

# ANTECEDENTS AND CONSEQUENCES OF PASSENGER SATISFACTION WITH THE AIRPORT

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# ANTECEDENTS AND CONSEQUENCES OF PASSENGER SATISFACTION WITH THE AIRPORT

## ABSTRACT:

There is a growing interest in the passenger experience at the airport. Particularly, the relevance of passenger satisfaction has been emphasized. However, although different research approaches have been used, there is still a gap related to understanding the several relationships between aspects associated with passenger satisfaction with the airport. In this study, a comprehensive conceptual model, which includes the relationships between key antecedents and consequences of passenger satisfaction, was developed and examined. Using structural equation modeling analysis, several findings concerning passenger expectations, airport service quality, switching costs for changing airports, and passenger loyalty towards the airport are stressed.

Keywords: Airports; Passenger Satisfaction; Passenger Attitudes, Multi-Airport Region.

## 1. INTRODUCTION

The airport industry has undergone major changes over recent decades. During this period, we have been witnessing a paradigm shift from seeing airports solely as huge public facilities towards the concept of multi-services business organizations. As a result, airport executives have become more concerned with their businesses performance, as well as understanding passenger experience at the airport, which has become crucial for airport management.

According to the literature, a positive experience at the airport can influence passenger's intentions to purchase in commercial areas (Chung, 2015; Lin and Chen, 2013; Lu, 2014; Sohn and Lee, 2017), increase their reuse intention (Al-Refaie et al., 2014; Nettet and Helgesen, 2014), induce positive word-of-mouth (Nettet and Helgesen, 2014; Wattanacharoensil et al., 2016), and can be a driver of airport competitiveness (Graham, 2014; Parrela, 2013; Wattanacharoensil et al., 2017). However, despite its relevance for airport management, literature on passenger experience is scarce and tends to emphasize a commercial and business viewpoint, instead of a passenger-based perspective (Wattanacharoensil et al., 2016). As such, more research on the passenger-airport interaction and their behavioural attitudes towards the airport is needed in order to support airport planning and operating management efforts.

In this context, the concept of customer satisfaction, their antecedents and consequences, are key elements for examining the passenger experience in the airport context. Customer satisfaction reflects a post-consumption evaluative judgment concerning a product, service, or firm (Falk et al., 2010; Oliver, 2015;

Wilson et al., 2012). Antecedents are those elements expected to influence the level of satisfaction, while consequences are the expected effects of the level of satisfaction.

Customer satisfaction has long been a central issue in the Services literature, but has not been fully explored in the airport industry. Regarding airports, passenger satisfaction has been associated to their perceptions of service quality and servicescape, their emotions, their demographic characteristics, and their loyalty (Bezerra and Gomes, 2015; Fodness and Murray, 2007; Moon et al., 2016; Wattanacharoensil et al., 2016). Several research models have been used, but only a few studies were based on a comprehensive approach to the relationships between the antecedents and consequences of passenger satisfaction in the airport context. Particularly, the effects of passenger perceptions and behavioral attitudes in multi-airport regions seem to be under-researched. This paper is aimed at helping to fill these gaps, by developing and testing a comprehensive and reliable model of the relationships associated with the passenger experience and analyzing their perceptions and attitudes in the context of a multi-airport region, which provides a passenger-perspective of the competitive dynamics in the airport industry.

Bearing these considerations in mind, satisfaction is taken as the central element of the passenger experience at the airport and the research effort is focused on identifying and estimating the relationships between the antecedents and consequences of the passenger satisfaction with the airport. Hence, three objectives were followed:

- i. To examine the effects of typical antecedents of the passenger satisfaction with the airport;
- ii. To examine the effects of satisfaction on the passenger complaint attitude and loyalty towards an airport;
- iii. To examine the effects of switching costs for changing airports on the passenger loyalty.

To accomplish these objectives, a survey was applied to departing passengers in one of the main Brazilian airports located in a multi-airport region. Grounded on extensive review of the literature and accounting for specific features of the airport services, a theoretical model of the antecedents and consequences of

passenger satisfaction was developed and used to test several research hypotheses. Data analysis was based on Structural Equation Modeling (SEM), namely the covariance-based approach (CB-SEM). The reason for CB-SEM in this paper is twofold. First, this method has been traditionally used in several service sectors for years and sample size was adequate in view of the method requirements. Second, this study tested several relationships well-grounded in the theory but some of those for the first time used in the airport sector, thus CB-SEM is appropriate for a confirmatory approach (Hair et al., 2017).

In the next section, a background on customer satisfaction and the current state-of-the-art of the research related to passenger satisfaction in the airport context is provided. In section 3, the conceptual model and hypotheses are explained. In section 4, the research methods are described. Results are presented and discussed in section 5. Finally, a conclusion section stresses the main findings and contributions in light of the existing literature and discusses opportunities for future research.

## **2. BACKGROUND**

### **2.1. CUSTOMER SATISFACTION**

Customer satisfaction is defined as a post-consumption evaluative judgment concerning a product, service, or firm (Falk et al., 2010; Oliver, 2015; Wilson et al., 2012). Despite the debate on the nuances of this evaluative judgment process, two concepts are recognized to play a major role in it, namely the perceived performance and the expectancy-disconfirmation (Cronin and Taylor, 1994; Oliver, 2015, 1980; Yuksel and Yuksel, 2001). Accordingly, it is assumed that customer's perception of a high service performance is likely to improve their satisfaction. However, satisfaction is also dependent on the customer pre-purchase expectations regarding the service experience. Moreover, a high level of satisfaction has been considered a key determinant of the customer behavioural attitudes towards the product, service, or firm (Baumann et al., 2017; Bock et al., 2016; Koklic et al., 2017).

The interaction between theory building and testing of hypothesized relationships resulted in the development of customer satisfaction models over time (Morgeson, 2012). Regarding empirical research

and practical purposes, a main concern has been the need for operationalizing the constructs associated with customer satisfaction and their behavioral attitudes (Hill and Alexander, 2006). In this context, the development of more comprehensive models of antecedents and consequences of customer satisfaction appeared as response to the increasing interest in this subject. The utilization of these models has also been justified by the interest in predicting customer satisfaction and understanding how satisfaction determine customer behavioral attitudes towards the product/service/firm (Fornell et al., 2008, 1996; Grigoroudis et al., 2008; Johnson et al., 2001).

Initially, customer satisfaction models focused on customer expectations and perceived performance as antecedents of satisfaction (Oliver, 2015; Zeithaml et al., 1990). Afterwards, other critical issues for business organizations, such as complaints, word-of-mouth, and repurchase intention were emphasized as consequences of satisfaction (Lovelock and Wirtz, 2007; Ndungu and Kibera, 2014; Oliver, 2015; Woodruff and Gardial, 1996; Yi, 1990).

According to Johnson et al. (2001), the development of the national customer satisfaction index models, such as the Swedish (Fornell, 1992), the American (Fornell et al., 1996), and the Norwegian (Andreassen and Lindestad, 1998), has given to customer satisfaction global significance. Following this trend, from the 1990's on, national satisfaction models had also been used in several other countries (Anderson and Fornell, 2000; Grigoroudis et al., 2008; Morgeson, 2012). Based on the theoretical background of customer satisfaction, these models assume satisfaction as an overall evaluation of the consumption experience and examine simultaneously the effects of satisfaction on the post-consumption attitudes. As such, customer satisfaction is the central construct of the consumption experience, being dependent on the customer expectations and perceptions, and influencing their behavioral attitudes towards the service/product/firm.

In this study, we grounded on the rationale of the national customer satisfaction models, as a basis for examining typical relationships between passenger satisfaction, their antecedents and consequences.

## **2.2. PASSENGER SATISFACTION IN THE AIRPORT CONTEXT**

Until the 1980s, airports usually adopted a passive approach to customer services (Halpern and Graham, 2013). However, following the changes in air transport industry, the interest in passenger satisfaction has substantially increased (Bogicevic et al., 2013; Moon et al., 2017). In this context, the airport-related literature emphasized several relationships between passenger satisfaction and other relevant aspects of the passenger experience at the airport, for instance:

- The diverse aspects of the service that can influence passenger satisfaction (Bogicevic et al., 2013; Correia et al., 2008; Eboli and Mazzulla, 2009; Yeh and Kuo, 2003);
- The nature of the relationships between demographic and flight characteristics with the level of satisfaction and fairness perceptions (Güres et al., 2009; Sindhav et al., 2006);
- The passenger satisfaction concerning the security screening process as dependent on the process performance and passenger characteristics (Gkritza et al., 2006; Sakano et al., 2016);
- The effects of service quality dimensions on passenger's satisfaction moderated by passenger characteristics (Bezerra and Gomes, 2015; Pantouvakis and Renzi, 2016);
- The relationship between servicescape and passenger satisfaction (Bogicevic et al., 2016; Jen et al., 2013; Jeon and Kim, 2012);
- The influence of the airport physical environment on passenger satisfaction and delight, including the moderating role of national identity (Ali et al., 2016).

There are also more comprehensive approaches to passenger satisfaction. The relationships among social justice, service quality, satisfaction, and future complaint intentions were explored by Chang et al. (2008). Park and Jung (2011) examined passenger's perceptions of service quality and their influence on value, satisfaction, airport image, and passenger post-consumption behavior. Nettet and Helgesen (2014) used a cause-and-effect model to analyze the effects of different service quality and choice attributes on passenger satisfaction. Chen et al. (2015) examined the determinants of passenger satisfaction with the airport, the nature of the relationship between satisfaction and services value, and the moderating effect of service innovation to enhance value. Moon et al. (2016) investigated the relationships among the variables of

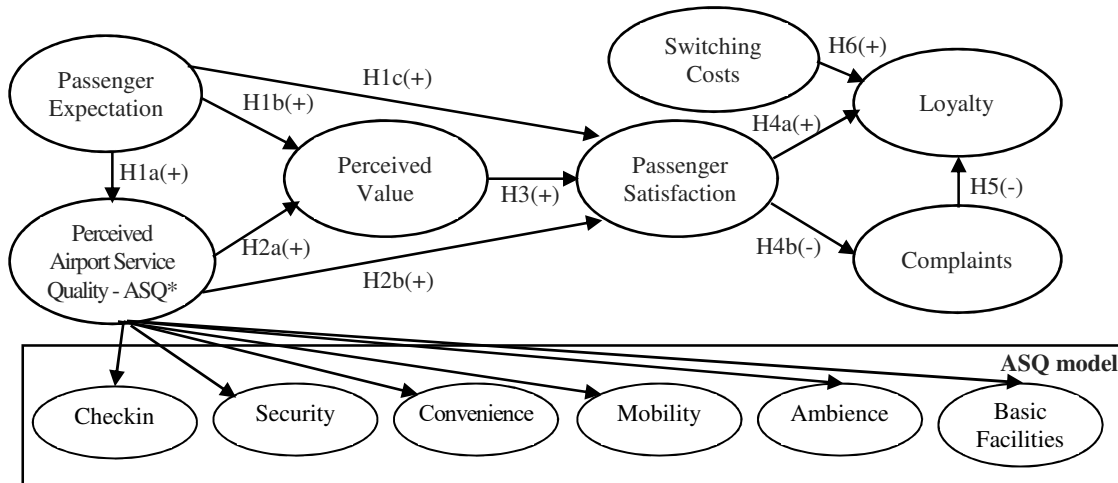
airport physical environment, customer emotions (pleasure and arousal), and satisfaction, including the mediating role of emotions between physical environment and satisfaction. In another study, Moon et al. (2017) extended their research to include the relationships among the physical environment, perception of airport safety, satisfaction, and behavioral intentions.

Based on the literature reviewed, the service quality-satisfaction relationship has been emphasized, with authors using different approaches to measure service quality, passenger satisfaction, and their behavioral attitudes. Overall, previous research is grounded on different theoretical models, but only a few investigations were based on a more comprehensive approach to the relationships among the various aspects related to the passenger satisfaction with the airport. Particularly, there is a gap of knowledge on the effects of passenger expectations on their perceptions of service quality, service value, and satisfaction in the airport context. Furthermore, how likely are satisfied passengers to remain loyal to an airport competing for catchment area is still under-researched.

### **3. CONCEPTUAL MODEL AND HYPOTHESIS**

In this paper, we examined the relationships between antecedents and consequences of customer satisfaction in the airport context. Some of these relationships have been largely used in several service settings, including the air transport industry (Akamavi et al., 2015; Calisir et al., 2016; Chen, 2008; Koklic et al., 2017; Rhoades and Waguespack Jr, 2008). However, we adopted a comprehensive approach, grounded on the rationale of the customer satisfaction models, and made changes in each construct operationalization to customize them to the airport environment (please see section 4.4). Moreover, according to the literature, understanding the effects of passenger satisfaction in multi-airport regions along with the passenger perceptions of the switching costs for changing airports is a relevant issue (Carlsson and Löfgren, 2006; Jen et al., 2011; Nettet and Helgesen, 2014; Yang and Peterson, 2004). Therefore, the construct switching costs was included to reflect the perceived economic and psychological costs associated with changing from one airport to another in a multi-airport region (Jones et al., 2007). The conceptual model is presented in Figure 1.

**Figure 1.** The conceptual model.



Note: \*Operationalized with the ASQ model proposed by Bezerra and Gomes (2016).

In this model, passenger expectation is assumed to capture the attributes/characteristics associated with the airport experience that are anticipated by the passengers (Oliver, 2015; Sweeney et al., 2012; Teas, 1993). The hypothesized relationships for passenger expectation comprise direct and positive effects on ASQ, perceived value, and satisfaction.

The perceived ASQ is a critical element for satisfaction. While a psychological phenomenon, satisfaction is a function of the customer experience with the service performance (Anderson and Fornell, 2000; Falk et al., 2010; Oliver, 2015; Sureshchander et al., 2002). As such, a positive direct effect of ASQ on passenger satisfaction is expected. In addition, ASQ is expected to positively influence the perception of value (Johnson. et al., 2001).

The perception of value is defined as the trade-off between perceived benefits and perceived costs related to the airport service (Anderson and Fornell, 2000; Johnson et al., 2001; Zauner et al., 2015). Therefore, it is expected that a higher perceived value positively influence passenger satisfaction.

Passenger satisfaction is the central construct in the model, mediating pre-purchase and post-purchase attitudes. It is expected to have a positive effect on loyalty and a negative effect on the passenger attitude of complaining (Anderson and Fornell, 2000; Anderson et al., 2008; Bodet, 2008; Oliver, 1999).

There is also a predicted relationship from complaints to loyalty. In this study, a wide approach to the



complaint attitude is considered and the focus was placed on the passenger declared intentions (Homburg and Fürst, 2005; Knox and Van Oest, 2014). The effect of complaints is expected to be negative (Deng et al., 2013; Knox and Van Oest, 2014; Shen et al., 2016).

Finally, there is the hypothesis of a positive effect of switching costs on loyalty. Previous studies stressed customer perception on the existence of switching costs as a determinant of loyalty (Jen et al., 2011; Jones et al., 2007, 2000; Nettet and Helgesen, 2014; Yang and Peterson, 2004). Furthermore, regarding airports, substitutability includes examining the available alternatives and the viability of passengers effectively to switch to those alternatives (Carlsson and Löfgren, 2006; Cho et al., 2015; Johnson et al., 2014; Maertens, 2012; Murça and Correia, 2013). Therefore, a positive direct effect of switching costs on loyalty is expected.

The research hypotheses are summarized in table 1.

**Table 1.** The research hypotheses

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<i>H1a:</i>	Passenger expectation positively affects perceived ASQ.
<i>H1b:</i>	Passenger expectation positively affects perceived value.
<i>H1c:</i>	Passenger expectation positively affects passenger satisfaction.
<i>H2a:</i>	Perceived ASQ positively affects perceived value.
<i>H2b:</i>	Perceived ASQ positively affects passenger satisfaction.
<i>H3:</i>	Perceived value positively affects passenger satisfaction.
<i>H4a:</i>	Passenger satisfaction positively affects passenger loyalty.
<i>H4b:</i>	Passenger satisfaction negatively affects passenger attitude of complaining.
<i>H5:</i>	Passenger attitude of complaining negatively affects passenger loyalty.
<i>H6:</i>	Perception of switching costs positively affects passenger loyalty.

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## 4. METHODS

### 4.1. RESEARCH INSTRUMENT

The measurement items included in the questionnaire were selected based on extensive literature review. They will be explained, along with the construct operationalization procedures, in the section 4.4. For the ASQ construct, a performance rating scale was used, which ranges from 1 – Very poor to 7 – Very good, with a central point in 4 – Regular. For the remaining constructs, a Likert seven-point scale was used, which ranges from 1 – strongly disagree to 7 – strongly agree, with a central point in 4 – neither agree or disagree.

Preparatory content validation procedures comprised two phases: (i) consultation with experts and (ii) on-line trial survey. Regarding the consultation, a group of ten experts, including researchers, airport

professionals, and Brazilian Government personnel, was interviewed for content validation. The contributions supported face validity, the need for minor item wording revision, and minor modifications to the questionnaire layout. As for the on-line trial survey, the target population was people that had used any of the Brazilian airports for a departing flight in the last three months. In addition to the questionnaire scale-type questions, the respondents were asked to make comments on the item readability and provide suggestions. A sample consisting of 39 respondents was obtained, and their contributions related to item wording were included.

#### **4.2. DATA COLLECTION AND SAMPLE**

A survey was applied to departing passengers at Congonhas Airport (SBSP), in Brazil. This airport is located in a multi-airport region that serves a population of more than 20 million people, covering the city of São Paulo. The passengers were approached at the departure lounges to assure that they have had the opportunity to experience the full range of services, processes, and facilities.

Regarding sampling criteria, it was probability systematic. Initiating from the passenger closer to a given departure gate, every 5th passenger was invited to participate in the study by fulfilling the questionnaire. In the cases of a transferring passenger or refused invitation, the survey team chose the neighbour passenger. The average time to complete the questionnaire was under 10 minutes, which is a good indicative of the suitability of the preparatory validation procedures carried out.

As a result, 503 responses were obtained. However, 21 responses fulfilled by transfer passengers<sup>1</sup>, and 39 responses presenting more than 10% of missing data were excluded. As the remaining 443 responses presented no pattern for missing values, these missing values were replaced by the series mean (Hair et al., 2018; Kline, 2011). The final sample size is adequate to the data analysis procedures covered by the SEM method use (Byrne, 2010). Table 2 shows the sample characteristics.

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<sup>1</sup> Transferring passengers might not have been in contact with all the airport services/facilities (De Barros *et al.*, 2007; Park and Jung, 2011).

**Table 2. Sample characteristics.**

<b>Characteristic</b>		<b>Distribution</b>	
Living in the city of São Paulo		Freq.	%
Yes		142	32.0
No		298	67.3
Non-response		3	0.7
Total		443	100.0
Gender		Freq.	%
Male		299	67.5
Female		142	32.1
Non-response		2	0.5
Total		443	100.0
Travel frequency (last 12 months)		Freq.	%
0 to 2 trips		65	14.7
3 to 5 trips		109	24.6
> 5 trips		266	60.0
Non-response		3	0.7
Total		443	100.0
Trip purpose		Freq.	%
Non-business (Includes leisure and other purposes)		149	33.6
Business		289	65.2
Non-response		5	1.1
Total		443	100.0
Antecedence of arrival at the airport		Freq.	%
Less than 1 hour		165	37.3
Equal or more than 1 hour to 2 hours		225	50.8
More than 2 hours		50	11.3
Non-response		3	0.7
Total		443	100.0
Number of departures from the airport in the last 12 months		Freq.	%
First time		56	12.6
2 to 3 times		116	26.2
3 to 5 times		77	17.4
More than 5 times		191	43.1
Non-response		3	0.7
Total		443	100.0

The sample presents a high percentage of business passengers, which actually represents the population of passengers at this airport (Ueda, 2012). This passenger characteristic might also be related with the high travel frequency (60% with more than 5 trips), and the number of departures from the airport (43.1% with more than 5 departures). Additionally, it is noteworthy the majority of male passengers (67.5%) and people that do not live in São Paulo city (67.3%).

Assessment of univariate normality suggested no significant deviation (Appendix A). Concerning multivariate normality, the squared Mahalanobis distance ( $D^2$ ) was used for outlier identification. The relative magnitude based on the degrees of freedom ( $D^2/df$ ) suggested no significant concerns (Hair et al., 2014).

### **4.3. DATA ANALYSIS AND CONSTRUCT OPERATIONALIZATION**

The model was estimated using structural equation modeling (SEM), which is particularly suitable for testing multiple relationships. Based on the two-step approach, the relationships between the constructs (i.e. the structural model) were only estimated after the constructs have met the required measurement standards (Anderson and Gerbing, 1988; Byrne, 2010; Hair et al., 2018; Kline, 2011). For model estimation, the covariance matrix and the maximum likelihood estimation (MLE) method were used (Byrne, 2010; Hair et al., 2018; Iacobucci, 2010; Kline, 2011). The software IBM AMOS, version 22 was used for data analysis.

Construct operationalization, explained below, was based on a reflective approach (Coltman et al., 2008; Edwards and Bagozzi, 2000). The measurement items are presented in Appendix A.

#### **Passenger Expectation**

The construct expectation comprise attributes/characteristics associated with the airport experience, that are anticipated by the passengers (Oliver, 2015). The expectation construct is operationalized using three typical measures from the national customer satisfaction models: i) overall expectation, ii) level of expected customization, iii) expected service reliability (Anderson and Fornell, 2000; Deng et al., 2013; Fornell et al., 2008). In addition, two more items specially related to the airport context were included: iv) expectation about the quickness and efficiency of the service provision, and v) expectation about feeling comfortable and safe at the airport. These specific items are representative of the typical passenger expectations regarding the airport, comprising the service reliability and an acceptable level of comfort (Bogicevic et al., 2013; Caves and Pickard, 2001; Popovic et al., 2010).

#### **Perceived Value**

The usual approach to service value is based on a trade-off between the benefits and the sacrifices (what is given) in a market exchange (Chen, 2013; Prebensen et al., 2013; Sweeney and Soutar, 2001; Zauner et al., 2015; Zeithaml, 1988). Accordingly, this construct is usually operationalized with a rating of the price paid for the quality received and a rating of the quality received for the price paid (Fornell et al., 2008). Accounting for the increasing relevance of the non-aeronautical revenues, this trade-off perspective was

adapted to the airport services environment. The literature suggests that passengers can distinct the required activities associated with the air travel from the convenience/leisure alternatives (Bezerra and Gomes, 2015; George et al., 2013). Moreover, while the utilization of the airport facilities is covered by the airport fees, restaurants and stores are usually free for pricing their offerings as convenience products/services (Gillen and Mantin, 2014). As such, in this study, perceived value was operationalized with five items intended to reflect both the airport facilities and the convenience services.

### **Perceived ASQ**

The airport service environment presents high complexity, and some particularities of the passenger-airport interaction are not adequately covered by generic service quality scales (Caro and García, 2008; Fodness and Murray, 2007; George et al., 2013; Pantouvakis, 2010). In this context, ASQ is operationalized using a second-order construct reflected in the service quality dimensions as proposed by Bezerra and Gomes (2016), which relates to the airport service and facilities as perceived by the passengers. The items reflecting this construct are aligned to industry best practice guidelines (ACI, 2017; IATA, 2015; Kramer et al., 2013) and are similar to previous research (Correia et al., 2008; Medeiros et al., 2016; Park and Jung, 2011; Yeh and Kuo, 2003).

### **Passenger Satisfaction**

Passenger satisfaction is reflected in different aspects related to their experience at the passenger. The three measurement items from the American Customer Satisfaction Index (ACSI) model were used: i) overall rating of satisfaction; ii) degree to which the perceived performance exceeds the expectations; and iii) rating performance relative to the customer's ideal service (CFI Group, 2013; Hsu, 2008). Looking for a broader approach to passenger satisfaction, two more items were included. The first one relates to the feeling of making a good choice in choosing the airport (Bodet, 2008; Parasuraman et al., 1988). The second item represents the passenger perception about their overall experience with the service encounter (Bogicevic et al., 2013; Van Oel and Van den Berkhof, 2013; Wattanacharoensil et al., 2016).

### **Complaints**

The complaint attitude is associated with the idea that customer expectations have not been met, and might be related to some service failure (Lovelock and Wirtz, 2007). In this study, a broad approach to the complaint attitude is considered. Since passengers usually do not voice their dissatisfaction, construct operationalization comprised their declared intentions (Homburg and Fürst, 2005; Knox and Van Oest, 2014). Five measurement items were used. The first item is the indication of have formally complained to the airport (Fornell et al., 2008). Three other items are related to passenger attitude to complain, which is consistent with the idea that customers may not formalize their dissatisfaction (Chang et al., 2008). The fifth item relates to the perception about how the complaints are solved by the airport (Davidow, 2003; Johnson et al., 2001; Knox and Van Oest, 2014).

### **Loyalty**

The two main components in the loyalty construct are the psychological attachment and behavioral consistency (Bobâlca et al., 2012; Bodet, 2008; Hill and Alexander, 2006; Bauman et al., 2017). The former is associated with cognitive, affective, and conative elements, while the latter is related to customer actions, such as repurchase. As such, three typical items intended to reflect passenger's declared repurchase intention, and their tolerance to increase in the prices were used (Anderson and Fornell, 2000; Fornell et al., 2008). Assuming that passengers differentiate airport fees and flight fares in their decision-making process as regards airport choice (Nesset and Helgesen, 2014; Polk and Bilotkach, 2013; Tam and Lam, 2005; Yang et al., 2014), the measurement items reflect their tolerance to increase in both the airport fees and flight fares. The two other items are: i) a positive word-of-mouth (Mason, 2008; Nesset and Helgesen, 2014; Sweeney et al., 2012); and ii) a long-term perspective as regards passenger preference in the particular multi-airport region (Akamavi et al., 2015).

### **Switching Costs**

In a competitive environment, loyalty means that a customer believes that the firm continues to offer the best choice alternative (Oliver, 1999). Regarding airports, the factors that would lead to passenger loyalty may not be so evident. The problem of airport choice has usually been associated with the air tickets offer

and other aspects, such as access and convenience (Cho et al., 2015; Postorino and Praticò, 2012; Yang et al., 2014). Analysis of substitutability should account for the available alternatives (for both airlines and passengers) and the viability of switching to those alternatives (Adler and Liebert, 2014; Merkert and Mangia, 2014; Polk and Bilotkach, 2013; Tam et al., 2010; Tierney and Kuby, 2008). Based on the literature reviewed, the switching costs construct is reflected on direct monetary expenses and non-monetary costs (Carlsson and Löfgren, 2006; Jones et al., 2007, 2000; Nettet and Helgesen, 2014). A measurement item intended to reflect the feeling of being obliged to use the same airport due to convenience was also included (Yang and Peterson, 2004).

## **5. RESULTS AND DISCUSSION**

### **5.1. THE MEASUREMENT MODEL**

Using exploratory factor analyses, a preliminary assessment supported unidimensionality and sampling adequacy, based on the KMO values, the statistical significance of the Barlett's test of sphericity, and the explained variance. Item-total correlations indicated item reliability, with the exception of the variable COP1, which presented a value lower than 0,4 (Hair et al., 2014). This finding may be justified by the idea that unpleased passengers are not likely to voice their dissatisfaction to the airport staff (Chang et al., 2008). Therefore, variable COP1 was excluded from the further analyses.

According to the literature, the initial model was modified based on successive interactions, considering: i) item reliability; ii) standardized residuals covariances; and iii) modification indices (Byrne, 2010; Hair et al., 2014). Measurement items excluded in this process are identified in Appendix A. The final measurement model presented good fit ( $\chi^2=1460.506$ ;  $df=673$ ;  $\chi^2/df=2.170$ ;  $RMSEA=.051$ ,  $].048:.055$ ];  $GFI=.858$ ;  $PGFI=.740$ ;  $CFI=.912$ ;  $PCFI=.828$ ;  $TLI=.903$ ;  $IFI=.913$ ). Concerning item reliability, all factor loadings were statistically significant and reasonably strong. Table 3 summarizes the results for the final measurement model.

**Table 3. Measurement model results.**

Construct	Item/ Dimension	Estimate	S.E.	C.R.	p- value	Standard Estimate
Expectation	EXP3	1,073	0,094	11,46	***	0,660
	EXP4	1,398	0,127	10,99	***	0,909
	EXP5	1	-	-	-	0,637
Perceived value	VAL1	0,918	0,060	15,37	***	0,711
	VAL2	1,050	0,054	19,45	***	0,865
	VAL3	1	-	-	-	0,845
Satisfaction	SAT1	1,158	0,074	15,69	***	0,791
	SAT2	1,248	0,077	16,14	***	0,831
	SAT3	1,163	0,076	15,33	***	0,782
	SAT5	1	-	-	-	0,714
Complaints	COP2	1,354	0,114	11,88	***	0,728
	COP3	1,619	0,133	12,13	***	0,852
	COP4	1	-	-	-	0,643
Switching costs	SWC1	0,744	0,057	13,09	***	0,617
	SWC2	0,952	0,054	17,48	***	0,796
	SWC3	1,072	0,054	20,03	***	0,881
	SWC4	1	-	-	-	0,798
Loyalty	LOY1	0,890	0,068	13,04	***	0,774
	LOY2	0,908	0,076	11,87	***	0,616
	LOY5	1	-	-	-	0,756
Check-in	CHK1	0,971	0,061	15,85	***	0,732
	CHK2	1,102	0,056	19,74	***	0,884
	CHK3	1	-	-	-	0,818
Security	SEC1	1,137	0,086	13,20	***	0,762
	SEC2	1,144	0,086	13,33	***	0,755
	SEC3	1,112	0,079	14,01	***	0,775
	SEC4	1	-	-	-	0,672
Convenience	CON1	1,357	0,116	11,70	***	0,797
	CON2	1,245	0,103	12,05	***	0,786
	CON3	1	-	-	-	0,617
Mobility	MOB1	1,263	0,108	11,70	***	0,777
	MOB2	1,281	0,108	11,87	***	0,794
	MOB3	1	-	-	-	0,621
Ambience	AMB1	0,912	0,053	17,24	***	0,842
	AMB2	1,001	0,058	17,27	***	0,790
	AMB3	1	-	-	-	0,774
Basic Facilities	BAS1	1,001	0,065	15,38	***	0,790
	BAS2	1,194	0,074	16,10	***	0,831
	BAS3	1	-	-	-	0,765

Notes: CR – Critical ratios; “-“ – not estimated, factor loading constrained to 1 for model identification.

As for the second-order construct ASQ, it was based on Bezerra and Gomes (2016). In this study, the recommended procedures for higher-order Confirmatory Factor Analysis were followed to identify and estimating the hierarchial construct (Byrne, 2010). In addition, an auxiliary model estimation exclusively to the second-order ASQ construct provided an acceptable fit (CMIN/df=3,132; RMSEA=0,069, [0,062: 0,076]; GFI=0,906; PGFI=0,686; CFI=0,931; PCFI=0,784; TLI=0,918; IFI=0,931). The factor loadings were significant (p-value < 0,01) and reasonably strong.



Table 4 summarizes construct validity and reliability measures, including correlations between the constructs. No significant concerns were found (Fornell and Larcker, 1981; Hair et al., 2014).

**Table 4. Measures of construct validity and reliability.**

	SWC	EXP	VAL	SAT	COP	LOY	ASQ	$\alpha$	CR	AVE
Switching Costs -SWC	0.783							0.855	0.859	0.613
Expectation -EXP	0.101*	0.745						0.776	0.784	0.555
Value -VAL	-0.145***	0.137**	0.810					0.846	0.850	0.656
Satisfaction -SAT	-0.238***	0.133**	0.778***	0.781				0.861	0.864	0.610
Complaints -COP	0.262***	0.092	-0.360***	-0.402***	0.746			0.782	0.789	0.557
Loyalty -LOY	0.661***	0.174***	0.139**	0.195***	-0.032	0.719		0.757	0.763	0.517
ASQ	-0.097*	0.137**	0.649***	0.787***	-0.348***	0.286***	0.723	0.792	0.871	0.523

Notes: \*Significance level<0.10; \*\*Significance level<0.05; \*\*\*Significance level<0.01;  $\alpha$  – Cronbach’s Alpha; CR – Composite Reliability; AVE – Average Extracted Variance; In the main diagonal, the square root of AVE.

To be noted that the correlation between the constructs ASQ and SAT was slightly higher than the square root of the AVE for the constructs SAT and ASQ. Even though this can be considered a minor issue regarding discriminant validity, the following reasons have been taken into account:

- a. Based on the literature, the constructs SAT – Satisfaction and ASQ – Airport Service Quality are expected to be highly correlated, as perceived service quality is a key antecedent of customer satisfaction (Falk et al., 2010; Oliver, 2015);
- b. The previous stages of data analysis suggested no indication for changes in the measurement model (including item reliability, standardized residual covariances, and analysis of modification indices);
- c. So far as the authors are concerned, this study is the first to develop and test such a comprehensive cause-and-effect model based on robust theoretical support to explicitly examine the antecedents and consequences of passenger satisfaction in the airport context.

Based on these reasons and the specialized literature, any further modification in the measurement model derived from the literature should be supported by both strong statistical and theoretical indication (Byrne, 2010; Hair et al., 2018). As it was not the case, the measurement model was retained as indicated.

Regarding common method variance, based on the results of the Harman’s single factor test, and of the common Latent factor approach (Podsakoff et al., 2003), no significant common method bias was found.

As for the Harman's single factor, previous studies have suggested the Harman’s approach may not detect

the presence of common method bias, but more recent research indicates it is a quite meaningful method (Babin et al., 2016; Fuller et al., 2016).

## 5.2. HYPOTHESIS TESTING

The hypotheses testing results are shown in Table 5, including the statistical significance of the estimates. Seven out of the ten research hypotheses were supported. Only the hypotheses related to the effects of expectation on perceived value (H1b) and on satisfaction (H1c), along with the effect of complaints on loyalty (H5) were not supported.

**Table 5. Results for the research hypotheses.**

Research hypothesis			Estimate $\lambda$	C.R.	p-value	Supported	
Expectation	---->	Perceived ASQ	H1a(+)	0.134	2.260	**	Yes
Expectation	---->	Perceived value	H1b(+)	0.047	0.974	n.s.	No
Expectation	---->	Satisfaction	H1c(+)	-0.001	-0.032	n.s.	No
Perceived ASQ	---->	Value	H2a(+)	0.642	7.854	***	Yes
Perceived ASQ	---->	Satisfaction	H2b(+)	0.502	6.507	***	Yes
Perceived value	---->	Satisfaction	H3(+)	0.453	7.299	***	Yes
Satisfaction	---->	Loyalty	H4a(+)	0.310	6.038	***	Yes
Satisfaction	---->	Complaints	H4b(-)	-0.412	-6.643	***	Yes
Complaints	---->	Loyalty	H5(-)	-0.067	-1.312	n.s.	No
Switching costs	---->	Loyalty	H6(+)	0.703	11.933	***	Yes

Notes: C.R.- Critical ratio; n.s.- non-significant; \*\*\* p-value<0.01; \*\* p-value<0.05.

In Appendix B, the standardized estimates and the statistical significance of the direct, indirect, and total effects are presented. The analysis of the total effects provides useful information on the relationships. As such, we may highlight, for instance: (i) the weak total effects of passenger expectation; (ii) the total effects of ASQ on passenger satisfaction, which are the highest in the model; (iii) the indirect effects of ASQ and perceived value on loyalty, in addition to the direct effects of satisfaction; and (iv) the direct effect of the switching costs on loyalty, which doubles the effect of satisfaction on loyalty. Further discussion on the results associated with the constructs are provided in the next section.

## 5.3. DISCUSSION

### 5.3.1. Passenger expectation

According to the research hypotheses, passenger expectations should present a direct effect on ASQ, perceived value, and satisfaction, along with indirect effects mediated by ASQ and perceived value.

However, the results presented only a small significant direct effect on ASQ, and small significant indirect effects on perceived value and satisfaction.

Customers may use different types of expectations when forming opinions about a service anticipated performance (Oliver, 2015; Parasuraman et al., 1994; Teas, 1993). In the airport environment, passengers are usually expecting just efficient and reliable services, and a minimum level of comfort (Caves and Pickard, 2001; Popovic et al., 2009), which, based on the results, did not seem to be directly related to their perceptions of value and satisfaction.

Furthermore, once the sample included a noteworthy proportion of passengers which frequently utilize the airport, this past experience might have influenced their anticipated idea about the service. Therefore, based on their previous experience, the nature of passenger expectation can be quite realistic and present no significant influence on their attitude towards the airport.

### **5.3.2. Airport service quality**

The perceived airport service quality (ASQ) presented significant and reasonable strong effect on the variance of the perceived value. Regarding the effects on passenger satisfaction, the standardized total effects were the highest in the model. Moreover, its indirect effects on complaints and on loyalty were significant.

Measuring service quality based on the customer perspective has been subject to intense debate, including the use of generic scales versus context-specific approaches (Adil et al., 2013; Bezerra and Gomes, 2016; Brady et al., 2002; George et al., 2013; Pantouvakis, 2010; Seth et al., 2005). In this study, an ASQ multidimensional scale consisting of typical measures within the airport industry successfully operationalized passenger perception of service quality and its relationships with the other model constructs. Therefore, the findings suggest the nomological validity of this context-specific scale for measuring service quality in an airport environment.

### **5.3.3. Perceived value**

The perceived value presented a significant positive effect on passenger satisfaction and mediated the effects of expectation and ASQ on satisfaction. Furthermore, its indirect effects on loyalty and complaining attitude were significant, albeit not strong. Accordingly, as the measurement items used in the final model are associated with core elements of the airport service, including service efficiency and comfort, the findings emphasize the relevance of these elements for the passenger's perception of value.

To be noted that the perception of value is very particular within the airport context. Regarding the required processing activities (i.e. check-in and security screening), passengers are expected to initiate and perform a part of them. In this sense, passengers are co-creators of the value (Grönroos and Voima, 2013). Therefore, perception of value concerning these activities is not expected to occur directly (Wattanacharoensil et al., 2016). It is reasonable to assume that, if passengers have a choice, they would prefer skipping these processes (Gkritza et al., 2006; Kalakou and Moura, 2015; Sindhav et al., 2006). In this context, service value seems to be related to the reliability and perceived fairness regarding these processes.

Concerning the other aspects of the passenger experience in the airport (i.e. airport comfort and the convenience facilities and ancillary services), their value is expected to be directly perceived. Recent research suggested that passenger experience in the airport are changing and they may desire their experience to include work-related activities and a more extensive set of discretionary and leisure activities (Bogicevic et al., 2013; Popovic et al., 2010; Wattanacharoensil et al., 2017, 2016).

### **5.3.4. Passenger satisfaction and its consequences**

Based on the results (Table 4), the more satisfied is the passenger, less likely they are to complain, and higher will be their intention to use the airport for future flights. However, the indirect effect of satisfaction on loyalty mediated by the construct complaints was not significant.

Concerning the negative effect of passenger satisfaction on complaints, the finding is consistent with Chang et al. (2008). As for, the positive effect of satisfaction on the passenger loyalty, it has been confirmed by

Nesset and Hegelsen (2014) and Park and Jung (2011). The indirect effect of satisfaction on loyalty mediated by complaints, however, was not considered in any of these previous studies, therefore our findings are new pieces of information to examine passenger behavioral attitude related to the complaint intentions.

About the intention to complain, its effect was not significant for explaining loyalty. This finding suggests that even passengers willing to complain about the airport may be likely to choose this same airport for their next flight. It is reasonable to assume that complaints may not impact on customer loyalty when there is an effective service recovery system (Homburg and Fürst, 2005; Knox and Van Oest, 2014). However, since the construct complaints was measured only with attitudinal measures, it does not seem to be the case. Justification for this finding may be associated with three main issues: (i) the nature of passenger expectation regarding the airport; (ii) the offer of flights; and (iii) the catchment area characteristics. These issues are following discussed.

About the nature of passenger expectation, it seems to be associated with the idea of a minimum tolerable performance (Chen, 2008; Teas, 1993), as reflected in the measurement items used. As previously discussed, the effects of expectation on the other constructs were small. In this respect, it seems that even passengers willing to complain about the service are not likely to decide for changing airports based solely on their previous experience.

Concerning the offer of flights, loyalty to the airport seems to be associated with the perception of the air transport service as an airline-airport combination. Thus, reuse intention may be in a great extent related to the offer of flight, including destination, frequency, and prices. Actually, airport choice is influenced by several factors, including key determinants to which airport executives may have little control over, such as access to the airport, offer of flights, and airfares (Cho et al., 2015; Dobruszkes et al., 2017; Luca, 2012; Pels et al., 2003; Yang et al., 2014).

As for the catchment area, the characteristics of the multi-airport region (MAR) which may influence competition are highly relevant for understanding passenger loyalty. Although satisfaction with the airport was definitely important for passengers, it seems that their loyalty could be better explained with the inclusion of additional variables to reflect other determinants of airport choice. Accordingly, based on the findings, some passengers willing to complain about the airport may not see changing airport as a convenient alternative. No matter how dissatisfied they could be, they would still use the airport to avoid switching costs (Jen et al., 2011; Jones et al., 2007). In this context, it may be the case that passengers would prefer dealing with their feelings of dissatisfaction and include this experience in their future expectation about the airport.

#### **5.3.5. Switching costs and passenger loyalty**

The effect of switching costs on passenger loyalty was significant and strong. Indeed, its standardized effect was greater than the effect of satisfaction on loyalty. These findings suggest that departing passengers at Congonhas Airport perceive the existence of switching costs as a determinant factor for reusing the airport in their next domestic flight from São Paulo. Nettet and Hegelsen (2014) also found a significant direct relationship between switching costs and loyalty in studying a Norwegian MAR.

Although passenger loyalty has been recognized as important strategic issue within the airport sector, even including the introduction of loyalty programs, there is still a lack of knowledge on the drivers of passenger loyalty towards the airport (Chen, 2008; Jen et al., 2011; Nettet and Helgesen, 2014). Several studies debated about the passenger's decision-making process regarding airport choice, and various factors have been considered. Notwithstanding, three factors are treated as key determinants: (i) accessibility to the airport; (ii) the offer of flights; and (iii) airfares (Dobruszkes et al., 2017; Luca, 2012; Moreno and Muller, 2003; Paliska et al., 2016; Pels et al., 2003; Tam et al., 2008; Yang et al., 2014).

The accessibility to the airport, which configure the availability and quality of the access alternatives to both main airports in São Paulo MAR, have been considered in previous studies. Moreno and Muller (2003) found that accessibility was determinant for airport choice in this MAR. Congonhas Airport (SBSP) is

located close to the São Paulo city center, which includes a large financial area. Passengers usually arrive at SBSP airport by car, taxis or regular buses lines (SAC, 2016). At the time of the survey, there was no connection to the metro system. Guarulhos Airport (SBGR), the other main airport in the MAR, is approximately 25 kilometers from the city center. The availability of access alternatives to SBGR were the same, nonetheless regular buses services are intercity lines (since SBGR is located in the nearby town Guarulhos). Traffic in São Paulo is usually hard, and passengers are subject to unexpected delays (Rolnik and Klintowitz, 2011). Based on these considerations, the finding that passengers are sensitive to the switching costs for changing airports may be associated, in large extent, with these specific characteristics of the catchment area, namely accessibility.

As for the offer of flights, the airlines with the largest share of the Brazilian domestic market usually operate at both airports. Also, the densest domestic routes are offered for both airports (ANAC, 2017). However, it is to be noted that characteristics of this offer differ in some aspects of interest for this discussion. As such, SBGR had more destinations, comparing to SBSP. In addition to the differences concerning airport capacity, there were operational restrictions to airport opening hours and aircraft performance in SBSP, which might be determinant for this difference in the offer of flights. In this context, SBSP has received shorter domestic and regional routes, and direct flights between São Paulo and other major Brazilian cities in the Southeast, South, and Central-West regions (ANAC, 2017).

Concerning the airfares, because of the better accessibility and reduced offer of flights, SBSP has usually presented higher average airfares comparing to Guarulhos. Ueda (2012) has identified that tickets for flights departing from SBSP were on average 5% higher than flights departing from SBGR, for the same destination. Another factor related to this characteristic is that air travel demand presents a significant percentage of business passengers, whose are usually less sensitive to the prices and more concerned about their schedule and travel duration (Breure and Van Meel, 2003; Park et al., 2004).

Based on the above discussion, it seems that characteristics of the multi-airport region, including airport accessibility and the offer of flights are determinant for passenger perceptions of the existence of switching costs for changing airports in the São Paulo multi-airport region.

## **6. CONCLUSIONS**

In the current business environment, airports have been compelled to operate as self-sufficient service organizations. In this context, airport executives are expected to pay close attention to the passenger experience in the airport (Adler et al., 2015; Halpern and Graham, 2013; Kalakou et al., 2015; Page, 2012; Van Oel and Van den Berkhof, 2013; Wattanacharoensil et al., 2017, 2016). As such, there is increasing need for integrating the measurement of passenger perceptions and behavioral attitudes within the context of airport management.

In this study, the relationships between the antecedents and consequences of passenger satisfaction with the airport were examined using a comprehensive research model, which also included the effects of switching costs for changing airports within a multi-airport region (MAR). It is among the few research efforts with such a comprehensive approach to passenger satisfaction in the airport context. Particularly, it is the first to examine the effects of passenger expectations and complaint intentions conjointly in a structural model of relationships.

The contributions highlight the importance of understanding passenger's perceptions on their airport experience and their behavioral attitudes towards the airport, including the existence of switching costs for changing airport choice. Based on the results and their discussion, the following most relevant findings are stressed.

First, it seems that passenger expectations do not influence their perception of service value and their satisfaction level. Moreover, even its effects on perceived service quality seems not be strong. In other words, when it comes to airports, passenger expectations seem to relate to the idea of a minimum tolerable service performance. In this sense, as a lack of understanding or misunderstanding of passenger



expectations can mislead resource allocation decisions, to provide the level of service the passengers really want, airport executives need to create information processes to help them identifying their actual passenger expectations.

Second, the direct effects of ASQ on the perceived value and passenger satisfaction were strong. These findings also stress the need for airports to understand their passengers' actual expectations to effectively plan and provide the wanted services and facilities characteristics at a proper level of quality. Actually, not only passengers can perceive different aspects of the airport service performance, as demonstrated by the distinct ASQ dimensions, but also the effects of service quality on the perceived value, satisfaction, and post-consumption behavior are significant. In the context of airport competition, it is noteworthy that service quality still influences passenger post-consumption attitudes, even when the effects of switching costs were considered. Accordingly, the passenger-oriented approach provided in this paper can be useful for helping airport managers in efficiently improving their services in a competitive environment.

Third, while passenger satisfaction presented a significant and reasonably strong effect on passenger loyalty, the effect of switching costs was much stronger. Along with the non-significant effect of complaints on loyalty, these findings emphasize the importance of the competitive dynamics for airports. In this regard, it is noteworthy that some of the key determinants of passenger loyalty, particularly in the context of competition for catchment area, may not be under the control of the airport. The findings stress the need for airport executives to influence their stakeholders (including policy makers, airlines, public transport organizations, and others) to improve their airport attractiveness in the competitive environment.

Congonhas was the only airport used in this study. Therefore, studying passenger perceptions and behavioral attitudes on other major airports may provide additional insights regarding the research objectives. Especially, a comparative study with data from the other airports in the specific MAR would be relevant for further examining the effects of switching costs and, therefore, the problem of airport competition based on the passenger perspective. Regarding the relevance of service value for airports driven

by a commercial perspective, another opportunity for research would be to explore the passenger expectations and their perception of value concerning the different attributes of the airport services and facilities. Also, in view of the nature of the airport competition for catchment area, further developments of the model used in this research could include typical determinants of airport choice in order to obtain further understanding on the nature of passenger loyalty to the airport.

Especially regarding the subject of passenger segmentation, there are other opportunities for future research, which were not included in this study due to the limitations of the sample or the questionnaire design. For example, it would be interesting to investigate how new customers perceive their airport experience in comparison to repeated customers. Another interesting point would be to identify which factors could influence the passengers that take the airport for the very first time, such as media coverage, word-of-mouth, and other marketing strategies.

Considering the state-of-the-art of the literature related to passenger satisfaction in the airport context, this study is innovative in the sense it examines the relationships between the typical antecedents and consequences of passenger satisfaction based on a comprehensive approach to the research problem, including the effects of switching costs in a multi-airport region. In this sense, the findings are valuable for discussing airport planning and service performance with a customer-oriented perspective of the airport business.

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## APPENDIX A. Descriptives.

Measurement items	N	Mean	SE	SD	Skew.	Kurt.
EXP1- I had high expectation about the airport quality*	440	4,62	0,079	1,44	-0,208	-0,113
EXP2- I expected the airport to fully meet my needs as a passenger*	439	5,20	0,070	1,47	-0,723	0,163
EXP3- I expected no failure in the service provision	440	5,29	0,080	1,67	-0,878	0,056
EXP4- I expected the services to be speedy and efficient	443	5,49	0,075	1,58	-0,913	0,080
EXP5- I expected to feel comfortable and safe at the airport	434	5,61	0,078	1,63	-1,193	0,725
VAL1- Considering the overall airport quality, the airport fee is fair	442	3,62	0,085	1,79	0,135	-0,876
VAL2- Considering the airport fee, the airport services are very good	443	3,55	0,080	1,68	0,202	-0,772
VAL3- Considering the airport fee, the comfort is very good	438	3,63	0,079	1,65	-0,001	-0,816
VAL4- Considering the quality of products/services, the prices in the commercial facilities are fair*	441	2,35	0,074	1,56	0,913	-0,249
VAL5- Considering the prices in commercial facilities, the quality of products/services is very good*	441	3,05	0,076	1,61	0,287	-0,919
SAT1- Overall, I am very satisfied with the airport	443	3,79	0,076	1,60	0,007	-0,666
SAT2- The airport exceeds my expectations	441	3,22	0,078	1,65	0,238	-0,850
SAT3- The airport represents what I understand for an ideal airport	440	2,94	0,078	1,63	0,518	-0,569
SAT4- I feel I have made the right decision in choosing this airport*	438	4,05	0,072	1,52	-0,263	-0,147
SAT5- Overall, my experience with the airport is very pleasant	439	4,06	0,074	1,54	-0,167	-0,417
COP1- I do not formally complained to the airport*	442	2,25	0,085	1,78	1,175	0,151
COP2- I have (or have had) intention to formally complain to the airport	438	3,20	0,099	2,07	0,434	-1,088
COP3- I have complained (or I am likely to complain) about the airport to family or friends	439	3,48	0,101	2,11	0,260	-1,524
COP4- Passengers that have complained to the airport are likely fair	436	4,43	0,083	1,73	-0,280	-0,534
COP5- I do not believe that complaints are properly solved by the airport*	438	4,47	0,084	1,75	-0,340	-0,589
SWC1- For me, it would be more expensive using another airport in this city	439	4,62	0,089	1,87	-0,398	-0,719
SWC2- It would demand more personal efforts using another airport in this city	440	5,15	0,088	1,85	-0,770	-0,338
SWC3- It would take much time if I have decided for using another airport in this city	437	5,25	0,090	1,89	-0,887	-0,245
SWC4- For me, it would be very inconvenient to use another airport in this city	439	4,92	0,093	1,94	-0,631	-0,624
SWC5- For convenience, I feel obliged to use this airport for domestic flights from São Paulo*	441	4,94	0,098	2,06	-0,704	-0,766
LOY1- I will use this airport for my next flight departing from São Paulo	442	5,27	0,073	1,54	-0,524	-0,458
LOY2- Even if another airport in the city offers a much cheaper fee, I prefer using this airport	440	4,16	0,094	1,98	-0,162	-1,000
LOY3- Even if another airport in the city has an equivalent flight much cheaper, I prefer to use this airport*	441	3,59	0,094	1,98	0,202	-1,044
LOY4- I will recommend this airport to my family and friends departing from São Paulo*	441	4,25	0,074	1,56	-0,155	-0,138
LOY5- I always prefer using this airport for domestic flights departing from São Paulo	443	4,79	0,084	1,77	-0,513	-0,417
CHK1- Wait time at check-in	442	4,59	0,073	1,54	-0,267	-0,288
CHK2- Check-in process efficiency	440	4,92	0,069	1,46	-0,269	-0,519
CHK3- Courtesy and helpfulness of check-in staff	437	5,02	0,068	1,43	-0,474	-0,222
SEC1- Wait-time at security checkpoints	442	4,92	0,073	1,54	-0,550	-0,209
SEC2- Thoroughness of security screening	439	4,89	0,075	1,57	-0,605	-0,194
SEC3- Courtesy and helpfulness of security staff	438	4,80	0,071	1,49	-0,593	-0,131
SEC4- Feeling of being safe and secure	441	4,68	0,073	1,54	-0,467	-0,313
CON1- Availability and quality of food facilities	440	3,60	0,076	1,60	-0,040	-0,778
CON2- Availability and quality of stores	436	3,97	0,072	1,50	-0,223	-0,361
CON3- Availability of Banks/ATM/Exchange	436	4,04	0,073	1,53	-0,105	-0,597
AMB1- Cleanliness of airport facilities	440	4,86	0,067	1,40	-0,494	-0,234
AMB2- Thermal comfort	443	4,51	0,078	1,64	-0,407	-0,565
AMB3- Acoustic comfort	443	4,42	0,079	1,67	-0,416	-0,652
BAS1- Availability of washroom/toilets	441	4,51	0,071	1,49	-0,359	-0,294
BAS2- Cleanliness of washroom/toilets	440	4,29	0,080	1,69	-0,319	-0,694
BAS3- Departure lounge comfort	440	4,09	0,073	1,54	-0,149	-0,532
MOB1- Wayfinding	442	4,84	0,078	1,63	-0,540	-0,504
MOB2- Flight information	439	4,93	0,078	1,63	-0,662	-0,319
MOB3- Walking distance inside terminal	439	4,30	0,077	1,62	-0,388	-0,445

Notes: SE- Standard error; SD- Standard deviation; Skew- Skewness; Kurt- Kurtosis; \*Item excluded based on the measurement model estimation.



**APPENDIX B. The direct, indirect and total effects.**

<b>Construct</b>	<b>Effects</b>	<b>VAL</b>	<b>ASQ</b>	<b>SAT</b>	<b>COP</b>	<b>LOY</b>
<b>Passenger Expectation (EXP)</b>	DE	0,047	0,134	-0,001	-	-
	p	n.s.	**	n.s.	-	-
	IE	0,086	-	0,127	-0,052	0,043
	p	**	-	**	*	*
	TE	0,133	0,134	0,126	-0,052	0,043
p	**	**	*	*	*	
<b>Perceived Value (VAL)</b>	DE	-	-	0,453	-	-
	p	-	-	***	-	-
	IE	-	-	-	-0,187	0,153
	p	-	-	-	***	***
	TE	-	-	0,453	-0,187	0,153
p	-	-	***	***	***	
<b>ASQ</b>	DE	0,642	-	0,502	-	-
	p	***	-	***	-	-
	IE	-	-	0,291	-0,327	0,268
	p	-	-	***	***	***
	TE	0,642	-	0,793	-0,327	0,268
p	***	-	***	***	***	
<b>Passenger Satisfaction (SAT)</b>	DE	-	-	-	-0,412	0,310
	p	-	-	-	***	***
	IE	-	-	-	-	0,028
	P	-	-	-	-	n.s.
	TE	-	-	-	-	0,338
P	-	-	-	-	***	

**Notes:** Statistical significance calculated based on the bootstrapping method; DE- standardized direct effects; IE-standardized indirect effects; TE- standardized total effects; \*\*\* significant at 0,01 level; \*\* significant at 0,05 level; \* significant at 0,10 level; n.s. non-significant.