galileo, 2008). Real time access to inventories can mark your success story for the long term by reducing the operation cost and increase in revenues will undoubtedly help you to expand your reach with solutions for your channels of choice. Increase in efficiency and maximum point of sales will exceptionally boost the visibility of reaching a global community and travel buyers.

2.6 Amadeus Global Distribution System

The Amadeus system is the youngest Global Distribution System operational, created in 1987 with four Airline companies (Das, 2009). Air France, Iberia, Lufthansa, and SAS worked together to make Amadeus the first Global Distribution System to be operational and all had equal shares in the company. Now, however the SAS has sold its shares to the Amadeus Data Processing firm. Current shareholder amounts for the founding airlines are total 59.92%, with Air France (23.36%) having the most amount (Das, 2009). The Amadeus group has three primary corporate headquarters. Their data processing division is located in Erding, Germany, a city near Munich. This is their entire platform's technology nexus,

and manages more than 500 million transactions daily, as well as more than 500,000 physical disc accesses per second during peak usage hours; response time is, on average, quicker than 0.3 seconds, and the firm claims to maintain 99.98% uptime of their system (Amadeus, 2010). The firm's product research and development division is based out of Sophia Antipolis, an area near Nice, France. Lastly, their official corporate headquarters is situated in Madrid, Spain (Amadeus, 2010). Amadeus is offering to marketing, sales, and the distribution services of the travel and tourism sectors. The database of this system is one of the largest in the world, as it operates in over 15,000 markets (Amadeus, 2010) and contains more than 57,000 travel agencies sites, and also 10,500 airline sales office spread in 200 markets across the world (Das, 2009). Also the firm has developed a new system; made operational in 2007, their new system features a "next generation distribution technology platform" which operates based on open systems technology; the upgraded technology can now access 78,000 hotels (Amadeus, 2010), up from 58,000 hotels and 50 car rental firms, among other services (Das, 2009). In addition, through Amadeus' "Traveltainment" initiative, rolled out and operated by

the Amadeus Leisure Group, the firm is able to offer its clients an array of pre-coordinated or custom-ordered vacation packages (Amadeus, 2010).

Amadeus has an advantage over the other systems because of having access to the most travel agency sites. Also the Amadeus system has the most productive system platform in the world. In July 2001 Amadeus has purchased e-Travel, Inc. At the same time the company has made the business unit and this unit is working through e-Travel to give more business to corporate clients.

The data from 2009, presented in Figure 3, highlight the leading position that Global Distribution System Amadeus assumes in almost all regions of the world, with the exception of North America (8.20%). Asia and the Pacific region recorded prevalence with 71.30%, followed by Western Europe with 67.50%, Africa with 61.30% and Latin America with 42.50%. We can conclude that the implementation of the Global Distribution System Amadeus leading information technology and creation of modern products are greatly responsible for the existence of extensive networks of its users, as well as for developing a competitive advantage over other systems.

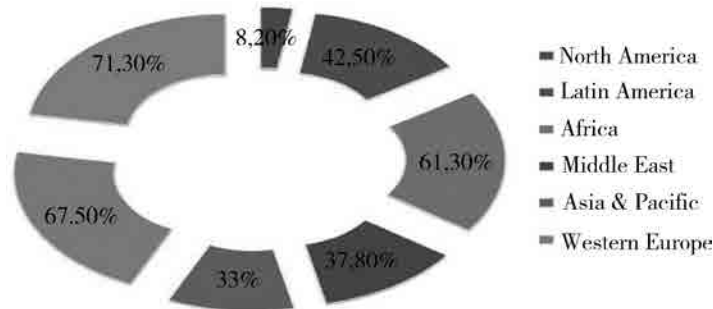


Figure 3
Global Distribution System Amadeus - Global Market Share Leader (Amadeus 2009)

Main activities and Global Distribution System Amadeus products

The main tasks of Global Distribution System Amadeus present it as the leading information technology service provider for all industries that are directly or indirectly associated with tourism and travel. The principal tasks of Global Distribution System Amadeus are as follows:

- Liaising with the travel agency through which they allow a quick and efficient reservation and services sales;
- Liaising with the airlines with the aim of effective occupancy of its capacity;
- Including Hotel Amadeus system to facilitate increased sales of hotels;
- The inclusion of Rent-a-car Company with the aim of expanding the network services;
- Providing information center related to innovation and training;
- Providing commercial and technical support to all customers. (Radulovic, 2013)

Global Distribution System Amadeus products have multiple significance since they enable travel agencies to improve the range of services to their passengers, increase productivity through the use of fully automated processes, improve business efficiency and become more flexible in order to adapt to the specifics of the tourism market. Global Distribution System Amadeus products, such as Pro Web, Vista, Check my trip, Central Ticketing Solution or Automatic MCO have been widely applied by Amadeus system users. Moreover, the choice of the particular product depends on the commitment and users' needs for everyday work with passengers. The latest in a series of Global Distribution System products that encountered a wide acceptance by the users of the system is E-ticketing. It represents a new way of publishing documents, where the passenger does not receive a paper document, but is electronically registered as a buyer. Provision and payment take place as usual at the travel agency or on the Amadeus Website. The passenger is obliged to report his identification number, which will be used during the check-up (Amadeus customer IT solution, 2011).

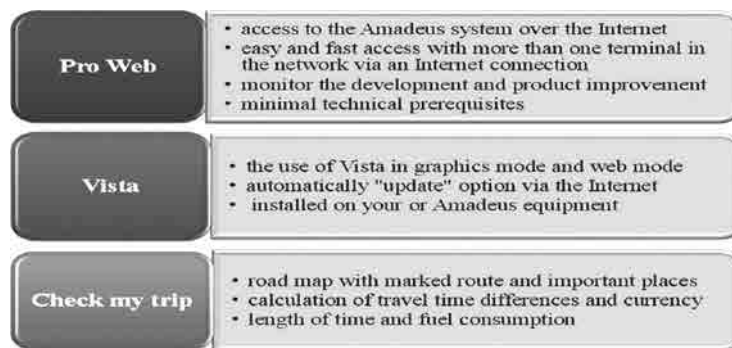


Figure 4
Global Distribution System Amadeus - Global Market Share Leader
Source: Amadeus, 2010.

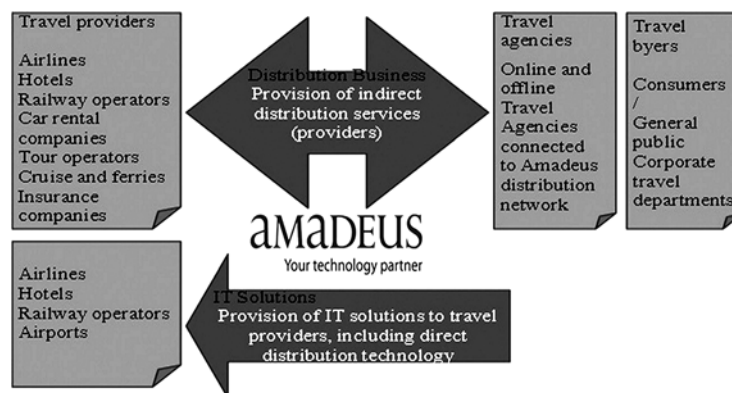


Figure 5
Global Distribution System Amadeus Business Structure
Source: Amadeus, 2010.

2.7 Sabre Global Distribution System

Sabre is one of the oldest of the Global Distribution Systems. It has been operation from 1960, when it had only very limited reservation capability, to the 1980s when it has added the “advanced airline yield management systems” (Das, 2009). Today it is still one of the top competitors. It has been acquired in 1996 by the company AMR (also owns American Airlines). Sabre has access to businesses in 45 countries and is special from other Global Distribution System groups because of acting as provider for technologies and innovative research for the other travel sector. It has products also for travel commerce and to improve the airline/supplier operation capabilities. This way it is almost more for the logistical efficiency than for the booking and customer satisfaction. Sabre has been founded in Texas, and has access to 60,000 travel agencies, 400 airlines, 55000 hotels, 52 car Rental Company, 9 cruise line, 33 railroad and 229 tour operators (Das, 2009). Again the company also has a very strong focus for optimizing the value chain for the travel industry by providing products and services for improving their business side efficiency (Das, 2009). Sabre owns the company Travelocity.com, and Get There, “provider of web-based corporate travel procurement”, and this include the reservation for air, hotel car and also for the meeting services. It has for clients “more than 800

leading corporations (Das, 2009). The main strength for Sabre is because of the good market position, presence in many areas of the world, a strong group of products, and having revenue from many different types of business. Also very important here is the “intellectual capital”, this comes from the information technology business services it has to offer. It has been growing in revenue, and is a very dangerous competitor because it has such a very strong competitive advantage in its services offered to businesses for businesses (Das, 2009).

2.8 Global Distribution System

The Worldspan Company has been founded in 1990 by the group of Delta Air Lines, Inc., Northwest Airlines, and also the Trans World Airlines. Currently ownership of the company is Delta Air Lines, Inc. (40%) with majority (Das, 2009). Worldspan has only entered the internet technology arena in 1995. It has grown a lot in the web-based travel distribution to 90 countries and territories; there are 20,021 travel agencies, 421 airlines, 210 hotel companies, 40 car Rental Company, 39 tour and vacation companies, and also 44 special travel service supplier (Das, 2009). Recently Worldspan has been making big movements to increase the size and breadth for its network. These partnerships have provided it with the technology, joint venture, and access to the useful products and services

which have let it to be a strong competitor for the other big three names in the e-commerce area. The companies the group has been with recently include Data Lex, which provide the e-business framework and services for global travel companies; Digital Travel for global online tours; Kinetics Inc. which creates many products and technologies for the airline companies; OpenTable.com for restaurant search and reservation type tools for web-based service such as the data management, web-hosting, and general e-commerce (Das, 2009). On top of this is the company Orbitz LLC in 2001 which uses Worldspan for booking engine, and 2002 was when the company has launched the Worlds pane PricingSM. This technology has given the very innovative technology that has made searching for the best price to be even more efficient than for other companies.

3. RESEARCH METHODOLOGY

3.1 Study Area

The case study used to provide an insight into the tourism industry in Lagos Island, Lagos state. Lagos Island (Isale-Eko) is the principal and central local government area in Lagos, Lagos State. It is part of the Lagos Division. As of the preliminary 2006 Nigerian census, the LGA had a population of 209,437 in an area of 8.7 km². The LGA only covers the western half of Lagos Island; the eastern half is under the jurisdiction of the LGA of Eti-Osa.

3.2 Design of the Study

In this research study, data were collected from existing journals and textbooks. The questionnaire focused majorly on staff of travel agencies. The used data has been collected with the qualitative approach and also adopted the descriptive study design which primary focus is to assess the perception of travel agents towards Amadeus and Galileo global distribution system.

The questionnaire comprises of respondent bio-data, personal information and responses to situations relating to the research.

3.3 Population of Study

The study comprised of some members of staff in twelve (12) selected travel agencies in Lagos Island, Lagos state

3.4 Sampling Method

Simple random sampling was implemented for travel agency selection and for the respondents (staff only) in the selected travel agencies.

3.5 Sample Size

For populations that are large, particularly for population where the total population is unknown, Cochran formula (1963) was used to generate the sample size required of the study;

$$n = \frac{z^2 p (1-p)}{e^2}$$

$$e^2$$

Where;

n= sample size

P= Population Proportion

e= sampling error

Z= confidence level value

Using 88% confidence level, Z=1.56;

P is the degree of variability expressed as decimal, since it is not known, I will use 50%=0.5.

e is the level of precision, expressed as a decimal. A precision rate of ±5%=0.

4. RESULTS AND DISUSSION

Table 1
Distribution of Socio Demographic Data of Respondents (Staff)

S/N	Variables	Frequency	Percentage
	Gender		
1	Male	122	58.9
	Female	85	41.1
	Age		
	18-24years	18	8.7
2	25-30years	38	18.4
	31-35years	73	35.3
	35-40years	45	21.7
	Above 40years	33	15.9
	Marital Status		
3	Single	82	39.6
	Married	117	56.5
	Divorced	8	3.9
	Ethnicity		
	Igbo	60	29.0
4	Yoruba	125	60.4
	Hausa	11	5.3
	Others	11	5.3
	Position		
5	Manager	66	31.9
	Booking / ticketing officer	141	68.1
	Work experience		
	Below 4 years	26	12.6
6	4-6years	68	32.9
	7-9years	28	13.3
	10years and above	85	41.1

From the table above, out of Two hundred (207) respondents that participated in the study, 122(58.9%) of the respondents were male while 85(41.1%) of the respondents were female. Within the age groups, majority of the respondents were 68(35.3%) fall between the age bracket of 31-35 years while 45(21.7%) fall between the age bracket of 25-30 years. More so, 110 (56.5%) of the respondents were married, while 82(39.6%) were still single. The ethnicity indicated that majority 125(60.4%) of the respondents were Yoruba's, this can be due to the fact that the project work was carried out in Lagos, Southwest Nigeria. 141(68.1%) of the respondents were booking/

ticketing officers which represents the larger percentage of the respondents. 85(41.1%) have working experience of

over 10 years while 68(32.9%) have working experience of 4-6 years in the travel industry.

Table 2
Perception of Travel Agents Towards Amadeus and Galileo Global Distribution System.

S/N	Variables	SA	A	D	SD
1	The introduction of Amadeus and Galileo Global Distribution System has not encouraged and increased the number of travel agencies	19 (9.2)	31 (15.0)	74 (35.7)	83 (40.1)
2	Both Galileo and Amadeus Global Distribution System makes running travel agencies easier compared to other Global Distribution System	77 (37.2)	107 (51.7)	19 (9.2)	4 (1.9)
3	Galileo Global Distribution System is easier to use In making flight reservations compared to Amadeus Global Distribution System	22 (10.6)	46 (22.2)	96 (46.4)	43 (20.8)
4	Galileo sells cheaper airline tickets compared to Amadeus	4 (1.9)	45 (21.7)	115 (55.6)	43 (20.8)
5	Most airlines patronizes Amadeus Global Distribution System than Galileo Global Distribution System	75 (36.2)	101 (48.8)	31 (15.0)	0 (0.0)

From the Table above, 19(9.2%) of the staff strongly agree that Amadeus and Galileo global distribution system has not encouraged the number of travel agencies. 31(15.0%) agree while 74(34.7%) disagree and 83(40.1%) strongly disagrees that the distribution of Amadeus and Galileo Distribution system has not encouraged travel agencies. Also, 77(37.2%) and 107 (51.7%) strongly agree and agree respectively that both Galileo and Amadeus Global Distribution System makes running travel agencies easier compared to other global distribution system while 19(9.2%) and 4(1.9%) disagree and strongly disagrees respectively. 96(46.4%) and 43(20.8%) strongly

disagree and disagree respectively that Galileo Global Distribution System is easier to use in making flight reservation compared to Amadeus GDS while 22(10.6%) and 46(22.2%) strongly agree and agrees respectively. 115(55.6%) disagree that Galileo sells cheaper airline ticket compared to Amadeus while 43(20.8%) strongly disagree, on the same note, 4(1.9%) and 45(21.7%) strongly agree and agree respectively. 75(36.2%) and 101(48.8%), strongly agree and agree that most airline patronize Amadeus Global Distribution System than Galileo Global Distribution System while 31(15.0%) disagrees.

Table 3
Types of Global Distribution System Mostly Used in Travel Agencies

S/N	Variables	SA	A	D	SD
1	Galileo Distribution System is the most used global distribution.	8 (3.9)	46 (22.2)	130 (62.8)	23 (11.1)
2	Amadeus is often used in travel agencies as a distribution system	77 (37.2)	98 (47.3)	28 (13.5)	4 (1.9)
3	Sabre is the most employed global distribution system in travel agencies.	16 (7.7)	38 (18.4)	110 (53.1)	43 (20.8)
4	Worldspan is used often by travel agents in travel agencies.	24 (11.6)	31 (15.0)	76 (36.7)	76 (36.7)
5	Global Distribution System is no longer relevant in travel agencies	15 (7.2)	39 (18.8)	47 (22.7)	106 (51.2)

From the Table above, 8(3.9%) strongly agree that Galileo is the most used Global Distribution System. 46 (22.2%) respondents agrees, majority of the respondents i.e. 130(62.8%) disagrees that Galileo is the most used global distribution system while 23(11.1%) strongly disagrees to this statement. 77(37.2%) strongly agree that Amadeus is often used in travel agencies, 98(47.3%) agree that Amadeus is often used, 28(13.5%) disagree that Amadeus is used often and 4(1.9%) strongly disagree that Amadeus is often used in travel agencies. Majority of the respondents 110(53.1%) disagree with SABRE being the most employed global distribution system, 43(20.8%) strongly disagree while 16(7.7%) and 38(18.4%) strongly

agree and agree respectively that Sabre is the most employed Global Distribution System in travel agencies. In a similar response by respondents 76(36.7%) and 76(36.7%) disagree and strongly disagree that world span is used often by travel agent in travel agencies while 24(11.6%) and 31(15.0%) strongly agree and agree respectively. The table above shows that majority of the respondent i.e. 106(51.2%) strongly disagree that Global Distribution System is no longer relevant in travel agencies. On the same note, 47(22.7%) respondent disagree to the irrelevance of global distribution system while 39(18.8%) and 15(7.2%) agree and strongly agree respectively to this statement.

Table 4
Importance of Global Distribution System in Travel Agencies.

S/N	Variables	SA	A	D	SD
1	Galileo Global Distribution System is an essential prerequisite in the travel	105 (50.7)	74 (35.7)	20 (9.7)	8 (3.9)
2	Travel agencies can operate without a global distribution system	16 (7.7)	32 (15.5)	112 (54.1)	47 (22.7)
3	Global Distribution System has no relation with travel	8 (3.9)	20 (9.7)	68 (32.9)	111 (53.6)
4	Travel agencies makes profit from the use of global distribution system	74 (35.7)	105 (50.7)	28 (13.5)	0 (0.0)
5	Global Distribution System application does not encourage customers patronage in travel agencies	15 (7.2)	39 (18.8)	47 (22.7)	106 (51.2)

The table above shows that out of 207 respondents, 105(50.7%) strongly agree that global distribution system is essential in travel agencies, 74(35.7%) agreed, 20(9.7%) disagreed and only 8(3.9%) of the respondents strongly disagreed. The respondents who disagreed that travel agencies that operate without a Global Distribution System are 112(54.1%) while 47(22.7%) strongly disagree, 16(7.7%) and 32(15.5%) strongly agree and agree respectively. The table shows that majority; 111(53.6%) strongly disagree that Global Distribution System has no

relation with travel as 68(32.9%) disagree but at the same time, 8(3.9%) and 20(9.7%) strongly agree and agree to this statement. 74(35.7%) and 105(50.7%) agree and strongly agree correspondingly that travel agencies makes profit from the use of Global Distribution System even as 28(13.5%). 106(51.2%) and 47(22.8%) strongly disagree and disagree that Global Distribution System application does not encourage customers patronage in travel agencies whereas 15(7.2%) and 39(18.8%) strongly agree and agree.

Table 5
Contributions of Global Distribution System Towards Travel Agencies

S/N	Variables	SA	A	D	SD
1	Global Distribution System has contributed immensely to travel agencies	120 (58.0)	79 (38.2)	8 (3.9)	0 (0.0)
2	Global Distribution System has no effect in the travel industry	20 (9.7)	19 (9.2)	96 (46.4)	72 (34.8)
3	Global Distribution System does not contribute to the growth of travel agencies	8 (3.9)	32 (15.5)	74 (35.7)	93 (44.9)
4	The economy of the country has greatly improved through the use of Global Distribution System in travel agencies	40 (19.3)	131 (63.3)	36 (17.4)	0 (0.0)
5	Global Distribution System broadens staff knowledge towards reservation and hotel bookings	115 (55.6)	80 (38.6)	4 (1.9)	8 (3.9)

From the table above, 120(58.0%) strongly agree and 79(38.2%) agree that Global Distribution System has contributed immensely to travel agencies even as 8(3.9%) disagree. Majority of the respondents; 96(46.4%) disagree and 72(34.8%) strongly disagree that Global Distribution System has no effect in the travel industry whilst 19(9.2%) and 20(9.7%) of the respondent agree and strongly agree to this statement. Also, 74(35.7%) disagree and 93(44.9%) strongly disagree that Global Distribution System does not contribute to the growth of travel agencies while 32(15.5%) and 8(3.9%) agree and strongly agreed. From the 207 respondents, 40(19.3%) strongly agree and 131(63.3%) that the economy of the country has improved through the use of the Global Distribution System in travel agencies whereas 36(17.4%) disagree. Also, the table shows that out of 207 respondents 115(55.6%) strongly agree and 80(38.6%) agree that Global Distribution System broadens staff knowledge towards reservation and hotel booking even as 4(1.9%) and 8(3.9%) disagree and strongly disagree respectively.

4.1 Test For Hypotheses

H01: There is no significant relationship between using of Global Distribution System and Travel agencies.

The table below shows the chi-square test which rejects that there is no significant relationship between Global Distribution System and travel agencies. It reveals that global distribution is an essential prerequisite in the travel agency.

Table 6
Contribution of Global Distribution System Reveled by the Chi-square Test

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	20.952 ^a	3	.000
Likelihood Ratio	23.872	3	.000
Linear-by-Linear Association	19.694	1	.000
N of Valid Cases	207		

H02: Global Distribution System does not contribute to the development of Travel agencies.

The table below shows the chi-square test which discards that Global Distribution System does not contribute to the development of travel agencies. It shows that global distribution system has contributed immensely to the development of travel agencies.

Table 7
Global Distribution System as an Essential Prerequisite in the Travel Agency

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	16.735 ^a	2	.000
Likelihood Ratio	19.571	2	.000
Linear-by-Linear Association	13.709	1	.000
N of Valid Cases	207		

4.2 Discussions

The study assessed the perception of travel agents towards Amadeus and Galileo global distribution system in selected travel agencies in Lagos Island, Lagos state. The demographic data obtained shows that majority of the travel agents in the selected travel agencies was mostly males of vibrant ages between 31-35 years and were married which means respondents are matured enough and the information given can be relied on. This collaborates with Coleman (2007) that gender inequality favors the male during demographic research. Respondents were majorly of Yoruba ethnic group, this can be due to the fact that the project work was carried out in Lagos, Southwest Nigeria. Most of the respondents have over 10 years working experience, this is due to the fact that the questionnaires were administered to the managers and top ranked officers i.e. booking/ticketing officers in the travel agency, which also implies that the employees are old staff of the travel industry because experience count when delegating a vital position/post to an employee like the post of manager which must be somebody that is not new in the travel industry. Respondents agreed that the introduction of Amadeus and Galileo global distribution system has helped and increased the number of travel agencies and made running of the agencies easier which corroborated with Werthner and Klein, (2005) who noted that Internet technology and web based commerce have dramatically transformed the airline industry in the last ten years.

Respondents strongly agreed that Amadeus Global Distribution System makes running travel agencies easier compared to its counterpart- Galileo Global Distribution System which supports Sismanidou et al, (2009) that currently there are 3 major Global Distribution Systems which handles over 1.4 million travel transactions a year but the number handled by each Global Distribution System varies. This shows that travel agents have a positive perception towards the use of Amadeus global distribution system.

The respondents also agreed that Travel agencies have been greatly impacted to through the use of Global

Distribution System which supports Fuentes, (2011) who said Travel agencies delivered value by means of their ability to connect supply and demand in the tourism industry. Also Buhalis & Laws, (2001) confirms that Value was created by the ability of a travel agency to facilitate the sale and delivery of tourism services from suppliers to consumers through Global Distribution System.

It has been strongly agreed by the respondents that Global Distribution System is an essential prerequisite for a travel agency which ascertains the findings of Raymond & Bergeron (1997) who said that Global Distribution System is an information system composed of data bases, a data management and processing system, and an access to a global telecommunications network which is indispensable to travel agencies. The services provided by travel agents are still relevant and valuable especially with the help of Global Distribution System. Additionally, Global Distribution System has help agencies to provide a safety net during trips which is not available should travelers do their own bookings (Bruce, 2002).

From the perspective of majority of the respondent, it is said that global distribution system has contributed to the effective running of travel agencies. Most importantly, it has contributed in broadening the staff knowledge on seat reservation and hotel booking.

SUMMARY

This study was carried out to assess the perception of travel agents towards Amadeus and Galileo Global Distribution System. Data were gathered purposively using structured questionnaire and administered in selected travel agencies, staff of the selected travel agencies in Lagos Island were the respondents. Descriptive statistics were used in the analysis. It was revealed that the staff of the selected travel agencies agreed that Amadeus is mostly used in agencies than its counterpart Galileo. The staff of the agencies also agreed on the relevance or importance of Global Distribution System to their various organizations. They also agreed that the use of Global Distribution System has helped broaden knowledge towards reservations and hotel bookings.

CONCLUSION

From this research work, agents selected in Lagos travel agencies were interviewed through the means of questionnaires focusing on Global Distribution Systems. The purpose was to gain understanding based on real experience, opinions used to evaluate the perception of travel agents towards the use of Amadeus and Galileo Global Distribution System in travel agencies. The following conclusions were drawn: Global Distribution System Amadeus is quite popular among the colleagues working with airlines. Global Distribution System

Amadeus assumes the leading position in relation to other distribution systems, primarily due to the development of software that is tailored specially to meet the needs of individual users, allowing the availability and exchange of quality information to a large number of users, thus linking tourism related companies in the global networks.

Finally, we would like to emphasize that the development and implementation of modern Information Technology products, in our opinion, represent a response to constant and rapid changes that characterize the Aviation market and the chance to gain competitiveness and foster further development of travel agencies at the global level.

RECOMMENDATIONS

The management of Galileo Global Distribution System should simplify their system for easier usage by staff of travel agencies.

More training should be done on the other global distribution system so there would be balance in the usage of other Global Distribution System.

Global Distribution System should be worked upon so as to be usable for the travel agencies more.

Other Global Distribution System should simplify their software so as the increase patronage from travel agents.

REFERENCES

- Abou-Shouk, M., Lim, W. M., & Megicks, P. (2013). Internet adoption by travel agents: A case of Egypt. *International Journal of Tourism Research*, 15(3), 298–312. Retrieved from <http://www.cinven.com/lib/docs/092640-amadeusanualreport2010.pdf> [accessed 22 May 2011]
- Anuchandran. (2012). Operation of travel agent. *Travel Agency and Tour Operations Business*. Retrieved from <http://www.amadeus.com/amadeus/x5140.html> [accessed 22 May 2011].
- Beatrice, S., Cezar, M., & Alexandra, M. (2013). *The passage from airline reservation systems to global distribution system*.
- Bergeron, F., & Raymond, L. (1997). *The Contribution of IT to the bottom line: A contingency perspective of strategic dimensions*. Proceedings of the 16th International Conference on Information Systems, Amsterdam, 167-181.
- Bruce. (2002). *A research report prepared for the national commission to ensure consumer information and choice in the airline industry prepared by transportation group international*.
- Buhalis D. (2004). eAirlines: strategic and tactical use of ICTs in the airline industry. *Information & Management*, 41(7), 805-825.
- Buhalis, D. (2003). *E-tourism information technology for strategic tourism management*. Gosport, UK: Prentice Hall.
- Buhalis, D., & Licata, M. C. (2002). The future e-Tourism intermediaries. *Tourism Management*, 23(3), 207-220.
- Carmen, P., Andreea, M., Claudia, M., & Silvia, M. (2014). *Trends in tourism and hospitality industry*.
- Cochran, W. G. (1963). *Sampling Techniques* (2nd ed.). New York: John Wiley and Sons, Inc.
- Coleman, S. (2007). The role of human and financial capital in the profitability and growth of women-owned small firms. *Journal of Small Business Management*, 45(3), 303-319.
- Collie, M. (2014). Internet Leads Travel. <http://www.geton.com/blog/geton/internet-leads-travel>.
- Das, S. (2009). *Global distribution systems in present times - Four major GDS systems; Amadeus, Galileo, Sabre, Worldspan*. Hotel Online Where the Hospitality Industry Meets. <<http://www.hotel-online.com>.
- Descombe, A. (2003). *The Good Research Guide for Small research Project* (2nd ed.). Buckingham: Open University Press.
- European Commission. (2006). *ICT and e-Business in the tourism industry*. ICT adoption and e-Business activity in 2006. Retrieved on April 20th, 2009 from <http://www.ebusiness-watch.org/studies/sectors/tourism/tourism.html>
- Fuentes, R. (2011). Efficiency of travel agencies: A case study of Alicante, Spain. *Tourism Management*, 32(2011), 75-87.
- Gholami, R., Emrouznejad, A., & Schmidt, H. (2008). *The Impact of ICT on productivity of airline industry*. (Report No. RP0809). Operations and Information Management, Aston Business School.
- Global Distribution System (GDS) definition. (2009). *Online Business Dictionary*. BusinessDictionary.com Retrieved from <http://www.businessdictionary.com/definition/Global-Distribution-System-GDS>.
- Goeldner, C. R., & Ritchie, J. R. B. (2010). *Tourism: Principles, practices, philosophies* (11th ed.). Hoboken, New Jersey: John Wiley & Sons, Inc.
- Interactive Travel Services Association. (2005 August 25). *GDS Fact Sheet*.
- Interactive Travel Services Association. (2009 February 09). *International Recommendations for Tourism Statistics (2008)*. United Nations.
- International Air Transport Association. (2009, February 12). *IATA Global Distribution Systems fares and ticketing course*. Retrieved from <http://www.iata.org/training/courses/tttg21>.
- Jacobsen, M., Batarow, D., & Bode, M. (2008). IT Innovation in tourism: IT innovation as driver of tourism.
- Jagmohan, N. (2005). *Travel agency operation, concepts and principles*. New Delhi: Kanishka Publication.
- Kracht, J., & Wang, Y. (2010). Examining the tourism distribution channel: Evolution and transformation. *International Journal of Contemporary Hospitality Management*, 22(5), 736-757.
- Laudon, J. P., & Laudon, K. C. (2007). *Management information systems: Managing the digital firm*, Student value edition, (10th ed.). New York, United State of America: Prentice-Hall.
- Laverty, S. (2014). Impact of technology on the travel agency business, *Houston Cronical*. <http://smallbusiness.chron.com/impact-technology-travel-agency-business-57750>.

- Law, R., Leung, K. R., & Wong, J. (2004). The Impact of the internet on travel agencies. *International Journal of Contemporary Hospitality Management*, 16(2), 100-107.
- Luisam, A., Joaquin, A. J., Enrique, B., & Anna, S. M. (2010). An analysis of e-Business adoption and its impact on relational quality in travel agency– Supplier relationships. *Tourism Management*, 31(6), 777-787.
- McKercher, B., & Du Cross, H. (2002). *Cultural tourism: The partnership between tourism and cultural heritage*, The Haworth Hospitality Press.
- McKercher, B., Packer, T., Yau, M., & Lam, P. (2003). Travel agents as facilitators or inhibitors of travel: Perceptions of people with disabilities. *Journal of Tourism Management*, 24, 465- 474.
- Radulovic, L. (2013). The role and potential of global distribution system Amadeus for tourism development at the global level. *Singidunum Journal of Applied Sciences*.
- Rezky, P. S., Huam, H. T., Amran, R., Thoo, A. C., & Sukati, I. (2012). The relationship between marketing mix and customer decision-making over travel agents: An empirical study. *International Journal of Academic Research in Business and Social Sciences*, 2(6).
- Roday, S., Biwal, A., & Joshi, V. (2009). *Tourism operations and management* (pp.164-296). Oxford University Press, New Delhi.
- Sion, B., Mihalcescu, C., & Marginean, A. (2013). The passage from airline reservation systems to global distribution system.
- Sismanidou, A., Palacios, M., & Tafur, J. (2009). Progress in airline distribution system: The threat of new entrants to incumbent players. *Journal of Industrial and Management*, 2(1), 251-272.
- Sismanidou, A., Palacios, M., & Tafur, J. (2008). *New development in Global Distribution Systems (GDSs) for the airline industry: First-Mover Mechanisms that enabled incumbent firms to maintain a leading position*. International Conference on Industrial Engineering and Industrial Management XII congreso de Ingeniera de organization Burgos Spain. <http://www.researchgate.net/publication/268176467>
- Travelport GDS. (2009). *Travelport GDS expands its direct operations in Hungary*.
- Tsang, N. K. F., Lai, M. T. H., & Law, R. (2010). Measuring e-service quality for online travel. *Journal of Travel & Tourism Marketing*, 27(3).
- Werthner, H., & Klein, S. (1999). ICT and the changing landscape of global tourism distribution. *Electronic Markets*, 9(4), 256-262.
- Werthner, H., & Klein, S. (2005). ICT-enabled innovation in travel and tourism. *Innovation and product development in tourism* (pp.71-84). Berlin: Erich Schmidt Verlag.