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A Study on the Influence of Big Data-based Quality on Satisfaction and Repurchase Intention

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Abstract. Aviation industry is not only a labor-intensive key industry that creates high added value, but also a technology-intensive industry that includes high-tech technology. It is necessary to actively introduce fourth industrial revolution technologies such as big data and artificial intelligence. Through the introduction of big data technology, which is the core of the fourth industrial revolution technology, aviation industry will be able to analyze and organize customer's tastes and provide customized services. Through this way, the industry can satisfy customer satisfaction, thereby enhancing competitiveness and efficient aviation work. In addition, information produced in each sector such as aircraft maintenance, safety, and navigation can be analyzed with big data technology to predict and maintain, and efficient use of fuel and aviation route can be optimized. However, the level of domestic aviation industry is insufficient compared to overseas aviation industry, and it is time to prepare preemptive and active countermeasures for domestic airlines to create future growth engine and improve productivity through the use of big data, as well as through mid- to long-term strategies to cope with changes in industrial paradigm. In addition, in the modern society where a huge amount of information is studded every day due to the activation of social networks, even tourism industry is also interested in big data analysis to process large-scaled data and extract information. A lot of studies dealing with this subject is proceeding in the level of nation and academia. However, the utilization of big data is still low, and the discussion applied to the aviation service field is insufficient. Therefore, this study aims to conduct more dense research on the effects of big data-based services on the development of domestic aviation industry, corporate image enhancement and repurchase intention. In order to meet the purpose of this study, the theoretical basis of big data technology, aviation service, service quality, satisfaction, and repurchase intention is pursued through domestic and foreign literature and previous studies. And based on theoretical basis, research model and research hypothesis are set up and verified through empirical research. The empirical study conducted a survey on those who received big data-based aviation services provided by domestic airports and airlines. The collected questionnaire

data were used as basic data for empirical analysis, and demographic analysis, validity and reliability analysis, correlation analysis, and structural equation path analysis were conducted using statistical program SPSS and AMOS. In addition, the indirect effect was verified by using bootstrapping to verify the mediating effect of satisfaction. The results of the path analysis of the structural equation model for hypothesis verification are as follows. <Hypothesis 1> to examine how the economic feasibility of big data-based air service quality affects satisfaction, <Hypothesis 2> to examine how the ease of use of big data-based air service quality affects satisfaction <Hypothesis 3> to find out how the safety of data-based aviation service quality affects satisfaction, <Hypothesis 4> to find out how the responsiveness of big data-based aviation service quality affects satisfaction; All five hypotheses presented in this study were adopted up to <Hypothesis 5> to find out how satisfaction with air service quality affects re-use intention. In order to verify the mediating effect of satisfaction, the sample extraction 5,000 times and the confidence interval 95percent was set, and Bootstrapping was additionally performed to find out that satisfaction has a mediating effect on the relationship between big data-based aviation service quality and repurchase intention. Based on the results of this study, academic implications and practical implications for raising satisfaction and repurchase intention through big data-based aviation service quality are as follows. The academic implications of this study are that it presented an integrated model that explains the positive impact relationship through the medium of service quality and satisfaction in big data-based aviation services, and that practical research was conducted on users using big data-based aviation services. The practical implications of this study are that airports and airlines need to develop services that can offer the economic efficiency, ease of use, security of personal information and service needs of users when providing big data-based aviation services in order to raise the satisfaction of airline service users through big data-based aviation services. In addition, airports and airlines that provide big data-based aviation services should take the strategy of raising satisfaction to increase repurchase intention. And as shown in the results of the mediating effect analysis, it is suggested that satisfaction should be considered more than any other service factors such as economic efficiency among the service provisions of airports or airlines. Despite these implications, the limitation of this study is that it constitutes an indicator for users who have experienced big data-based services provided by domestic airports and airlines. As a result, it seems to be somewhat difficult that the results in this study can be analyzed comparatively with big data-based services of overseas airports and overseas airlines. Therefore, if comparative studies including the users who received the services of overseas airports or overseas airlines are conducted in future studies, it will be helpful to suggest more realistic and practical direction concerning satisfaction.

Keywords: big data, aviation services, service quality, satisfaction, repurchase intention

1. Introduction

As information and communication technology develops, the Internet, mobile, and SNS are emerging, and a large amount of data is produced every day. Today, keywords such as big data, digital innovation, cloud, and platform reflect the change of future business. In all industries, as online and offline converges and small quantity batch production is in full swing, the era of the fourth industrial revolution is underway, where companies with big data will be competitive. The mass-produced products and uniform services of the past can no longer satisfy customers. In the upcoming fourth industrial era, analyzed information will be the basis. Beyond the simple accumulation of information in the past, customers can be identified by using the information to identify customers, grasp customer needs, and provide services tailored to them, thereby maximizing profits for companies and customers (Lee 2016).

The demand for aviation industry, which is the representative industry of tourism industry, is rapidly increasing. The world's economic zone is expected to continue to increase naturally as the economies of the Pacific Rim, Europe, North and Central America and Northeast Asia develop. So, aviation industry is increasing demand by introducing the latest gas and best services such as Airbus' A380 and Boeing's B787. In addition, the aviation industry should understand the needs of diverse customers and survive in the fiercely competitive aviation industry. To survive the competition, you need to secure more customers and develop a variety of products to lead change and improve customer service quality. Therefore, it is time to effectively manage the vast amount of customer data of the airline and to extract useful data from them.

Service industry is actively underway as it is being upgraded and fused around the world. Major countries around the world are promoting service of corporate activities and high value-added economy by strengthening innovation capabilities such as service science and service engineering in order to strengthen the competitiveness of service industry through big data technology in accordance with changes in the global economy and industrial environment (Jeun 2017). Service industry already accounts for more than 70 to 80percent of the GNP in major developed countries such as Germany, Japan, and the UK, and it is taking its position as the driving force of employment and high value industry, becoming the core of economic vitality and job creation (Kang 2009).

In order to promote the advancement of service industry in various fields, Korea is making a lot of efforts to revitalize service industry such as policies including 'Expansion of Private Investment and Key Investment in 7 Major R&D fields', 'Promotion of R&D Service and Promotion of New Recruitment of R&D Human Resource and Strategic Allocation of Technology Development Investment in Knowledge Service and Software Field', and 'Designation of High Value Service Industry as One of 17 New Growth Engine Industries'. This means that the government recognizes service industry as an important industry in the national economy to replace manufacturing (Seo 2017).

Aviation industry is not only a labor-intensive period industry that creates high added value, but also a technology-intensive industry that includes high-tech technology. It is necessary to actively introduce fourth industrial revolution technologies such as big data and artificial intelligence. Through the introduction of big data technology, which is the core of the fourth industrial revolution technology, aviation industry will be able to analyze and organize customer's tastes and provide customized services. This enhances customer satisfaction, thereby enhancing competitiveness and efficient aviation work. In addition, information produced in each sector such as aircraft maintenance, safety, and navigation can be analyzed with big data technology to do predictive maintenance, make efficient use of fuel, and optimize air routes.

However, the level of response in domestic aviation industry is insufficient compared to overseas aviation industry, and it is time to prepare mid- to long-term strategies in industrial paradigm as well as preemptive and active countermeasures for domestic airlines through productivity improvement and creation of future growth engine through the use of big data (Jung et al., 2017). In addition, in the modern society where a huge amount of information is studded every day due to the activation of social networks, even tourism industry is also interested in big data analysis to process large-scaled data and extracts information. A lot of studies dealing with this subject is proceeding in the level of nation and academia. However, the utilization of big data is still low, and the discussion applied to the aviation service field is insufficient.

Therefore, this study aims to conduct more dense research on the effects of big data services on the development of domestic aviation industry, corporate image enhancement and repurchase intention. In addition, the following research purposes are presented to suggest ways to improve the efficiency and diversity of big data-based aviation services.

First, the study classified the quality of aviation service based on big data as the main factor of corporate image enhancement, and tried to confirm whether each factor has a significant effect on service satisfaction. In addition, the importance of satisfaction with aviation services based on big data is recognized and it is intended to contribute to positive recognition and improvement of repurchase intention in the future.

Second, by examining the difference between satisfaction with aviation service quality based on big data and the effect on repurchase intention, the study intends to suggest the major matters necessary to suggest some directions of improvement and development regarding aviation service quality and ways to secure corporate competitiveness and positive perception of corporate image by improving aviation service quality.

In order to meet the purpose of this study, the theoretical basis of big data technology, aviation service, service quality, satisfaction, and repurchase intention is

pursued through domestic and foreign literature and previous studies. And based on theoretical basis, research model and research hypothesis are set up and verified through empirical research. The empirical study conducts a survey of people who have received big data-based aviation services provided by domestic airports and airlines.

The collected questionnaire data were used as basic data for empirical analysis, and demographic analysis, validity and reliability analysis, correlation analysis, and structural equation path analysis were conducted using statistical program SPSS and AMOS. In addition, the indirect effect is verified by using Bootstrapping to verify the mediating effect of satisfaction. Based on the results of the empirical analysis, the summary of the results of the study, the realistic meaning, and the research direction of the follow-up studies are summarized.

2. Theoretical Background

2.1. Big data

2.1.1. Concept of big data

We use electronic devices such as smart phones and PCs in everyday life, and we are generating a lot of data by using credit cards and mobile payments in restaurants, daily products stores, etc. In addition, the fourth wave of smart revolution, which has reached the information revolution, is rapidly surging with various types of data such as text and images as unstructured information generated through social network services.

The Fourth Industrial Revolution means the era of realizing human-centered smart value through creative use of smart technology and data. Therefore, big data is one of the key keywords that will lead the smart era and it is spreading and developing rapidly (National Information Society Agency 2013). In addition, the rapid spread of smart devices and social networks have led to the exponential increase in the amount of data, to a great change in the production, distribution and consumption system of data, and to the era of big data where data can become an economic asset (Song et al., 2014).

A phenomenon of big data is rapidly spreading due to explosive increase of multimedia contents, activation of SNS due to spread of smart phone, expansion of communication network, and increase of customer data collection activity of companies. Although data processing has been discussed before, a currently rising concern is that a large amount of data that can be used for processing and analysis has been accumulated as electronization and automation of various industries using IT have been greatly advanced (Kim 2013).

Big data simply meant a large amount of data, but today, it means ‘data beyond the scale that can collect, store, manage and analyze using traditional database

software tools' because a huge amount of data that could not be imagined before is collected and analyzed.

Big data is a combination of 'Big' and 'Data' in English, meaning large and massive data as the word means, but it does not simply mean 'quantitatively massive.' It means structured and unstructured data that are diverse than existing data and are difficult to collect, store, analyze with existing methods or tools.

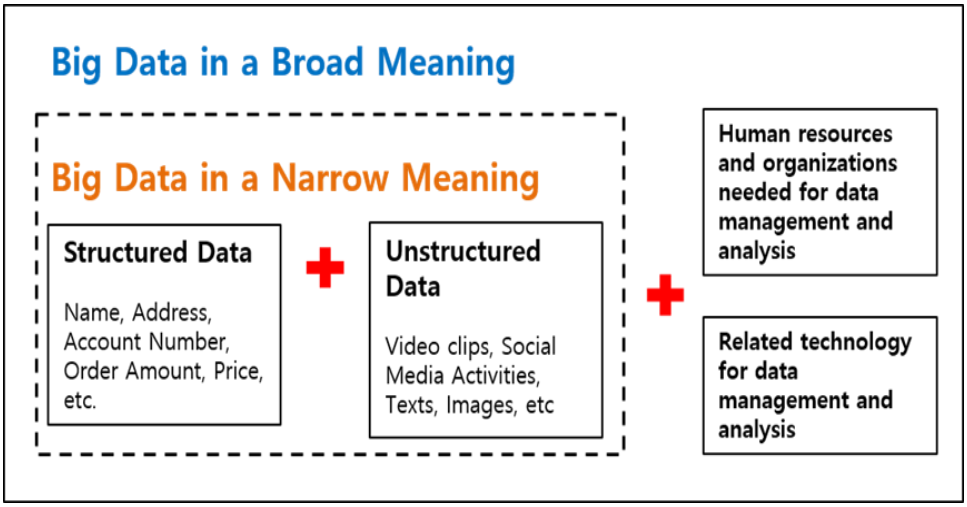

Fig. 1: Research model.

In 2011, McKinsey & Company, a global consulting firm, defined Big Data as "data that exceed the scope of storage, management and analysis through traditional database software." He also stated that this definition is subjective and will continue to change in the future (McKinsey 2011).

Gartner, Inc., an IT advisory firm, called big data the crude oil of the 21st century, and International Data Corporation (IDC), an IT market research company, defined in 2013 as "it is a next-generation technology that supports extraction of value at low cost and high-speed discovery and analysis of data."

Ham Yu-geun and Chae Seung-beom stated "big data usually has a huge size of dozens to thousands of terabytes (TBs), and various atypical data are included. The generation-distribution-consumption (use) occurs in a few seconds to several hours, which means a data set that is very difficult to manage and analyze in an existing way."

Thus, as big data becomes important, the most important thing to define big data is the scope of big data. If the definition of the scope of big data is different, the approach itself is different, so it is necessary to clarify it when defining big data (Lee 2012). In addition, big data is not a strictly defined academic term, so it is sometimes called big data even if it does not fit the previous definitions. So, it is predicted that the definition of big data will be subjective and continue to change (Park 2014).

In this study, we define big data not as a new thing that we have not known but as everything that we have made into data including all the things we have not perceived as data until now.

Table 1: The concept of big data.

Researcher	Concept
(McKinsey 2011)	Large-scale data that exceeds the scope of storage, management, and analysis in existing ways
(IDC 2011)	Next-generation technologies and architectures designed to extract value from data, collect, excavate and analyze data at high speeds
(Gartner 2011)	It is the same as crude oil in the 21st century, and many kinds of data are defined as a phenomenon that is generated so quickly that companies cannot handle it.
(Ham Yu-Geun and Chae Seung-Beom 2012)	It usually contains a large size of dozens to thousands of terabytes (TBs), and contains a variety of atypical data. The generation-distribution-consumption (use) takes several seconds to several hours, making it a very difficult data set to manage and analyze in an existing way.
(Technical standard institute 2013)	It is difficult to manage and analyze in an existing way due to various data types and fast generating speed. Technology to process large amounts of data and normal data, technology to extract valuable information and process of activity to extract the data.

2.1.2. Characteristics of big data

The characteristics of big data generally can be explained with volume, velocity, and Variety, which are referred to as 3V. Value and complexity are added to this.

The volume of data has increased exponentially as information produced in society as a whole is stored in digital data format due to the development of IT technology. As for the velocity, as information increased that should be processed in real time such as sensor information, the speed of data generation, collection, and processing increased. Data processing speed is recognized as an important technical factor to utilize the analysis results of large data in real time. Variety has diversified the types of unstructured data such as text and multimedia along with the increase of data types like system log, SNS, and location information (GIS).

Table 2: Characteristics of big data (Lee 2018)

Characteristics	Meaning
Volume	Refers to cluster of large-scaled data and related technologies and personnel
Velocity	Fast data generation rate and processing rate
Variety	Various types such as structured data as well as unstructured
Value	There is a trend of expanded meanings in terms of value of analysis

	and effect of utilization rather than simple data storage
Complexity	Complexity of data management and processing such as the expansion of data type and the difference of storage method needs a new and intensified technique.

2.2. Aviation industry and air service

2.2.1. Aviation industry

Aviation industry has achieved tremendous development and growth for more than 100 years since the first machine-driven planes flew off the coast of North Carolina in 1903. There were only about 1,000 aircraft available during World War I, but according to 2018 Boeing data, the number of newly built civilian aircraft for 20 years from 2015 was expected to reach 39,620.

In addition, the number of airplanes generally used in Korea will reach 381 units by 2019, and the number of civilian aircraft is also expected to increase significantly due to the growth of low-cost carriers. The market size of global aviation industry (excluding airlines) is expected to grow by an average of 3 to 4 percent annually from $ 547.8 billion in 2015 to $ 739.1 billion in 2024. Considering that Korea's GDP in 2015 is $1.377 trillion, it accounts for 39.8percent of Korea's GDP in 2015, and the aviation industry is huge even though aircraft service industry such as aircraft operation and cargo transportation is not included in the percentage.

Aviation industry traditionally meant aircraft manufacturing and air transportation using aircraft. However, recently, as the field of creating added value by using aircraft has become very diverse, it is understood as a comprehensive concept with a series of industrial activities related to aircraft from the production of aircraft to the operation. Current aviation industry supports various tasks such as ground service, core and auxiliary service of air transportation, physical and human service by utilizing digital technology, and occupies a large portion of the development of this technology, thereby reducing costs, improving productivity and generating additional profits. In addition, aviation industry basically provides physical services such as geographical movement of passengers or cargo, so it can be thought that the impact of the fourth industrial revolution through convergence with information and communication technology will be insignificant.

However, the added value provided by aviation industry has customer service offered throughout flight in addition to this physical movement, and this field is a part of the virtually of information processing, so it is possible to improve through convergence with information and communication technology (Lim 2016). In other words, it is possible to provide newly-added value to customers through improvement of customer service focusing on virtually in addition to the traditional core value of aviation industry such as physical movement of passengers or cargo (Lee et al., 2018).

2.2.2. Aviation service

Service means 'the production and service of necessary goods and services' indicating 'production' in a classical sense. In 1960, the Term Definition Committee in AMA (American Marketing Association) defined 'service' as "the act, benefit and recovery satisfaction provided for sale or accompanied by product sales, which implies a wide range of usages of the term itself as well as another type of mutually heterogeneous service." And it is not easy to define 'service' uniformly because the essential definition of service components is inaccurate (Rathmell and John 1966).

McCarthy (2010) defined 'marketing' as the maximum satisfaction of customers delivered from producers to consumers or users, and corporate activities that manage the distribution of goods and services to achieve the purpose of the company, including service services in the definition.

Air transportation means transportation itself, and it has characteristics of service industry. Air transportation business is a business that transports passengers, cargo, and mail for a fee using an aircraft. It is a kind of business act that provides intangible transportation service to consumers and collects the fare in return for profit. Ji Yong-sun (1995) defined the main attribute of air transportation products as service to transport passengers to their destinations while flying predetermined air routes using tangible materials called aircraft. Lee Sun-hee (2006) said that air transportation is aimed at transporting people or goods by providing a certain space, but only when human services are combined in the provided space, it becomes a worthwhile product.

Therefore, this study aims to define aviation service as a body of all human and physical factors that are conducted for customers in all the business performance stages that airlines have conducted for the purpose of air transportation of people or objects based on the definitions of previous studies.

2.2.3. Cases of big data-based air service

Major airports around the world are pursuing global smart airports by introducing smart security search, smart check-in, and biometric information certification to enhance the efficiency of operation and passenger service by utilizing Big Data, AI, and IoT technology.

Incheon International Airport provides airport users with aviation services based on big data technologies such as self-check-in, self-backdrop, automatic immigration screening, and smart parking. Especially, for smart service by using the latest IT technology, 'Self Zone' which allows passengers to check themselves and handle baggage is placed in the center of the departure hall so that passengers using the airport can conveniently check on the flight and shorten the waiting time, thereby eliminating congestion at the departure hall. In addition, the introduction of Auto Departure Gate prevents wrong entry, provides airport information through a dialogue method between passengers and airlines called Smart Signage, and strives to improve passenger convenience through the introduction of the passenger flow management system.

Frankfurt Airport in Germany is improving the efficiency of airport operation by implementing sensor-based ECO-Terminal, which analyzes passenger traffic and congestion through various devices such as boarding pass and Bluetooth. In addition, the self-backdrop service, and the biometrics-based automatic immigration system are operated to simplify the passenger process. In order to promote customer service, we provide a number of experiential services such as road guidance through mobile app, airport tour, and VR Flight Simulator.

Southwest Airlines in the United States is working with big data firm Acxiom to offer different advertisements for each passenger on the airplane seat screen. Axiom analyzes the areas of users' interest based on more than 1,500 big data such as personal information, credit card information, and medicines being taken by 500 million people around the world, including 96 percent of Americans, and provides individual product advertisements that passengers are paying attention to in recent years through monitors in front of the seats. Through this personalized experience, customer satisfaction is enhanced.

In March 2016, KLM Airlines introduced the Chabot service for the first time to provide reservations, ticket issuance, services related to changes, travel schedule confirmation, and check-in notification services. Customers can get boarding passes using Facebook Messenger. In addition, the messaging app provides information such as check-in, flight information confirmation, notification message of electronic boarding pass, and provides detailed situation of flight delay with alarm message.

2.3. Service quality

2.3.1. Concept of service quality

Generally, service quality is associated with intuitive things such as kindness, bright laughter, and comfort. However, service quality should be evaluated in a general and comprehensive way based on customer satisfaction as well as management performance (Lee et al., 2012). Service quality is also divided into actual service quality and perceived service quality. The main concern is the perceived service quality consisting of evaluation and judgment of customer quality rather than actual service quality (Seo 2014). Service quality is defined in many studies, but it has also been defined as a consensus or discrepancy between the expected quality before service and the perceived quality by consumers after service (Yang 2016).

Parasuraman et al. (1988) defines service quality as the degree of discrepancy in the consumer's expectation, the awareness of service, and its direction. It is said that service quality is highly evaluated if consumers’ perceived value is higher than the consumer's expectation before receiving service. Grönroos (1984) defined service quality as a result of comparative evaluation between customer's expected service and perceived service. He said that such service quality is influenced by customer's expectation, technical and functional characteristics, and image. Dodds & Monroe (1985) divided the approaches into subjective quality and objective quality.

Subjective quality is a concept that includes people's subjective reaction to an object, and objective quality is a concept to explain the superiority and excellence of practical and technology between products. Zeithaml & Bitner (2003) defined service quality as attitude or judgment on service superiority, and Liu et al. (2009) said that service quality can be defined as a subjective impression of customers on the best service received from sellers.

Moon Sang-hee (2000) defined service quality of tourist destinations as a comprehensive evaluation in the whole process and customer's subjective judgement based on the concept of service quality, not perceived after receiving the service from a hotel restaurant. Kim & Sun (2006) defined the service quality as the whole bodies of the human and material facilities provided for the satisfaction and convenience of the customer during the staying period of the customer arriving at the restaurant.

Therefore, this study defines the quality of aviation service as the overall evaluation of service users for all the services provided at airports or airlines based on the definition of previous studies.

2.3.2. Components of service quality

Generally, the service is difficult to measure due to various characteristics such as intangibility, non-separability, heterogeneity, and perishability. Because there is a part that cannot be identified by objective standards, the subjective evaluation perceived by users who have experienced the service is stronger (Parasuraman et al., 1994).

Rust & Oliver (1994) suggested that service quality consists of three components: service product, service delivery, and service environment. Grönroos (1988) stated that service quality consists of functional quality and technical quality. Sam & Tahir (2010) composed the components of e-service quality into four categories: reliability, ease of use, design, and informatively.

On the other hand, when research was to be examined that measured service quality in accordance with aviation users' path and flow, service quality was examined by dividing it into service process quality and service quality.

Cho Young-hee et al. (2012) measured the sub-elements of service process quality by dividing them into five elements of reservation procedure, boarding procedure, flight operation, baggage processing, and compensation procedure. Lee Jun-yeop and Kim Sung-pi l (2007) divided the service into five elements of reservation and ticketing service, boarding and check-in service, in-flight service, operation service, compensation and supplementary service.

In the previous studies on e-service quality factors, Lee Se-hoon (2010) composed of seven factors of e-service quality of low-cost carriers: tangibility, reliability, responsiveness, assurance, empathy, convenience, and security. In the study on the influence of e-service quality of travel industry by Kwon Il-joon (2012) on tourist satisfaction, word of mouth, and travel agency reuse, he stated that efficiency, system availability, reliability, and security were the components of e-

service quality. In addition, Lee (2015) presented five factors of e-service quality of tourism applications including reliability, informativity, responsiveness, security, and ease of use.

Therefore, this study aims to draw four factors of economic efficiency, ease of use, safety, and responsiveness based on the factors presented in the previous studies of e-service quality that are judged to meet the purpose of the study.

2.4. Satisfaction

The dictionary meaning of satisfaction is "a state of being happy with no lack of emotional fullness," which indicates the degree to which individuals' needs and working environment coincide well. It can be said to be an internal indicator of the harmony between the individual and the working environment. In addition, satisfaction is a concept that includes dual satisfaction in social and economic aspects. Social satisfaction derives from psychological satisfaction that is due to interaction with the other party or the favorable behavior of the other party, and economic satisfaction derives from satisfaction from economic results through transactions (Sven 2005).

Anderson & Narus (1984) said that satisfaction is defined as a positive state of emotion from the output of all the other party's elements in the relationship with the other party. Such definition of satisfaction can be linked to a long-term orientation, which is a key factor in forming a partnership with the other party, and enables one to better predict the behavior to be done by the other party in the future. Therefore, satisfaction means that individuals' subjective experience, or the result of cognition or perception, reaches out the original expectation or becomes more than that.

Chon (1990) said that satisfaction is the result of comparing the cost paid by the consumer to a product or service. Therefore, satisfaction can be said to consist of subjective judgment of an individual. This attitude is based on the experience of comparing an expected result with an actual result, and this experience affects the attitude of the consumer and the repurchase intention after purchase. Therefore, customer satisfaction can be viewed as a view of outcome and process (Yi 1998). In terms of the results, customer satisfaction was conceptualized as a result of consumption experience, and satisfaction was evaluated from the result of consumer experience through consumption. In terms of the process, the evaluation process plays an important role in the basis of customer satisfaction.

Howard & Sheth (1969) defined satisfaction as a cognitive state that consumers feel that they have been compensated appropriately or inappropriately for the price they paid. Wsetbrok & Reilly (1983) also claimed that satisfaction is an emotional response not only to the purchase behavior of buying certain products and services in retail stores, department stores, and markets, etc., but also to experiences related to the overall behaviors that occurred.

Engel & Blackwel (1982) stated customer satisfaction as a subjective evaluation based on the cognitive perspective that compares customer satisfaction with the

performance of the product and the previous expectation of the important attributes of the product. Tse & Wilton (1988) called customer satisfaction the consumer's response to the difference between the consumer's prior expectations and the actual performance perceived after consumption. Day (1984) said that customer satisfaction was a continuous process of expectation before purchase, purchase and use behavior, and evaluation after purchase, and behavioral response. In addition, Kotler & Keler (2006) defined customer satisfaction as pleasure or disappointment that is shown by comparing people's expectation of products with the results after using the products.

Park Myung-ho and Cho Hyung-ji (2000) divided customer satisfaction into cognitive and emotional factors and presented consumptive emotion as emotional factors. Park Bong-Gyu et al., (2003) said that customer satisfaction is a combination of cognitive and emotional factors, and the expectation fulfillment of cognitive factors is the evaluation of the participants on whether they are offered specific attributes or benefits as expected or not. And the desire fulfillment was defined as the evaluation of the degree of whether the attribute or performance of the facility or service would offer the ultimate benefit that a participant wanted or give the value that he or she expected.

When applying this to aviation service, customers who want to use airports and aircraft obtain information such as images and awareness of airports and airlines from their family, relatives, acquaintances, etc., review whether they are airports and airlines that meet their expectations, and decide whether they are airlines that meet their expectations. After suing airlines that suit their tastes, customers feel satisfied if the services meet their expectation with perceived emotion and experience combined. If the services did not meet their expectation, the evaluation of dissatisfaction appears.

2.5. Repurchase intention

Repurchase Intention is a purchase intention to reuse the products currently used by consumers or the services of a specific company in the future while using the services and products of the company. Therefore, repurchase intention can be defined as the possibility that customers will use products or service providers repeatedly in the future (Lee et al., 2007).

In the study of Park Jeong-ha (2008), repurchase intention is the willingness or idea of the customer to repeatedly use any service or product. Oliver (1981) defined it as the possibility that customers reuse purchased products, in which customer satisfaction can affect the attitude after purchasing the product and this attitude affects the intention of reuse. In addition, Bitner (1990) said that repurchase intention is directly affected when they experience satisfaction or dissatisfaction with service quality.

Repurchase intention is recognized as a key concept in corporate marketing as a major factor for customer retention and loyalty that is important for companies to create profits. This is because maintaining existing customers is more effective in

increasing sales of companies than attracting new customers and because the maintenance cost of existing customers is only one-fifth of the maintenance cost of new customers (An 2018).

Therefore, repurchase intention is an important variable that plays a major role in taking the lead in the competition in air transportation market from the perspective of air service providers (Lee et al., 2013).

Park Yoon-joo (2010) said that recommendation or word-of-mouth through positive feedback concerning individuals' reuse can create the continuous and sustainable performance or profit of a company from a long-term perspective, and that such recommendation behavior can cause positive changes to other consumers directly or indirectly because it can form a positive image of the service, product, and company brand. The purpose of this study is to define repurchase intention by including the intention of future behavior of customers with repurchase intention and the intention of recommending to others (Lee 2012).

The definition of repurchase intention has been defined by various scholars in various ways, but this study define repurchase intention as the intention to use airport or airline service again for the purpose of users who have experience using big data-based service provided by airports and airlines, or to recommend specific airlines to their acquaintances.

3. Research Design

3.1. Research model and hypothesis

3.1.1. Research model

This study started with the assumption that the service quality of big data-based aviation services has a very sensitive effect on users. Therefore, in order to prepare a plan for the activation of big data-based aviation service and the promotion of satisfaction, the relationship between satisfaction and repurchase intention according to big data-based aviation service quality is empirically analyzed.

In order to empirically verify the flow of the study, a research model was suggested like Fig. 2 based on the previous studies presented in the theoretical background to study the effects of big data-based aviation service quality on satisfaction and repurchase intention.

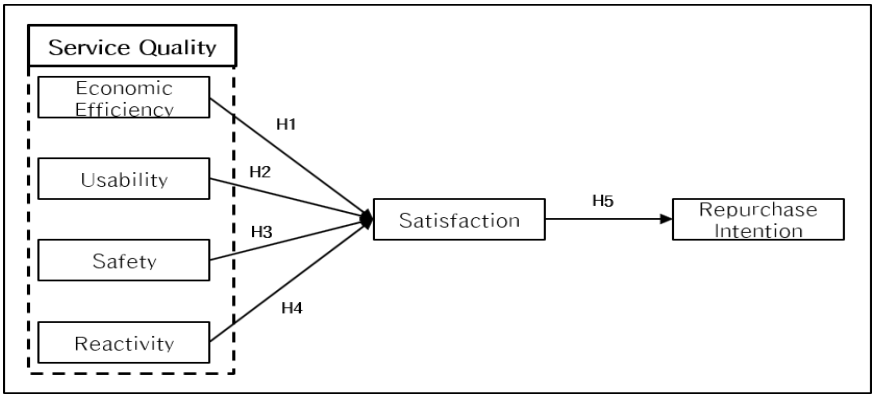

Fig. 2: Research model.

3.1.2. Hypothesis

This study establishes the hypotheses based on previous studies to investigate the interaction among service quality as an independent variable, satisfaction as a parameter, and repurchase intention as a dependent variable. Recently, some researchers have argued that the preceding variable of customer satisfaction is service quality, and emphasized the effect of service quality on customer satisfaction based on the research that customer satisfaction is increased when the first perceived service quality is higher.

Park Jong-woo (2007) verified the causal relationship between service quality and customer satisfaction using SERVPERF, and as a result, proved the direct causal relationship between service quality and customer satisfaction. Park Dong-kyun (2005) said that aviation service can be classified into human service, in-flight service, physical service, and ground service.

Among them, physical service consists of product service system and environmental service system, and the most important thing in physical service is reliability of service, so it is said that it is necessary to provide quality service for meeting satisfaction from customers.

In the study on the effect of airline service quality centered on low-cost airline users by Park Jeong-hang (2011) on customer satisfaction, switching barriers and customer loyalty, the relationship between service quality and customer satisfaction was analyzed for low-cost carrier.

As a result of examining the relationship between airline service quality and customer satisfaction by classifying it into human service quality, communication, physical service quality, and systemic service quality, the result of the analysis of the relationship between airline service quality and customer satisfaction was found to have a positive effect on customer satisfaction.

Previous studies on service quality and satisfaction have shown that service quality increases customer satisfaction, and high service quality has a great influence on satisfaction on service quality and satisfaction in empirical research. Therefore, in

this study, the following hypotheses 1, 2, 3 and 4 were established based on the results of previous studies on the positive (+) effect of the relationship between satisfaction and sub-factors of aviation service quality.

Hypothesis 1: The economic efficiency of big data-based aviation service quality will have a significant positive effect on satisfaction.

Hypothesis 2: The ease of use of big data-based aviation service quality will have a significant positive effect on satisfaction.

Hypothesis 3. The safety of big data-based aviation service quality will have a significant positive effect on satisfaction.

Hypothesis 4. The responsiveness of big data-based aviation service quality will have a significant positive effect on satisfaction.

In the previous studies on the satisfaction and re-use intention of aviation service quality, Park In-joo and Choi Ho-gyu (2010) confirmed the positive effect of aviation room service on customer satisfaction, and the influence of customer satisfaction on repurchase intention and intention to recommend.

In the study of relationship analysis between customer satisfaction, service quality, risk perception and repurchase intention of low-cost carriers, Choi Jin-ju (2012) showed that reservation/discounting service, flight/in-flight service among service quality factors had positive influence on repurchase intention, and airport service and human service did not have significant influence on repurchase intention.

Kang Hye-sook and Cho Soo-hyun (2012) considered repurchase intention as a perceptual response of customers, such as intention to re-use the same airline, and giving information to others to use the same airline, in the study of the effect of the attributes of international airline service quality on loyalty, customer attitude, and repurchase intention.

As a result of empirical analysis on the relationship between criteria of airline selection, customer satisfaction and re-use intention of routes to United States, it was found that in-flight service among criteria of airline selection of the routes to United States had a significant positive effect on re-use intention. And airport service, flight service, and price service did not affect repurchase intention (Lee et al., 2016).

Based on the results of previous studies related to satisfaction and repurchase intention, this study set the following hypothesis 5.

Hypothesis 5. Satisfaction of aviation service quality based on big data will have a significant positive effect on repurchase intention.

3.2. Manipulating definition of variables, survey design and analysis method

3.2.1. Manipulating definition of variables

This study used four variables of economic efficiency, ease of use, stability and responsiveness that are considered to meet the purpose of this study among the

variables that researchers used in the previous studies on service quality of big data-based aviation service, which is an independent variable.

Table 3: Measurement items.

Variable Name	Question
Economic Efficiency	Using big data-based aviation services has saved costs.
	Time was saved by using big data-based aviation services.
	Using big data-based aviation services makes it think that it is reasonable to consume.
	I think that using big data-based aviation services is economical.
Usability	The overall usage of big data-based aviation services is simple.
	Big Data-based aviation services are convenient to interact with customers.
	The process of using big data-based aviation services is simple.
	The use of big data-based aviation services is clear.
Safety	Big Data-based aviation services do not share personal information.
	Personal information in big data-based aviation services is safely managed.
	Personal information protection policies in big data-based aviation services are well notified.
	The process of using big data-based aviation services feels safe.
Reactivity	Big data-based aviation services are fast in performance.
	Big Data-based aviation services provide desired information.
	Big Data-based aviation services respond quickly to the needs I want.
	I think big data-based aviation services respond to demands immediately.
Satisfaction	I am satisfied with the level of the big data-based aviation service.
	I think the choice of big data-based aviation services was right.
	The quality of big data-based aviation services is satisfactory.
	Big data-based aviation services are generally satisfactory.
Repurchase Intention	I plan to use the big data-based aviation service we use next time.
	Next, we will consider the use of big data-based aviation services as a top priority.
	I will not change my airline as long as big data-based aviation services continue.
	I will recommend big data-based aviation services to our acquaintances.

The measurement items were 16 items, which defined the degree to which users of big data-based aviation services perceive economical in terms of cost, and

consisted of 4 items such as cost reduction, time-saving, rational consumption, and economic efficiency in using services. The ease of use is defined as the degree that it is not difficult to use big data-based aviation services. It consists of 4 items such as simplicity of overall use, interaction with customers, simplicity of usage procedure, and clarity of usage method. Safety is defined as the degree to which the personal information of users of big data-based aviation services can be safely protected, and it consists of 4 items such as non-sharing of personal information, safe management of personal information, notice of personal information protection policy, and safety of progress. Responsiveness is defined as the response and processing speed of big data-based aviation services, and consists of four items: performance speed, provision of desired information, speedy response, and immediate response.

The satisfaction, which is a parameter of this study, is defined as the overall service satisfaction of users through big data-based aviation services, and consists of four items such as the results after the experience of big data-based aviation services and the overall emotional state.

The re-use intention as a dependent variable is defined as the degree of trusting the service used through the use of big data-based aviation services and maintaining the relationship for a long time. The following four types are defined: future use plan, active use degree, continuous use will, and acquaintance recommendation. All items are measured on the Likert 5-point scale.

3.2.2. Survey design and analysis method

To achieve the purpose of this study, the subjects of this study were the users who used big data-based services provided by domestic airports and airlines. The subjects of this study were surveyed for 30 days from June 1, 2021, to June 30, 2021. A total of 400 questionnaires were distributed and 368 copies were collected. 17 copies of the collected questionnaires were excluded from the inappropriate responses, and 351 valid samples were used as the data for the final analysis. SPSS and AMOS statistical program were used for statistical processing of this study, and the specific analysis method is as follows.

First, frequency analysis was conducted to understand the demographic characteristics and general characteristics of the subjects. Second, in order to understand the reliability and validity of the scale used in this study, the factor analysis was made by using Verimax Roration method and as for the reliability analysis, Chonbach's α coefficient was measured through the way to exclude items that hinder internal consistency. In addition, the convergent validity was confirmed through confirmatory factor analysis. Third, before the hypothesis test, correlation analysis between variables was conducted to diagnose the problems of multiple collinearity and confirm the discriminant validity. Fourth, based on the refined measurement items, the mediating effect of satisfaction was verified by using structural equation model analysis and bootstrapping for hypothesis verification.

4. Empirical Analysis

4.1. Demographic characteristics

As for gender, 224 males (63.8%) and 36.2 females (36.2%) were surveyed, indicating that males were more likely to use big data-based aviation services than females. The number of unmarried people was 148(42.2%) and the number of married people was 203(57.8%). As for age, there were 57 people in their 20s(16.2%), 92 people in their 30s(26.2%), 124 people in their 40s(35.2%), and 78 people in their 50s or older(22.3%). The highest level of education was high school graduates 58 high school graduates (16.5%), 245 college graduates, and 48 persons (13.7%) completed graduate courses. As for the number of service use, 154 people used it less than 10 times (43.9%), 92 people less than 50 times (26.2), 66 people less than 100 times (18.8%), and 39 people more than 100 times (11.1%). The demographic characteristics of the sample are analyzed as follows in Table 4.

Table 4: Characteristics of samples.

	Division	Frequency (person)	Ratio (5)
Gender	Male	224	63.8
	Female	127	36.2
	Total	351	100.0
Marital status	Unmarried	148	42.2
	Married	203	57.8
	Total	351	100.0
Age group	20s	57	16.2
	30s	92	26.2
	40s	124	35.3
	Over 50s	78	22.3
	Total	351	100.0
Educational Background	High school graduate	58	16.5
	A College Graduate	245	69.8
	Graduate School	48	13.7
	Total	351	100.0
Service usage frequency	Less than 10 times	154	43.9
	Less than 50 times	92	26.2
	Less than 100 times	66	18.8
	More than 100 times	39	11.1
	Total	351	100.0

4.2. Validity and reliability analysis

4.2.1. Exploratory factor analysis and reliability analysis

As a result of exploratory factor analysis, KMO measurement was .857, which is close to 1, so this tool can be seen as suitable data for factor analysis. Bartlett's unit matrix verification statistics also appeared to be 1789.719, which proved that it was not statistically unit matrix at the significance level of .001 and it was suitable for factor analysis. The result of calculating Cronbach's α coefficient to verify the reliability of the measurement tool of location characteristics composed through factor analysis is the same as Table 5. Convenience was .879, professionalism .917, satisfaction .891, and corporate image .964, all of which were more than .5. Therefore, the internal consistency of the questions was secured.

Table 5: Exploratory factor analysis results.

Clause	Component						Extract	Cronbach's α
	Economic Efficiency	Usability	Safety	Reactivity	Service Satisfaction	Repurchase Intention		
Economic Efficiency 1	**.773**	.177	.069	.160	.097	.196	.708	.898
Economic Efficiency 3	**.745**	.080	.067	.313	.253	-.005	.728	
Economic Efficiency 4	**.725**	.264	.119	.157	.180	.027	.688	
Economic Efficiency 2	**.724**	.147	.082	.284	.191	.029	.671	
Usability 2	.127	**.796**	.033	.030	.120	.137	.686	.874
Usability 3	.131	**.775**	.158	.067	.108	.230	.700	
Usability 4	.166	**.710**	.096	.146	.256	.027	.628	
Usability 1	.129	**.702**	.148	.130	.129	-.049	.567	
Safety 1	.017	.124	**.858**	.144	.093	.052	.784	.795
Safety 2	.252	.198	**.805**	.218	.055	.034	.804	
Safety 3	.292	.263	**.694**	.082	-.048	.089	.653	
Safety 4	.224	.037	**.622**	.134	.107	.285	.641	
Reactivity 3	.138	.144	.023	**.715**	.155	.127	.622	.764
Reactivity 4	.376	.142	.172	**.669**	.240	.122	.711	
Reactivity 1	.200	.198	.042	**.611**	.090	.405	.638	
Satisfaction 2	.220	.160	.127	.159	**.778**	.134	.739	.747
Satisfaction 3	.329	.103	.048	.084	**.634**	.365	.629	
Satisfaction 1	.248	.285	.057	.342	**.607**	.091	.605	
Repurchase	.166	.131	.053	.131	.297	**.652**	.659	.677

Intention 1								
Repurchase Intention 3	.145	-.052	.177	.132	.396	**.643**	.642	
Repurchase Intention 4	.205	.405	.067	.442	-.129	**.561**	.737	
Eigen Value (total)	4.290	4.410	2.210	2.212	2.067	2.015		
Distribution (%)	17.158	16.440	8.840	8.489	8.270	8.060		
Accumulated Distribution (%)	17.158	3.598	42.438	50.928	59.197	67.257		
Notes: 1. KMO(Kaiser-Meyer-Olkin) =.911 2. Bartlett = 2649.424, Degrees of Freedom = 300 Significance probability = .000								

4.2.2. Confirmatory factor analysis

In order to evaluate whether the measurement items used in this study were properly measured, the concentration validity was verified through confirmatory factor analysis. Convergent validity was confirmed by composite reliability and average variance extracted.

As a result of confirmatory factor analysis of Table 6, CR value is .7 or more and AVE value is .5 or more, so convergent validity is secured. In addition, model's goodness of fit of the measurement model was X2=393.124, DF=263, p<.001), CMIN/DF (3)=1.689, GFI (standard value 9)=0.908, AGFI (standard value 9)=0.87, NFI (standard value 9)=0.961, CFI (standard value 9 9 9 9)=0.961)=0.988, IFI(standard value 9)=0.988, RMSEA(standard value .05)=0.039, and all of them were found to meet the standard value except AGFI(standard value 9)=.864.

Table 6: Confirmatory factor analysis result.

Concept Variables	Measurement Slause	Standard Loading Value	standard Error	t-value	Composite Reliability (CR)	Average Variance Extracted (AVE)
Economic Efficiency	Economic Efficiency 1	.872			.941	.842
	Economic Efficiency 3	.924	.043	22.966		
	Economic Efficiency 4	.955	.043	24.612		
Usability	Usability 1	.882			.960	.889
	Usability 2	.968	.040	27.402		
	Usability 3	.975	.040	27.869		
Safety	Safety1	.951			.975	.906
	Safety2	.948	.025	34.795		
	Safety3	.934	.029	32.449		
Reactivity	Reactivity 1	.959			.966	.879

	Reactivity 2	.991	.041	27.188		
	Reactivity 3	.939	.042	26.434		
Satisfaction	Satisfaction1	.965			.965	.903
	Satisfaction2	.946	.027	36.089		
	Satisfaction3	.939	.028	34.802		
Repurchase Intention	Repurchase Intention1	.929			.946	.855
	Repurchase Intention2	.967	.033	31.094		
	Repurchase Intention3	.876	.044	23.698		

4.3. Descriptive statistics and correlation analysis

4.3.1. Descriptive statistical analysis

Before the hypothesis test, the average, standard deviation, skewness, kurtosis, maximum and minimum values of each latent variable were looked over to examine the general tendency and characteristics of the research variables. The results of the analysis show that the kurtosis and the degree of distortion of each variable did not exceed the absolute value standard 2, thus satisfying the normality hypothesis.

Table 7: Descriptive statistical analysis result.

	Minimum Value	Maximum Value	Average	Standard Deviation	skewness	Kurtosis
Economic Efficiency	1.29	5.00	4.0253	.71137	-.693	1.006
Usability	1.00	5.00	3.8064	.78881	-.344	-.168
Safety	1.00	5.00	3.8418	.88012	-.813	.622
Reactivity	1.00	5.00	4.1347	.73724	-.960	1.485
Satisfaction	1.67	5.00	3.9293	.79801	-.594	-.081
Repurchase Intention	1.33	5.00	3.8535	.78147	-.482	.024

4.3.2. Correlation analysis

In this study, the correlation analysis between the variables used in this study was conducted to analyze the preceding correlation between the variables. As a result, the results such as Table 8 were derived. As a result of correlation analysis, the distribution of significant correlation coefficients at the significance level .01 was .365~.604, so the variables used in this study were found to have no problem with the multiple collinearity raised in multiple regression analysis. Therefore, the model used in this study is considered to be suitable for the later hypothesis test because reliability and validity are secured.

In addition, discriminant validity can be secured when the square root of the AVE value of each variable is higher than the square value between the corresponding

latent variable and other latent variables. In this study, the correlation coefficient value was lower than the square root value of AVE value, and the discriminant validity was secured.

Table 8: Descriptive statistical analysis result.

	1	2	3	4	5	6	AVE
Economic efficiency	.709						.842
Usability	.591**	.808					.899
Safety	.456**	.472**	.820				.906
Reactivity	.601**	.451**	.511**	.772			.879
Satisfaction	.587**	.508**	.415**	.541**	.815		.903
Repurchase Intention	.604**	.435**	.365**	.584**	.548**	.731	.855

** *p<.01*

4.4. Hypothesis verification

4.4.1. Structural equation path analysis

After refining the measurement items first through exploratory factor analysis, the construct concept of the measurement model, that is, the concentration validity and discriminant validity of the latent variables were statistically verified through confirmatory factor analysis. As a result, the validity and reliability of the construct concepts in the measurement model were high, so the structural model, which is the relationship between the latent variables, should be statistically verified.

This study model is to understand the causal relationship between satisfactions and repurchase intention of the quality of big data-based aviation service. The results of verifying the structural relationship between service qualities, satisfaction and repurchase intention for users using big data-based aviation services provided by domestic airports and domestic airlines are as follows in Table 9 and Fig 3.

Table 9: Verification of research hypothesis.

Hypothesis	Path	Pparameter Estimate	Standardization Coefficient	S.E	t	p	Adoption or Not
Hypothesis 1	Economic efficiency -> Satisfaction	.284	.286	.045	6.343	.000***	Adopted
Hypothesis 2	Usability -> Satisfaction	.176	.181	.028	3.892	.000***	Adopted
Hypothesis 3	Safety -> Satisfaction	.637	.642	.040	15.324	.000***	Adopted

Hypothesis 4	Responsiveness -> Satisfaction	1.024	1.038	.039	24.675	.000***	Adopted
Hypothesis 5	Satisfaction -> Repurchse Intention	.914	.921	.032	28.896	.000***	Adopted
Fit Measures	CMIN(X2)=379.528(d.f=26, p=.00), RMR=.054, GFI=.934 AGFI=.913, PGFI=.704, NFI=.970, RFI=.963, IFI=.980, TLI=.985, CFI=.980, RMSEA=.039						

*** *p<.001*

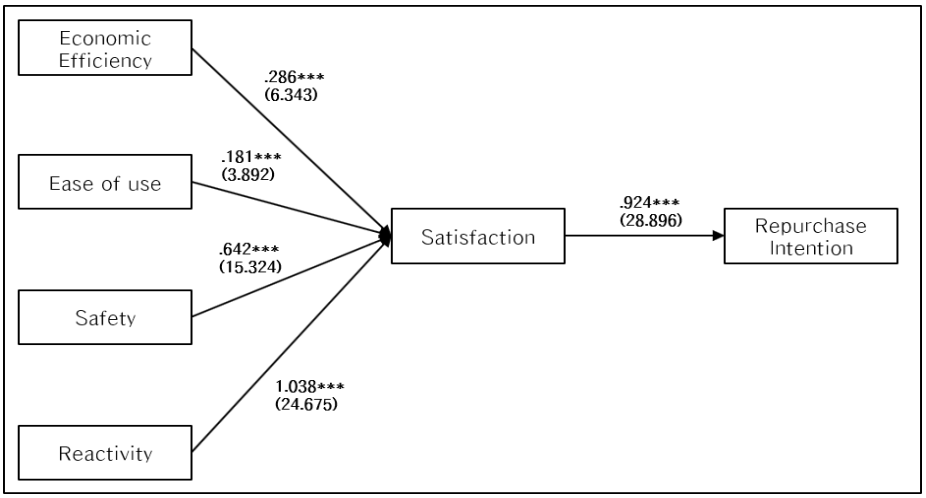

Fig. 3: Path coefficients of research model.

The results of the verification of the research hypothesis are as follows.

First, as a result of the verification of <Hypothesis 1> to find out how the economic feasibility of big data-based aviation service quality affects satisfaction, the standardization coefficient was .286 and the t value was 6.343 (p=.000), so <Hypothesis 1> was adopted. And, the route coefficient value was shown to have a positive value, which confirmed that satisfaction increased according to the economic efficiency of big data-based aviation service quality.

Second As a result of empirical analysis to find out how the ease of use of big data-based air service quality affects satisfaction, the standardization coefficient was .181 and t value 3.892 (p=.000), so <Hypothesis 2> was adopted. And, the route coefficient value was shown to have a positive (+) value, which confirmed that satisfaction increased according to the ease of use of big data-based aviation service quality.

Third, as a result of empirical analysis to find out how the safety of big data-based aviation service quality affects satisfaction, the standardization coefficient was .642 and the t value was 15.324 (p=.000), so <Hypothesis 3> was adopted. And, the route

coefficient value was positive, and the satisfaction level was increased according to the safety of the big data-based aviation service quality.

Fourth, as a result of empirical analysis to find out how the reactivity of big data-based aviation service quality affects satisfaction, the standardization coefficient was .1.038 and the t value was 15.324 (p=.000), so <Hypothesis 4> was adopted. And, the route coefficient value was shown to have a positive value, which confirmed that satisfaction increased according to the responsiveness of big data-based aviation service quality.

Fifth, as a result of empirical analysis to find out how satisfaction of big data-based aviation service quality affects re-use intention, the standardization coefficient was .924 and t value was 28.896 (p=.000), so <Hypothesis 5> was adopted. And, the route coefficient value was positive, and it was confirmed that the repurchase intention increased according to the satisfaction of the big data-based aviation service quality.

4.4.2. Verification of mediating effect

In this study, we set up a sample extraction of 5,000 times and a confidence interval of 95% to verify the mediating effect of satisfaction and bootstrapping was also conducted.

Table 10: Verification of research hypothesis

Path	Indirect Effect	Confidence Interval	
		LB	UB
1. Economic efficiency -> Satisfaction -> Repurchase Intention	.354***	0.254	0.473
2. Usability -> Satisfaction -> Repurchase Intention	.143**	0.205	0.072
3. Safety-> Satisfaction-> Repurchase Intention	.173**	0.077	0.287
4. Reactivity -> Satisfaction -> Repurchase Intention	.023**	0.046	0.005

**p<.05, **p<.01, ***p<.001*

As a result of analyzing the mediating effect of satisfaction in the relationship between economic efficiency and re-use intention of big data-based aviation service quality, the indirect effect was 0.354(p<.001), and the upper limit of the confidence interval and the lower limit did not include 0, which was statistically significant.

As a result of analyzing the mediating effect of satisfaction in the relationship between the ease of use and re-use intention of big data-based aviation service quality, the indirect effect was 0.143(p<.001), and the upper limit and the lower limit of the confidence interval did not include 0, which was statistically significant.

As a result of analyzing the mediating effect of satisfaction in the relationship between safety and repurchase intention of big data-based aviation service quality, the indirect effect was 0.173($p<.001$), and the range of upper and lower limits of the confidence interval did not include 0, which was statistically significant.

As a result of analyzing the mediating effect of satisfaction in the relationship between the responsiveness and re-use intention of the big data-based aviation service quality, the indirect effect was 0.023 ($p<.001$), and the upper limit and the lower limit of the confidence interval were not included 0, which was statistically significant.

Therefore, satisfaction has a mediating effect on the relationship between big data-based aviation service qualities and re-uses intention.

5. Conclusions

This study aims to empirically analyze the effects of quality of big data-based aviation service on satisfaction and reuse of users who have received big data-based aviation service from domestic airports and airlines. In this study, the mediating effects of service quality (economic efficiency, usability, safety, and responsiveness), satisfaction as a parameter, and repurchase intention as a dependent variable were examined.

The results of hypothesis 1 showed that the economic efficiency of service quality had a positive effect on satisfaction, and the verification of hypothesis 2 showed that the ease of use of service quality had a positive effect on satisfaction. The result of the verification of hypothesis 3 showed that the safety of service quality had a positive effect on satisfaction, and the result of the verification of hypothesis 4 showed that the responsiveness of service quality had a positive effect on satisfaction. Also, the result of verification of hypothesis 5 showed that satisfaction had a positive effect on the repurchase intention. Therefore, hypothesis 1, hypothesis 2, hypothesis 3, hypothesis 4, and hypothesis 5 were all adopted. In addition, as a result of verifying the mediating effect of satisfaction in the relationship between service quality and repurchase intention, service satisfaction showed a mediating effect.

Based on the results of this study, the academic implications for raising satisfaction and increasing re-use intention through big data-based aviation service quality are as follows.

First, it is academically significant that the integrated model, which explains the positive impact relationship through the medium of service quality and satisfaction in big data-based aviation services, is presented. Previous studies on the service quality of aviation service are mainly limited to the physical environment or human environment of the aircraft in-flight service, but this study has a great implication in that it expanded the scope of airport and airline services based on big data from the future-oriented perspective.

Second, this study has academic significance in that practical research was conducted on users using big data-based aviation services. Many previous studies

related to quality of aviation service were mainly conducted in terms of service function, management, and service providers for the purpose of improving aviation service quality. In this context, this study has academic significance in that it has been conducted in real and realistic research targeting users who directly use big data-based aviation services.

In addition to the above academic implications, this study has the following practical implications.

First, the quality of big data-based aviation service ―economic efficiency, ease of use, safety and responsiveness― had a positive effect on satisfaction. Therefore, in order to increase users' satisfaction with airline service through big data-based aviation services, airports and airlines need to develop services that can cope with the economic efficiency, ease of use, safety of personal information security and service needs of users when providing big data-based aviation services.

Second, service satisfaction perceived by big data-based airline service users has a great influence on repurchase intention. Therefore, airports and airlines that provide services should take the strategy of raising satisfaction to increase the degree of repurchase intention. And as shown in the results of the mediating effect analysis, satisfaction suggests that the service provision of airports or airlines should be considered more than any other service factors such as economic efficiency, efficiency, and stability.

Despite these implications, this study proposes a follow-up study based on the limitations of the process of performing this study. In this study, the indicators were constructed for the users who experienced big data-based services provided by domestic airports and airlines. As a result, it is somewhat limited to compare big data-based services of overseas airports and overseas airlines.

Therefore, if comparative studies including the users who received the services of overseas airports or overseas airlines are conducted in future studies, it will be helpful to suggest the direction of more actual and greater satisfaction.

References

An, S. –S. (2018). The effect of service authenticity on customer satisfaction and word-of-mouth and reuse intentions: Focused on airline services. *Journal of the Aviation Management Society of Korea*, 16(1), 91-105. UCI: I410-ECN-0102-2018-300-004207421.

Anderson & Narus (1984). A model of the distributor's perspective of distributor-manufacturer working relationships. *Journal of Marketing*, 48(3), 62-74. DOI: https://doi.org/10.1177/002224298404800407.

Bitner, M. J. (1990). Evaluating service encounters: The effects of physical surroundings and employee responses. *Journal of Marketing*, 54, 69-82. DOI: https://doi.org/10.1177/002224299005400206.

Cho, Y. –H., Chang, D. –S., & Chae, G. –J. (2012). A study on casual model of service quality, service value, customer satisfaction and loyalty of airlines in Korea. *Journal of the Korea Service Management Society*, 13(2), 1-23. DOI: http://dx.doi.org/10.15706/jksms.2012.13.2.001001.

Choi, J. –J. (2012). A study on the relationship among perceived risk, service quality, customer satisfaction and repurchase intention of low cost carriers. *Master Thesis, Sejong University*.

Chon, (1990). Consumer satisfaction and disatisfaction in tourism as related to destination image perception, 23.

Day. (1984). Modeling choices among alternative responses to dissatisfaction. *Advances in Consumer Research*, 11, 496-499.

Dodds, W. B. & Monroe, K. B. (1985). The effect of brand and price information on subjective product evaluations. *Advances in Consumer Research*, 12, 85-90.

Engel & Blackwel. (1982). Consumer behavior. *4th ed, Chicago The Dryden Press*, 307.

Grönroos, C. (1984). A service quality model and its marketing implication, *European Journal of Marketing*, 18(4), 36-44. DOI: https://doi.org/10.1108/EUM0000000004784.

Grönroos, C. (1988). Service quality: The six criteria of good perceived service quality. *Review of Business*, 9, 10-33.

Ham, Y. –G. & Chae, S. –B. (2012). Big data, changing management. Samsung Economic Research Institute, 36.

Howard & Sheth (1969). The theory of buyer behavior. *John Wiley & Son*.

Jee, Y. –S. (1995). A study on consumer's decision process of airline service. Ph.D Thesis, Dongguk University.

Jeun, H. –O. (2017). A study on determinants of innovation performance in service industry. Ph.D Thesis, Daejeon University.

Jung, M. & Oh, B. –J. (2017). Corporate awareness and implications for the fourth industrial revolution: About 70% of domestic companies are not responding. *Hyundai Research Institute, VIP Report*, 691, 1-15.

Ju, S. W. (2022). A study on relationship of influence among big data-based aviation service quality, satisfaction and reuse intention. *International Journal of Smart Business and Technology, Global Vision Press, ISSN: 2288-8969 (Print); 2207-516X (Online)*, 10(1).

Kang, H. –S. & Cho, S. –H. (2012). The effect of international airline service quality attributes on customer attitude, loyalty, and reuse intention. *Journal of Tourism & Leisure Research*, 24(3), 185-204. ISSN 1229-0424.

Kang, N. –U. (2009). A study on the service quality and the customer satisfaction in the beauty industry: based on the job satisfaction of a worker. Master Thesis, Hanyang University.

Kim, J. –S. (2013). A study on the use of big data and analysis techniques. *Master Thesis, Korea University*, 2-3.

Kim, S. –H. & Sun, J. –G. (2006). Relationship between service quality and relationship quality in the convention industry. *Journal of Hotel & Resort*, 5(1), 75-91. UCI: I410-ECN-0102-2009-320-000901932.

Kotler, P. & Keler, K. L. (2006). Marketing management. *12ed ed, Englewod Clifs. NJ: Prentice Hall*.

Kwon, I. –J. (2013). A study on the effect of travel industry's e-service quality on tourist satisfaction, word of mouth and the reuse of travel agencies: Focusing on the travel agency brand. *Master Thesis, Kyonggi University*.

Lee, B. –H. & Jeon, I. –O. (2012). Effect of service quality on corporate performance, customer satisfaction and intention: Focus on outsourcing of exhibition/convention industry. *Journal of the Korean Contents Association*, 12(1) 275-298. DOI: https://doi.org/10.5392/JKCA.2012.12.01.275.

Lee, E. –M. (2016). The fourth industrial revolution and changes in industrial structure. *Information and Communication Policy*, 28(15), 1-22, E-ISSN 1229-5981.

Lee, J. –Y. & Kim, S. –P. (2007). The effect of customers` reliability for airline service quality on customers` satisfaction and repurchase intention: Focus on Asian club members. *Korean Society of Aviation Management Spring Conference*, 103-113.

Lee, J. –P., Lee, H. –S., & Sin, M. -J. (2007). Effect of menu quality offered by 5-star hotel buffet restaurant on customer's revisit. *Journal of Hospitality and Tourism Studies*, 9(3), 79-93.

Lee, J. –S. (2012). The effect of sensory experience on emotion, brand attitude and behavioral intention. *Tourism & Leisure Research*, 24(5), 139-158.

Lee, K. –E. (2018). A study on the improvement of audit efficiency using big data. *M.S thesis, Korea University*, 17.

Lee, M. –J. (2012). Big data analytics and utilization of public data. *Communications of the Korean Institute of Information Scientists and Engineer*, 30(6), 33-39, E-ISSN 1229-6821.

Lee, M. –J. & Kim, J. –M. (2013). The influence on customer satisfaction and repurchase intention of domestic LCC's selection factors. *Korean Journal of Hotel Administration*, 22(2), 187-207.

Lee, -S. & Jang, H. –S. (2018). The impact of core technologies of the fourth industrial revolution on airline profitability. *Korean Society of Aviation Management Spring Conference*, 25-28.

Lee, S. –H. (2004). Introduction to travel business management. 2nd edition, DaeWang-Sa, 439.

Lee, S. –H. (2011). E-servqual, satisfaction and purchase intention of low-priced airline: Centering on moderating effect of WOM. *Master Thesis, Kyonggi University.*

Lee, S. -H. (2015). Effect of Travel application e-service quality on user satisfaction and continuous usage intention. *Master Thesis, Kyonggi University*.

Lee, W. –J. & Jeon, E. –A. (2016). The role of top management team: Aviation service industry competitiveness. *Journal of the Aviation Management Society of Korea*, 14(2), 47-73. ISSN 1229-0424.

Lim, -I. L. (2016). insights on the fourth industrial revolution. *The Maker*, 56-95.

Liu, Y. D., Taylor, P., & Shibli, S. (2009). Measuring customer service quality of english public sport facilities. *International Journal of Sport Management and Marketing*, 6(3), 229-252. eISSN: 1740-2808.

McCarthy. (2010). Morality and compromise in politics. *Thought*, 37(2), 167-172.

McKinsey, J. (2011). Big data: The next frontier for innovation, competition, and productivity. *Hoboken, McKinsey & Co.*, 5.

Moon, S. –H. (2002). A study on the models for the measurement of service quality in the convention industry. *The Journal of Establishment Information*, 5(2), 163-191. UCI: I410-ECN-0102-2009-320-004353752.

National Information Society Agency (2013). Big data era that opens a new future, 1.

Oliver, R. L. (1981). Measurement and evaluation of satisfaction process in retail setting. *Journal of Retailing*, 57(3), 25-48.

Parasuraman, A., Zeithaml. V. A., & Berry, L. L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. *Journal of Retailing*, 64(1), 12-37.

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1994). Moving forward in service quality research: Measuring different levels of customer expectations, comparing

alternative scales, and examining the performance-behavioral intention link. *Marketing Science Institute Working Paper*, 94-114.

Park, B. –G., Woo, S. –B., & Joo, H. –S. (2003). Economic impact of a convention industry in Busan: The 2002 Busan international machine tool show. *Journal of Tourism & Leisure Research*, 15(1), 31-46. UCI: I410-ECN-0102-2009-320-003702293.

Park, D. –K. (2005). A study on the airline customers in relationship with ground service quality, satisfaction, and intention of reusing. *Journal of Hotel & Resort*, 4(1), 229-242.

Park, I. –J. & Choi, H. –K. (2010). A study on the effects of aircraft cabin service on the customer satisfaction and repurchasing intention. *Korean Review of Corporation Management*, 1(1), 61-81. E-ISSN 2713-7635.

Park, J. –H. (2008). The importance-satisfaction of hotel convention selection attributes and the effects of satisfaction on revisit intention. *Ph.D Thesis, Sejong University*.

Park, J. –H. (2011). Empirical study on the influence of low cost carriers service quality on customer satisfaction, switching barriers and customer loyalty. *Korean Business Education Review*, 26(1), 255-275. E-ISSN 2714-027X.

Park, J. –K. (2014). A study on measures to active cultural contents service in big data age. *Journal of the Korean Society of Design Culture*, 20(1), 323-334, UCI: I410-ECN-0102-2014-600-002023820.

Park, J. –W. A study on the effect of wine service quality on service value and customer satisfaction. *Master Thesis, Kyunghee University*.

Park, M. –H. & Cho, H. –C. (2000). Reconceptualization and scale development of customer satisfaction. *Korea Marketing Review*, 15(3), 93-122. UCI: I410-ECN-0102-2009-320-005666387.

Park, Y. –J. (2010). Recommender systems for 1-to-1 marketing of tail products: application to movie rating prediction. *Journal of Product Research*, 28(2), 133-141. DOI: http://dx.doi.org/10.36345/kacst.2010.28.2.011.

Rathmell & John M. (1966). What is meant by services?. *The Journal of Marketing*, 30(4), 32-36.

Seo, R. –J. (2017). EA study on the relation between net income & loss and cash flows from operating activities *Journal of Finance and Accounting Information*, 17(3), 75-96. DOI:10.29189/KAIAJFAI.17.3.4.

Song, T. –M., Song, J. –Y., & Jin, D. –L. (2014). Risk prediction of internet addiction disorder by using social big data. *Health and Social Research*, 34(3), 106-134. DOI:10.15709/HSWR.2014.34.3.106.

Seo, I. –J. (2014). Influences service quality of foreign airlines has on customer satisfaction and loyalty. *Journal of Consumer Policy Studies*, 45(2), 97-115. DOI: http://dx.doi.org/10.15723/jcps.45.2.201408.97.

Rust, R. T. & Oliver, R. W. The death of advertising *Journal of Advertising*, 23(4), 71-77. DOI: https://doi.org/10.1080/00913367.1943.10673460.

Sam, M. F. M. & Tahir, M. N. H. (2010). Website quality and consumer online purchase intention of air ticket. *International Journal of Basic & Applied Science*, 9, 20-25. SSRN: https://ssrn.com/abstract=2255286.

Sven, I. B. (2005). Flexibility in industrial service relationships: The construct, antecedents, and performance outcomes. *Industrial Marketing Management*, 34(6), 566-576. DOI: https://doi.org/10.1016/j.indmarman.2004.10.007.

Tse & Wilton. (1988). Models of consumer satisfaction formation: An extension. *Journal of Marketing Research*, 204-212. DOI: https://doi.org/10.1177/002224378802500209.

Wsetbrok & Reily. (1983). Value-percept disparity: An alternative to the disconfirmation of expectations theory of consumer satisfaction. *Advances in Consumer Research*, 10, 256-261.

Yang, S. –K. (2016). Research on the impacts of the service quality of mobile music applications on customer satisfaction. Ph.D Thesis, Kyunggi University.

Yi, Y. –J. (1998). Consumer sovereignty in the 21st century: Customer satisfaction management to increase customer value. *Conference of the Korean Society of Consumer Studies*, 57-68.

Zeithaml, V. A. & Bitner, M. J. (2003). Service marketing: integrating customer focus across the firm (3rd ed.), New York: McGraw Hill.