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# Determinants of passenger loyalty in multi-airport regions: Implications for tourism destination

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ABSTRACT

This study examines the drivers of passenger loyalty to the airport in a multi-airport region. For this purpose, partial least squares–structural equation modelling (PLS–SEM) was used to analyse survey data. The findings highlight the role of customer segmentation to define marketing and operational strategies, which should be used to strengthen the loyalty to the airport as well as to contribute to the improvement of the tourism destination image. In addition, this research offers an integrative approach to analyse passenger perceptions and attitudes regarding the airport experience. This integrative approach can also help airport managers to design and implement more effective performance measurement systems, which could be used to transform the airport environment in a tourism experience.

## 1. Introduction

In today's global marketplace, the tourist experience with transportations is a key element for their overall experience (Volo, 2009). As such, airports became central elements of the tourism services chain, as they can represent the first and last impression of the tourism destination (Voltes-Dorta, Rodríguez-Déniz, & Suau-Sanchez, 2017; Wattanacharoensil, Schuckert, & Graham, 2016). They are also environmental variables in the hotel location decision, planning, and management (Hu, Chiu, Shieh, & Huang, 2010; Song & Ko, 2017).

In this perspective, airport performance can have a decisive impact on regional development and tourist attractiveness (Dimitriou, 2018). As such, tourism flows should be considered in the planning and management of airports, as well as airports should be taken into account when designing tourism promotion and regional development strategies (Fernández, Coto-Millán, & Díaz-Medina, 2018).

The airport services and facilities can not only influence their own operations but can also be considered as near-destination links that contribute to the development of tourism in the region where they are located (Tang, Weaver, & Lawton, 2017). As since airports act as an interpretive location of the tourism/destination image and slogan, passengers tend to see the airport according to their mental perception of the characteristics of a destination and vice-versa (Wattanacharoensil, Schuckert, Graham, & Dean, 2017). In this context, tourism literature is calling for more research on the passenger experience at the airport (Spasojevic, Lohmann, & Scott, 2017).

The literature has emphasized that a pleasant experience in the airport could lead to positive attitudes, including airport reuse intention, increasing non-aeronautical revenues, and competitive advantages (Ali, Kim, & Ryu, 2016; Han, Yu, & Kim, 2018; Wattanacharoensil et al., 2016). Furthermore, the positive effect of a pleasant experience can also be extrapolated to the passengers' opinions concerning their tourism destination.

Loyalty is recognized as a critical factor of service effectiveness in the tourism industry (Han et al., 2018; Han & Hyun, 2018; Hwang, Baloglu, & Tanford, 2019; Pimpão, Correia, Duque, & Zorrinho, 2018), as well as in the airline business (Akamavi, Mohamed, Pellmann, & Xu, 2015; Forgas, Moliner, Sanchez, & Palau, 2010; Hapsari, Clemes, & Dean, 2017; Rajaguru, 2016). However, the nature and determinants of passengers loyalty towards the airport are still under-researched (Cui, Kuang, Wu, & Li, 2013; Nesset & Helgesen, 2014). Moreover, customer segmentation, which is a useful instrument to strengthen customer loyalty in tourism (Almeida-Santana & Moreno-Gil, 2018; Chen, Raab, & Tanford, 2017) and airline business (Hapsari et al., 2017; Pantouvakis & Renzi, 2016), has not been fully researched in the airport context (Leung, Yen, & Lohmann, 2017).

Literature has explored passenger characteristics and how they affect different aspects of their experience at the airport (Ali et al., 2016; Bezerra & Gomes, 2015; Freathy & O'Connel, 2012; Leung et al., 2017; Pantouvakis & Renzi, 2016). Nevertheless, the results obtained are not

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conclusive, especially regarding which of those characteristics are more relevant for tourism and airport management. Moreover, the characteristics of different groups of passengers have not been used as a latent base for segmentation. In effect, understanding the latent passenger segmentation could help to identify differences between groups of passengers and support strategies of services customization (Bock, Mangus, & Folse, 2016; Freathy & O'Connel, 2012). As such, airport managers could be able to strengthen passenger loyalty, particularly in multi-airport regions, as well as to contribute to the improvement of the tourism destination image.

In order to fill these research gaps, this paper aimed to examine the drivers of passenger loyalty to the airport in a multi-airport region, and the moderating effects of different segments of passengers. For this purpose, a conceptual model, including the relationships between the passenger perceptions and attitudes towards the airport, was developed based on the literature and used to test several research hypotheses. In addition, an emphasis is also given to the comprehensive framework used, which has important theoretical and practical implications through the lens of tourism research.

In the following section, the theoretical background, the conceptual model, and research hypotheses are presented. In the third section, the measurement items, the sample, and the data analysis methods are described. The fourth section present and discusses the results. The last section stresses the main findings, as well as implications and suggestions for future research.

## 2. Background

### 2.1. Passenger loyalty

Customer loyalty has been a major subject in the marketing literature, as a strategic objective for organizations in competitive environments. Understanding the determinants of loyalty are imperative for retaining customers, achieving positive word-of-mouth, and increasing revenues (Andreassen & Lindestad, 1998; Baumann, Hoadley, Hamin, & Nugraha, 2017; Bock et al., 2016; Bodet, 2008; Bowen & Chen, 2001; Oliver, 2014).

Although there is an emergent debate on passenger loyalty within the airport industry, including loyalty programs (Halpern & Pagliari, 2008; Nesset & Helgesen, 2014; Paliska, Drobne, Borruso, & Gardina, 2016; Wattanacharoensil et al., 2016), there is a lack of empirical evidence on the nature and drivers of passenger loyalty towards the airport. Even though the service experience and the level of satisfaction can have important roles, passenger behaviour regarding the airport may depend on several other aspects, including passenger characteristics and particularities of the marketplace (Nesset & Helgesen, 2014; Wiltshire, 2017).

Bearing these considerations in mind, in this study, satisfaction, complaints, airport image, and switching costs were considered as direct antecedents of passenger loyalty. Looking for a more comprehensive approach, the indirect effects of expectations, airport service quality, and service value were included (Anderson & Fornell, 2000; Fornell, Johnson, Anderson, Cha, & Bryant, 1996; Grönroos & Voima, 2013; Morgeson, 2012). Additionally, accounting for the competitive dynamics of the airport sector, the switching costs associated with changing airports were included. The hypothesized relationships are discussed in view of the airport business environment in the next sections.

### 2.2. Direct antecedents

#### 2.2.1. Passenger satisfaction

The association between satisfaction and loyalty has long been investigated in several service contexts, including the tourism industry (Chen et al., 2017; Deng, Yeh, & Sung, 2013; Han & Hyun, 2018). Concerning airports, over recent decades the interest in passenger satisfaction has substantially increased (Ali et al., 2016; Bezerra & Gomes, 2015; Bogicevic, Bujisic, Bilgihan, Yang, & Cobanoglu, 2017; Bogicevic, Yang, Bilgihan, & Bujisic, 2013; Moon, Yoon, & Han, 2016).

Some comprehensive approaches can be found in the airport-related literature. For instance, Chang, Liu, Wen, and Lin (2008) explored relationships between social justice, service quality, satisfaction, and complaints. They found social justice and service quality positively affects passenger satisfaction, while satisfaction has a negative effect on passenger complaint intention.

Park and Jung (2011) examined passenger's perceptions of service quality and their influence on service value, satisfaction, image, and post-consumption behaviour. The findings suggested positive effects of service quality on satisfaction, service value, and image, while service value, image, and satisfaction positively affect passengers' reuse intentions and their intention to recommend the airport to other passengers.

Nesset and Helgesen (2014) analysed the effects of different aspects related to passenger satisfaction, comprising the effects of switching costs. Based on their results, service quality was the most important driver of passenger loyalty towards the airport. However, low switching costs passengers also have flight offer as an important factor for loyalty, while high switching costs passengers see airport facilities as relevant.

Chen et al. (2015) examined the determinants of passenger satisfaction, the nature of the relationship between satisfaction and service value, and the moderating effect of service innovation. Their findings show that perceived value was influenced by passenger satisfaction and service innovation. Among the innovative services considered in the study, the security check was the most important for passengers.

Moon et al. (2016) investigated the relationships between the airport physical environments, emotions, and satisfaction, including the mediating role of emotion in the relationship between physical environment and satisfaction. According to their findings, three components of airport physical environments had direct effects on passenger pleasure (layout accessibility, facility aesthetics, and cleanliness), while most of those components are insignificant on passenger arousal. The authors concluded that arousal was an invalid dimension on passenger satisfaction with the airport, not mediating the effects of attributes of the airport environment on their level of satisfaction.

More recently, Moon, Yoon, and Han (2017) examined the relationships between the airport physical environment, the perception of airport safety, passenger satisfaction, and passenger behavioural intentions. In this work, facility aesthetics appeared as the strongest component of the physical surroundings in eliciting satisfaction. Moreover, satisfaction had a strong impact on passenger intentions to spend more money in the airport and reusing the airport. However, the moderated effect of perceived safety was not significant.

In light of this recent literature and aiming to contribute to fulfil the current gap on the relationships between different aspects of the customer experience at the airport, as well as their effects on customer attitudes towards the airport and the tourist destination, in this paper, satisfaction mediates passenger expectations and perceptions about the experience and their post-purchase behaviour. As such, it is expected to have a direct positive influence on loyalty and a negative influence on complaints (Anderson & Fornell, 2000; Bodet, 2008; Fornell et al., 1996; Han & Hyun, 2018; Johnson, Gustafsson, Andreassen, Lervik, & Cha, 2001). Concerning the airport context, the effects of passenger satisfaction on loyalty have been examined by Nesset and Helgesen (2014) and Park and Jung (2011). In both studies, the hypothesis of a direct positive effect was supported. As for the negative effect of satisfaction in passenger complaining attitude, Chang et al. (2008) supported that hypothesis. Consequently, as long as the passengers are satisfied with the airport experience, they are less likely to have any intention to complain.

**H1a.** Passenger satisfaction positively affects passenger loyalty.

**H1b.** Passenger satisfaction negatively affects their complaining attitude.

#### 2.2.2. Passenger complaints

The complaining attitude is usually associated with service failure or with a poor performance (Wilson, Zeithaml, Bitner, & Gremler, 2012). Accordingly, passengers willing to complain would be less likely to reuse the airport if they have an alternative, which suggests a negative effect of complaints on loyalty (Deng et al., 2013; Knox & Van Oest, 2014). The following hypothesis is considered.

**H2.** Passenger complaining attitude negatively affects passenger loyalty.

#### 2.2.3. Airport image

The corporate image reflects perceptions of the organization held by different publics. These perceptions form a representation of an organization's past actions and their future behaviour (Andreassen & Lindestad, 1998; Balmer, 2012; Gray & Balmer, 1998). As such, corporate image is very important in the overall evaluation of the service and the organization (Abratt & Mingione, 2017). In the airport context, there is scarce evidence of the effects of airport image on passengers´ perceptions and attitudes (Ali et al., 2016; Nesset & Helgesen, 2014; Pantouvakis & Renzi, 2016). These effects can also have short and long-term implications for the tourism destination (Pizam, 2017; Voltes-Dorta et al., 2017).

Based on the literature, a favourable image is positively related to the passenger expectations regarding the service experience, their satisfaction, and their loyalty (Andreassen & Lindestad, 1998; Johnson et al., 2001; Lee, Chua, Kim, & Han, 2017).

**H3a.** Airport image positively affects passenger expectations.

**H3b.** Airport image positively affects passenger satisfaction.

**H3c.** Airport image positively affects passenger loyalty.

#### 2.2.4. Switching costs

The problem of airport choice has usually been associated with the offer of flights, access, and convenience in using the airport, travel purpose, and travel group size (Carlsson & Löfgren, 2006; Cho, Windle, & Dresner, 2015; Kim & Ryerson, 2018; Pels, Nijkamp, & Rietveld, 2003; Yang, Lu, & Hsu, 2014). In this context, analysis of airport substitutability should account for the available alternatives, and for the viability of switching to those alternatives (Polk & Bilotkach, 2013).

Although the scope for airport competition has widened, airport market power is still a relevant issue (Adler, Forsyth, Mueller, & Niemeier, 2015; Merkert & Mangia, 2014; Wiltshire, 2017). Regarding competition for catchment area, passenger perceptions of the switching costs for changing airports seem to be an important driver of loyalty, specifically reuse intention (Jen, Tu, & Lu, 2011; Nesset & Helgesen, 2014).

In this study, switching costs reflect the perceived economic and psychological costs associated with changing from one airport to another in the multi-airport region (Jones, Reynolds, Mothersbaugh, & Beatty, 2007). Hence, they are assumed to direct influence passenger loyalty. Moreover, the perception of switching costs is expected to moderate the effects of satisfaction, airport image, and complaints on loyalty (Jones, Mothersbaugh, & Beatty, 2000; Lam, Shankar, Erramilli, & Murthy, 2004). According to Lam et al. (2004) differences in loyalty attitude between satisfied and dissatisfied customers is widened in the situation of high switching costs. For Nesset and Helgesen (2014), an increase in switching costs will reinforce the significance of satisfaction and image on loyalty. As regards the complaints-loyalty relationship, complaining passengers may not see changing airport as a convenient alternative due to the perception of high switching costs. Thus, no matter how dissatisfied they could be, they would still maintain a relationship with the service provider to avoid switching costs (Jen et al., 2011; Jones et al., 2007). Accordingly, as switching costs increase, passengers may remain loyal to the airport despite their low level of satisfaction, their perception of bad airport image and their complaining attitude (Jones et al., 2000, 2007; Nesset & Helgesen, 2014; Z. Yang & Peterson, 2004).

**H4a.** Switching costs positively affects passenger loyalty.

**H4b.** Switching costs moderate the image-loyalty relationship.

**H4c.** Switching costs moderate the satisfaction-loyalty relationship.

**H4d.** Switching costs moderate the complaints-loyalty relationship.

### 2.3. Indirect antecedents

#### 2.3.1. Perceived value

The perception of value reflects the customer comparison between the service performance and the price paid for that service (Anderson & Fornell, 2000; Johnson et al., 2001; Zauner, Koller, & Hatak, 2015). The usual approach to perceived value is based on a trade-off between the benefits and the sacrifices in a market exchange (Prebensen, Woo, Chen, & Uysal, 2013; Sweeney & Soutar, 2001; Zauner et al., 2015; Zeithaml, 1988). Perceived value has been considered an indirect antecedent of customer satisfaction since the early 1990s (Fornell, 1992). The reason for using this construct in cause-and-effect models is to provide relevant diagnosis information concerning the relative impact of quality and value on customer satisfaction and their attitudes (Johnson et al., 2001). For instance, as the impact of value increases relative to the perceived quality, the price is a more important determinant of satisfaction than quality (Fornell et al., 1996). Therefore, it is expected that a higher perception of value will positively influence passenger satisfaction with the airport.

**H5.** Perceived value positively affects passenger satisfaction.

#### 2.3.2. Airport service quality (ASQ)

The airport service environment presents a high complexity. Thus, some aspects of the passenger-airport interaction may not be adequately covered by generic service quality scales (Fodness & Murray, 2007; George, Henthorne, & Panko, 2013; Pantouvakis, 2010). Recent literature has contributed to align service quality measurement and the effective passenger experience with the several airport services, facilities, and servicescape (Bezerra & Gomes, 2016a; Fodness & Murray, 2007; George et al., 2013).

Satisfaction is dependent on the customer experience with the service performance (Anderson & Fornell, 2000; Falk, Hammerschmidt, & Schepers, 2010; Oliver, 2014; Sureshchander, Chandrasekharan, & Anantharaman, 2002). Therefore, the customer perceptions on service quality is a critical driver of their level of satisfaction, being expected that high perceived quality is likely to improve a customer level of satisfaction with the product/service (Falk et al., 2010; Oliver, 2014; Bezerra & Gomes, 2015). Moreover, service quality is also important for a customer evaluative judgment about the value obtained from a service, as perception of value reflects a comparison between the service performance and the price paid for that service (Anderson & Fornell, 2000;Johnson et al., 2001; Zauner et al., 2015). As such, it is expected that service quality positively affects the perceived value (Fornell et al., 1996; Johnson et al., 2001).

**H6a.** ASQ positively affects the perceived value.

**H6b.** ASQ positively affects passenger satisfaction.

#### 2.3.3. Passenger expectations

Services literature stresses the importance of customer expectations

as a determinant of customer perceptions about the service and their level of satisfaction (Morgeson, 2012; Oliver, 2014; Parasuraman, Zeithaml, & Berry, 1994). However, the nature of passenger expectation regarding the airport experience is still under-researched (Bezerra & Gomes, 2015; Bogicevic et al., 2013; Hussain, Al Nasser, & Hussain, 2015).

Expectations reflect the attributes and characteristics associated with the service experience that is anticipated/predicted by the customer. These expectations can be related to prior consumption experience, as well as advertising and word-of-mouth information (Morgeson, 2012; Oliver, 2014; Parasuraman et al., 1994). Regardless of the sources that will form expectations, it is assumed that passengers will evaluate their experience (including service quality and value) based on these attributes/characteristics, and then they form their opinion about the whole experience (Oliver, 2014). Based on previous research, including the rationale of the national customer satisfaction models, the hypothesized relationships regarding passenger expectation comprise direct and positive effects on ASQ, perceived value, and satisfaction (Johnson et al., 2001; Zauner et al., 2015).

**H7a.** Passenger expectation positively affects ASQ.

**H7b.** Passenger expectation positively affects the perceived value.

**H7c.** Passenger expectation positively affects passenger satisfaction.

Following the above discussion, this study proposes a comprehensive model to analyse the drivers of passenger loyalty towards the airport (Fig. 1). This model was based on several previous research, as referred in this section, as well as on the rationale of the national customer satisfaction models (Johnson et al., 2001).

## 3. Research methodology

### 3.1. Measurement items and questionnaire development

As a result of the construct operationalization process, the empirical analysis comprised 59 measurement items reflecting eight latent variables, which were selected based on the literature reviewed. According to this specification, the measurement items are assumed to represent reflections of the construct they are intended to measure (Coltman, Devinney, Midgley, & Venaikd, 2008; Edwards & Bagozzi, 2000). As such, the measurement model consists of reflective measures. All the constructs included in the outer model, along with their measurement items and descriptive statistics are presented in Appendix A.

For the ASQ construct, a performance rating scale was used, which ranges from 1 – Very poor to 7 – Very good. For the remaining constructs a Likert seven-point scale was used, which ranges from 1 – strongly disagree to 7 – strongly agree.

Passenger loyalty included repurchase intention and tolerance to increase in prices (Bobâlca, Gatej, & Ciobanu, 2012; Bodet, 2008; Hill & Alexander, 2006; Johnson et al., 2001). This construct also comprised positive word-of-mouth (Mason, 2008; Nesset & Helgesen, 2014; Oliver, 2014; Sweeney, Soutar, & Mazzarol, 2012) and preference in a long-term perspective (Akamavi et al., 2015).

Regarding complaints, in the national customer satisfaction models, this construct is usually measured simply with a question asking whether a customer has formally complained (Fornell, Morgeson, & Bryant, 2008). However, since complaints are not always materialized to the organization (Chang et al., 2008; Wilson et al., 2012), four more items were added. Three items are intended to reflect passenger attitude to complain, which is consistent with previous studies and assumes that customers may very often do not formalize their dissatisfaction (Homburg & Fürst, 2005; Knox & Van Oest, 2014). Another item related to the passenger perception about how the complaints are solved by the organization is included (Johnson et al., 2001). Therefore, the construct comprised passenger's declared intentions and their perception about how complaints are solved by the airport.

The switching costs are reflected on monetary and non-monetary costs (Jones et al., 2000, 2007; Nesset & Helgesen, 2014; Yang & Peterson, 2004). Additionally, the feeling of being obliged to use the same airport due to convenience was included, which is related to a captive nature of loyalty (Patterson & Smith, 2003).

Concerning passenger satisfaction, three measurement items from the customer satisfaction index models were used (Anderson & Fornell, 2000; CFI Group, 2013; Fornell et al., 1996). Looking for a more comprehensive approach, other two items were included: the overall experience (Bogicevic et al., 2013; Moon et al., 2016); and the feeling of making a good choice in electing the airport (Bodet, 2008; Parasuraman, Zeithaml, & Berry, 1988), which reflects the cost of opportunity in the multi-airport region.

Regarding perceived value, the usual trade-off perspective (Prebensen et al., 2013; Sweeney & Soutar, 2001; Zauner et al., 2015; Zeithaml, 1988) was adapted to the airport context, comprising core airport facilities and convenience services (Bezerra & Gomes, 2015; Fodness & Murray, 2007; George et al., 2013). In operationalizing this construct, was considered that, in Brazil, due to Federal Regulation, the airport fees are presented to the customer separate from the effective air

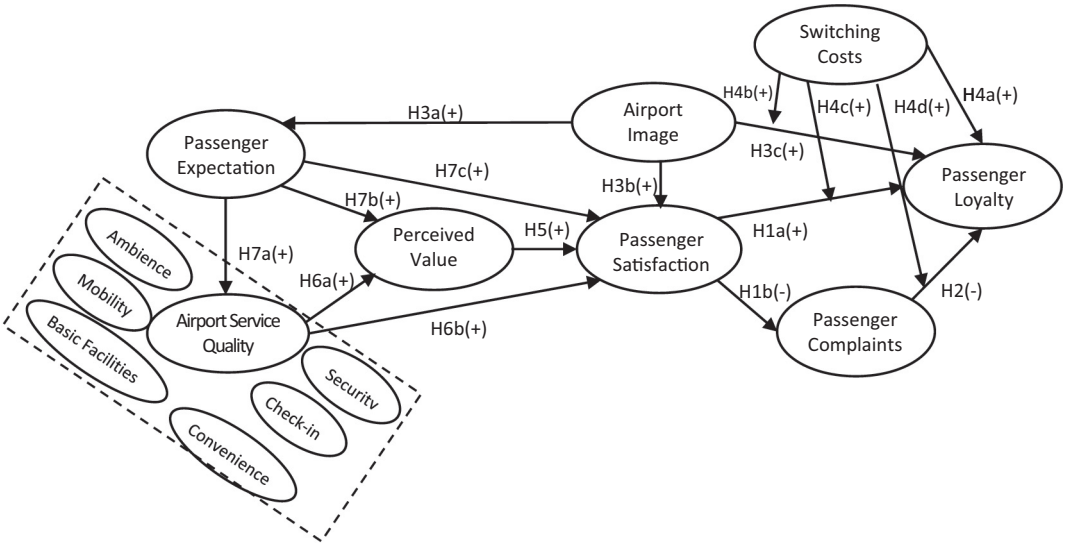


**Fig. 1.** The conceptual model.

ticket price. Accordingly, the measurement items used considered both the airport fee and the prices practiced in the commercial areas of the airport.

Airport service quality (ASQ) was operationalized using a second-order construct reflecting in six dimensions, as proposed by Bezerra and Gomes (2016a). Essentially, these six dimensions are related to the main aspects of passenger-airport interaction. The first aspect relates to the core activities associated with passenger processing, comprising the check-in and security screening. The second aspect is named Convenience, comprising discretionary activities that a passenger is able or willing to do in the airport. The third aspect is associated with the passenger perception of how ease is to move within the airport terminal. Finally, the dimensions basic facilities and airport ambience are representative of the passenger needs for being comfortable at the airport. The measurement items are similar to previous research (Bezerra & Gomes, 2015; Correia, Wirasinghe, & Barros, 2008; da Rocha, de Barros, Barbosa, & Costa, 2016; Park & Jung, 2011), and they are aligned with current industry practices (ACI, 2017; Kramer, Bothner, & Spiro, 2013). Based on a comprehensive approach to the passenger experience, other aspects of the commercial facilities and services were added. Since commercial revenues are increasingly important, this modification follows the ongoing debate on airport management (Fasone, Kofler, & Scuderi, 2016; Halpern & Graham, 2013; Kalakou & Macário, 2013; Wattanacharoensil et al., 2016).

Finally, passenger expectation comprised overall expectation, level of customization, and service reliability (CFI Group, 2013; Fornell et al., 1996; Johnson et al., 2001). Moreover, since the passenger's basic expectations typically comprise processing speed and an acceptable level of comfort (Caves & Pickard, 2001; Bogicevic et al., 2013), these aspects were included.

The questionnaire development process comprised consultation with experts for content validation (researchers, airport executives, and experts from the Brazilian Government) and an online trial survey applied to passengers that had used any Brazilian airport for a departing flight in the last three months. Participants in the trial survey also commented on item readability and provided suggestions. The main contributions were related to item wording.

### 3.2. Sample and data collection procedures

The survey was conducted at Congonhas Airport, located at the São Paulo metropolitan area (Brazil). This metropolitan area is a multi-airport region also served by Guarulhos Airport and Viracopos/Campinas Airport. While Guarulhos Airport and Viracopos/Campinas Airport operate domestic and international flights, Congonhas Airport processes only domestic flights.

Departing passengers in domestic flights were approached at the departure lounges to assure they have had the opportunity to experience the full range of the airport services, processes, and facilities (Correia et al., 2008). Sampling criteria were probability systematic, with every fifth passenger in a given departure gate invited to participate in the study by fulfilling the questionnaire. The survey team covered all the gates during two consecutive days. The useful sample represents 0.8% of the population of departing passengers in these days, which provides a confidence level of 95% and a margin of error of 5% (Cochran, 1977). Table 1 shows the demographic profile of the respondents.

According to data analysis instruments used in this research, the sample size was also found to be adequate (Joseph F. Hair, Ringle, & Sarstedt, 2011). The variables used to analyse the conceptual model do not contain missing values. Only the respondent's characteristics contained eight missing values. Therefore, the records with missing values were not used in the multi-group analysis.

Appendix A presents the descriptive statistics of the observed variables. The values of skewness range from −1.278 to 0.844, and the values of kurtosis range from −1.197 to 1.231, supporting the univariate normality for the data (J. F. Hair, Black, Babin, & Anderson, 2014). Concerning multivariate normality, based on the Mahalanobis´ distance, no significant outliers were found.

**Table 1**
Sample characteristics.

| Characteristic | Distribution | |
|---|---|---|
| | Freq. | % |
| Living in the city of São Paulo | | |
| Yes | 109 | 32.5 |
| No | 225 | 67.2 |
| Non response | 1 | 0.3 |
| Total | 335 | 100.0 |
| Gender | | |
| Male | 241 | 71.9 |
| Female | 93 | 27.8 |
| Non response | 1 | 0.3 |
| Total | 335 | 100.0 |
| Trip purpose | | |
| Business | 219 | 65.4 |
| Non-Business | 114 | 34.0 |
| Non response | 2 | 0.6 |
| Total | 335 | 100.0 |
| Antecedence of arrival at the airport | | |
| < 1 h | 130 | 38.8 |
| Equal or > 1 h to 2 h | 169 | 50.4 |
| > 2 h | 34 | 10.2 |
| Non response | 2 | 0.6 |
| Total | 335 | 100.0 |
| Number of departures from the airport in the last 12 months | | |
| First time | 37 | 11.0 |
| 2 to 3 times | 93 | 27.8 |
| 3 to 5 times | 58 | 17.3 |
| > 5 times | 146 | 43.6 |
| Non response | 1 | 0.3 |
| Total | 335 | 100.0 |

### 3.3. Data analysis

Consistent with the research objectives, the partial least squares - structural equation modelling (PLS-SEM) was applied to test the research hypotheses. This statistical method was used due to the complexity of the research model (Hair, Hollingsworth, Randolph, & Chong, 2017; Usakli & Kucukergin, 2018).

The finite mixture PLS (FIMIX-PLS) was employed to capture and identify unobserved heterogeneity of the sample (Hair, Sarstedt, Matthews, & Ringle, 2016a; Hair, Sarstedt, Matthews, & Ringle, 2016b). The PLS-MGA method (Henseler, Ringle, & Sinkovics, 2009) was used to examine whether a single or several of the latent passenger characteristics moderate the structural relationships of the research model. All the analyses were performed using the IBM-SPSS Statistics version 25 and SmartPLS 3.2.6 (Ringle, Wende, & Becker, 2015).

## 4. Results and discussion

### 4.1. Measurement model

The measurement model was firstly assessed regarding construct reliability. Almost all the measurement items presented outer loadings above 0.7 (see Table 2), which is the recommended threshold (Hair et al., 2011). A few measurement items were slightly lower than 0.7, and only one item presented a value below 0.4 (COP1). Following the outer loading test suggested by Joseph F. Hair, Hult, Ringle, and Sarstedt (2013), COP1 was deleted from the model. Additionally, the Cronbach's alpha values and the Composite Reliability (CR) values obtained for each construct exceeding 0.7 indicated sufficient construct

**Table 2**
Validity and reliability of constructs.

| Measurement items | Loading | CR | AVE | Alpha |
|---|---|---|---|---|
| Expectation | | 0.857 | 0.546 | 0.802 |
| EXP1- I had high expectation about the airport quality | 0.729 | | | |
| EXP2- I expected the airport to fully meet my needs as a passenger | 0.795 | | | |
| EXP3- I expected no failure in the service provision | 0.706 | | | |
| EXP4- I expected the services to be speedy and efficient | 0.743 | | | |
| EXP5- I expected to feel comfortable and safe at the airport | 0.721 | | | |
| Perceived value | | 0.872 | 0.580 | 0.816 |
| VAL1- Considering the overall airport quality, the airport fee is fair | 0.791 | | | |
| VAL2- Considering the airport fee, the airport services are very good | 0.875 | | | |
| VAL3- Considering the airport fee, the comfort is very good | 0.837 | | | |
| VAL4- Considering the quality of products/services, the prices in commercial facilities are fair | 0.620 | | | |
| VAL5- Considering the prices in commercial facilities, the quality of products/services is very good | 0.652 | | | |
| Passenger satisfaction | | 0.913 | 0.677 | 0.881 |
| SAT1- Overall, I am very satisfied with the airport | 0.845 | | | |
| SAT2- The airport exceeds my expectations | 0.844 | | | |
| SAT3- The airport represents what I understand for an ideal airport | 0.836 | | | |
| SAT4- I feel I have made the right decision in choosing this airport | 0.777 | | | |
| SAT5- Overall, my experience with the airport is very pleasant | 0.811 | | | |
| Image | | 0.925 | 0.711 | 0.898 |
| IMG1- The airport management can be trusted | 0.830 | | | |
| IMG2- The airport management is concerned with their customers | 0.865 | | | |
| IMG3- The airport management has a social contribution to the society | 0.836 | | | |
| IMG4- The airport has a good image among their customers | 0.852 | | | |
| IMG5- The airport is modern and well prepared for the future | 0.831 | | | |
| Complaints | | 0.875 | 0.637 | 0.810 |
| COP2- I have (or have had) intention to formally complain to the airport | 0.789 | | | |
| COP3- I have complained (or I am likely to complain) about the airport to family or friends | 0.828 | | | |
| COP4- Passengers that have complained to the airport are likely fair | 0.811 | | | |
| COP5- I do not believe that complaints are properly solved by the airport | 0.762 | | | |
| Switching costs | | 0.910 | 0.672 | 0.876 |
| SWC1- For me, it would be more expensive using another airport in this city | 0.759 | | | |
| SWC2- It would demand more personal efforts using another airport in this city | 0.869 | | | |
| SWC3- It would take much time if I have decided for using another airport in this city | 0.884 | | | |
| SWC4- For me, it would be very inconvenient to use another airport in this city | 0.878 | | | |
| SWC5- For convenience, I feel practically obliged to use this airport for domestic flights from São Paulo | 0.689 | | | |
| Loyalty | | 0.867 | 0.568 | 0.813 |
| LOY1- I will use this airport for my next flight departing from São Paulo | 0.775 | | | |
| LOY2- Even if another airport in the city offers a much cheaper fee, I prefer using this airport | 0.757 | | | |
| LOY3- Even if another airport in the city has an equivalent flight much cheaper, I prefer to use this airport | 0.642 | | | |
| LOY4- I will recommend this airport to my family and friends departing from São Paulo | 0.726 | | | |
| LOY5- I always prefer using this airport for domestic flights departing from São Paulo | 0.854 | | | |
| Check-in | | 0.908 | 0.768 | 0.848 |
| CHK1- Wait-time at check-in | 0.824 | | | |
| CHK2- Check-in process efficiency | 0.926 | | | |
| CHK3- Courtesy and helpfulness of check-in staff | 0.875 | | | |
| Security | | 0.898 | 0.687 | 0.848 |
| SEC1- Wait-time at security checkpoints | 0.822 | | | |
| SEC2- Thoroughness of security screening | 0.848 | | | |
| SEC3- Courtesy and helpfulness of security staff | 0.854 | | | |
| SEC4- Feeling of being safe and secure | 0.789 | | | |
| Convenience | | 0.906 | 0.548 | 0.880 |
| CON1- Availability and quality of Food facilities | 0.786 | | | |
| CON2- Courtesy and helpfulness of food facilities staff | 0.778 | | | |
| CON3- Availability and quality of Stores | 0.811 | | | |
| CON4- Courtesy and helpfulness of stores staff | 0.819 | | | |
| CON5- Banks/ATM/Exchange | 0.705 | | | |
| CON6- Internet/Wi-Fi | 0.584 | | | |
| CON7- Leisure/entertainment activities | 0.729 | | | |
| CON8- Courtesy and helpfulness of airport staff (excluding check-in, security inspection, and commercial area) | 0.678 | | | |
| Ambience | | 0.909 | 0.770 | 0.851 |
| AMB1- Cleanliness of airport facilities | 0.879 | | | |
| AMB2- Thermal comfort | 0.871 | | | |
| AMB3- Acoustic comfort | 0.882 | | | |
| Basic facilities | | 0.901 | 0.751 | 0.834 |
| BAS1- Availability of washroom/toilets | 0.869 | | | |
| BAS2- Cleanliness of washroom/toilets | 0.887 | | | |
| BAS3- Departure lounge comfort | 0.844 | | | |
| Mobility | | 0.872 | 0.696 | 0.780 |

(*continued on next page*)

**Table 2** (*continued*)

| Measurement items | Loading | CR | AVE | Alpha |
|---|---|---|---|---|
| MOB1- Wayfinding | 0.852 | | | |
| MOB2- Flight information | 0.867 | | | |
| MOB3- Walking distance inside terminal | 0.780 | | | |

**Table 3**
Discriminant validity.

| | Amb | Bas | Chk | Com | Con | Exp | Img | Loy | Mob | Sat | Sec | Swc | Val |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ambience | – | | | | | | | | | | | | |
| Basic Facilities | 0,814 | | | | | | | | | | | | |
| Check-in | 0,865 | 0,874 | | | | | | | | | | | |
| Complaints | 0,789 | 0,378 | 0,418 | | | | | | | | | | |
| Convenience | 0,350 | 0,289 | 0,274 | 0,401 | | | | | | | | | |
| Expectation | 0,860 | 0,619 | 0,677 | 0,579 | 0,293 | | | | | | | | |
| Image | 0,198 | 0,305 | 0,195 | 0,067 | 0,195 | 0,129 | | | | | | | |
| Loyalty | 0,747 | 0,660 | 0,635 | 0,538 | 0,402 | 0,680 | 0,211 | | | | | | |
| Mobility | 0,370 | 0,352 | 0,270 | 0,329 | 0,152 | 0,264 | 0,210 | 0,348 | | | | | |
| Satisfaction | 0,768 | 0,424 | 0,571 | 0,557 | 0,118 | 0,547 | 0,132 | 0,421 | 0,266 | | | | |
| Security | 0,769 | 0,697 | 0,656 | 0,517 | 0,394 | 0,694 | 0,229 | 0,819 | 0,367 | 0,469 | | | |
| Switching Cost | 0,886 | 0,554 | 0,541 | 0,767 | 0,300 | 0,664 | 0,170 | 0,594 | 0,350 | 0,538 | 0,613 | | |
| Value | 0,152 | 0,099 | 0,101 | 0,069 | 0,360 | 0,205 | 0,128 | 0,139 | 0,536 | 0,062 | 0,233 | 0,099 | – |

Note: None of the correspondent bootstrap confidence intervals includes the value 1.

reliability (Table 2).

All the average variance extracted (AVE) values were higher than the recommended threshold of 0.5. Based on these results, the items with outer loadings slightly below 0.7 were maintained, as their exclusion did not improve the AVE and CR values (Hair et al., 2013).

Concerning discriminant validity, the heterotrait-monotrait (HTMT) ratio of correlations was used (Hair et al., 2017; Usakli & Kucukergin, 2018). All HTMT values are below 0.90, establishing the discriminant validity of the constructs (Henseler, Ringle, & Sarstedt, 2015) (Table 3).

As for the ASQ construct, the loadings of the first-order constructs on the second-order construct are all significative ($p < 0.001$) and sufficiently strong. As such, they indicate that passenger perceptions of ASQ can be measured as a second-order construct (Joseph F. Hair et al., 2011), reflecting the six service quality dimensions representative of the services, facilities, and environmental aspects of the airport, as proposed by Bezerra and Gomes (2016a).

Regarding common method variance, based on the results of Harman's single-factor test, and of the common latent factor approach (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003), no significant concerns about common method bias were found.

### 4.2. Identification of passenger segments

Following the methodology explained in Section 3.3, the FIMIX-PLS procedure was used to uncover latent segments of passengers. For this purpose, the systematic approach suggested by Hair et al. (2016a) was followed. First, according to the results of this procedure, two segments of passengers were found to be the most suitable solution (Table 4), confirming the heterogeneity of the sample.

Second, to explain the latent segment structure, all the variables relating to passenger characteristics were used to identify one or more of them which match the two segment FIMIX-PLS partition. Therefore, cross-table analysis regarding these variables was used to assign segment descriptors (Ringle, Sarstedt, & Mooi, 2010). Of all the passenger characteristics, the frequency of departures from the airport (i.e., repeat customers) and the trip purpose were found to show a suitable fit with FIMIX-PLS segmentation results.

Consequently, sample data was split into two groups relating to the frequency of departures from the airport. A first group represents the frequent passengers, including respondents that claimed using the airport more than five times in the last year, and a second group which represents non-frequent passengers that claimed a lower frequency. Data was also split into two groups relating to the trip purpose. A group represents passengers with a business purpose, and the other represents passengers traveling for other purposes, including leisure, visiting family, studying.

Before the multi-group analysis, the MICOM procedure was used to analyse the measurement invariance. Based on the results, the partial measurement invariance was verified, which is the requirement for comparing and interpreting the group-specific differences of MGA results (Henseler, Ringle, & Sarstedt, 2016).

### 4.3. The influence of passengers' travel frequency

To assess the moderating effect of passengers' travel frequency on the relationships between loyalty and its antecedents, a multi-group analysis was performed. Based on previous research carried out in a Brazilian Airport (Bezerra & Gomes, 2015) and aligned with regular industry practices adopted by passenger survey programs in the airport sector (ACI, 2016; SAC, 2016), in this study two groups of passengers were considered (passengers with < 5 flights in the last 12 months and passengers with > 5 flights in the same period). The results of the structural models for frequent and non-frequent passengers, using a bootstrapping procedure with resampling of 5000, are presented in Table 5.

According to the $Q^2$ results, which are all positive, both models have predictive relevance. The values of $f^2$ are also positive and follow a similar rank order of the path coefficients, which means that to large significant paths values correspond large effect sizes (Joseph F. Hair et al., 2013).

The results of the multi-group analysis show several differences between frequent and non-frequent passengers. The main differences relate to the effects of expectation, perceived value, satisfaction, complaints, and airport image. For non-frequent passengers, we found positive effects of their expectation on both perceived value and service quality. We also found a positive effect of the airport image on passenger expectation and their satisfaction on loyalty to the airport. On the other hand, frequent passengers seem to be sensitive to complaints arising from low levels of satisfaction, which manifests significantly in loyalty to the airport. The perceived value also manifest a positive

**Table 4**
Segment retention criteria for alternative FIMIX-PLS solutions.

| Quality Criteria | Number of segments | | | |
|---|---|---|---|---|
| | S = 1 | S = 2 | S = 3 | S = 4 |
| **AIC** (Akaike's Information Criterion) | 8874.716 | 8733.453 | 8661.331 | 8622.647 |
| **AIC3** (Modified AIC with Factor 3) | 8905.716 | 8796.453 | 8756.331 | 8749.647 |
| **AIC4** (Modified AIC with Factor 4) | 8936.716 | 8859.453 | 8851.331 | 8876.647 |
| **BIC** (Bayesian Information Criteria) | 8992.954 | 8973.743 | 9023.673 | 9107.042 |
| **CAIC** (Consistent AIC) | 9023.954 | 9036.743 | 9118.673 | 9234.042 |
| **MDL5** (Minimum Description Length with Factor 5) | 9713.906 | 10,438.9 | 11,233.04 | 12,060.62 |
| **LnL** (LogLikelihood) | −4406.358 | −4303.73 | −4235.67 | −4184.32 |
| **EN** (Entropy Statistic (Normed)) | | 0.631 | 0.697 | 0.672 |

| Number of the segments | Relative segment sizes | | |
|---|---|---|---|
| | 2 | 3 | 4 |
| $S_1$ | 61.2% | 46.3% | 35.9% |
| $S_2$ | 38.8% | 37.7% | 28.1% |
| $S_3$ | | 16.0% | 27.1% |
| $S_4$ | | | 9.0% |

effect of their satisfaction with the airport.

Regarding the total effects on loyalty, we found significant differences in the magnitude between the two segments of passengers for ASQ and passenger expectation. These drivers are much more important for the loyalty of non-frequent passengers than for frequent passengers.

Finally, to be noted that airport service quality has a positive effect on perceived value and passenger satisfaction for both segments of passengers, which corroborate the importance of airport service quality for passenger experience.

### 4.4. The influence of passengers' trip purpose

Following the same procedures, a multi-group analysis was performed considering the two groups of passengers based on the trip purpose, as identified through the FIMIX method. The results of the structural models are presented in Table 6. According to the $Q^2$ and $f^2$ results, both models have predictive relevance (Hair et al., 2013).

The results related to the trip purpose show only one difference between the groups of passengers. The effects of expectation on ASQ was only significant for passengers with non-business purposes.

Regarding the total effects on loyalty, no significant differences in magnitude were found between the two segments of passengers.

### 4.5. Discussion

The results of this study seem to confirm the existence of groups of passengers with different characteristics and attitudes relating to their interaction with the airport. They also provided evidence for the existence of differentiating drivers of loyalty between these groups, in a multi-airport region (MAR) context.

Three important drivers of loyalty, with significant effects for all passenger segments, were found: airport service quality (ASQ), switching costs, and airport image.

The service quality, which is measured using a multidimensional scale specifically designed for airports (Bezerra & Gomes, 2016a), influences the loyalty of passengers to the airport through their satisfaction. This means that ASQ can contribute to maintaining the preference for the airport from a long-term perspective (Akamavi et al., 2015).

The perception of switching costs by the passengers directly influence their loyalty to the airport. The influence of the airport image on the loyalty of passengers is mediated by their satisfaction. It should be noted that the image of the airport also influences the expectations for all but frequent passengers. This finding may have implications for the tourist destinations (Pizam, 2017; Voltes-Dorta et al., 2017).

These three drivers of loyalty, although recognized as very important for business organizations wishing to be competitive globally, have not been valued in the literature related to airport management. These results may suggest that airports are no longer seen only as transport modal infrastructures. Accordingly, they should be seen as partners in the tourist services chain, through the lens of tourism management.

The results of this study also highlight three drivers that act differently on loyalty, according to the passenger segments: perceived value, passenger satisfaction, and passenger complaining attitude. The influence of perceived value on satisfaction is significant for all but non-frequent passengers. On the other hand, the direct relationship between satisfaction and loyalty is significant for all but frequent passengers.

Concerning the complaints arising from low levels of satisfaction, all but non-frequent passengers show a significant effect from satisfaction to complaints. However, it seems that only frequent passengers are willing to value complaints when they choose to use the same airport again. These results are interesting because, in the literature related to airlines, only business passengers are more concerned with service failures (Carlsson & Löfgren, 2006; Cho et al., 2015).

Finally, passenger expectation shows significant effects on perceived value only for non-frequent passengers (Table 5). It also shows significant effects on ASQ for non-frequent and non-business passengers. Despite having these direct effects on ASQ and perceived value, passenger expectation does not present significant total effects on their loyalty to the airport, except for non-frequent passengers, that usually are people traveling for leisure. Therefore, very active in the e-word-of-mouth, which can influence the passengers of the remaining segments.

Overall, the findings of this study may suggest that the airport is changing from the strictest sense of a physical site where people and goods exchange between the air mode and land transport modes to a significant element of the tourism experience. Hence, the characteristics and concerns of different groups of passengers regarding the airport, evidenced by the results, became relevant issues when considering the tourism experience as a whole, which confirms the most recent literature (Huang, Xiao, & Wang, 2018; Wattanacharoensil et al., 2017).

## 5. Conclusions

In today's competitive environment, business organizations need to find innovative strategies to differentiate them from their competitors. In this context, it is essential to know the characteristics and behaviour patterns of their customers. As such, they will be able to design

**Table 5**
PLS results of multi-group analysis based on travel frequency.

| | Frequent passengers | | Non-frequent passengers | | |
|---|---|---|---|---|---|
| Number of observations | 146 | | 188 | | |
| Path relationship: | Coefficients | $f^2$ | Coefficients | $f^2$ | $\|\Delta\|$ |
| Airport Service Quality → Satisfaction | 0.129** | 0.027 | 0.256*** | 0,147 | 0,127 |
| Airport Service Quality → Perceived value | 0.534*** | 0.397 | 0.614** | 0,655 | 0,080 |
| Complaints → Loyalty | −0.189** | 0.044 | −0.048 | 0,004 | 0,141 |
| Expectation → Airport Service Quality | 0.148 | 0.022 | 0.277*** | 0,083 | 0,129 |
| Expectation → Satisfaction | 0.012 | 0.000 | 0.055 | 0,011 | 0,043 |
| Expectation → Perceived value | 0.053 | 0.004 | 0.176** | 0,054 | 0,123 |
| Image → Expectation | 0.178* | 0.033 | 0.319*** | 0,113 | 0,141 |
| Image → Loyalty | 0.124 | 0.008 | −0.068 | 0,003 | 0,192 |
| Image → Satisfaction | 0.578*** | 0.458 | 0.462*** | 0,394 | 0,116 |
| Satisfaction → Complaints | −0.418*** | 0.211 | −0.058 | 0,003 | 0,360** |
| Satisfaction → Loyalty | 0.168 | 0.016 | 0.538*** | 0,210 | 0,370** |
| Switching Cost → Loyalty | 0.532*** | 0.375 | 0.539*** | 0,528 | 0,007 |
| Switching Cost*Complaints → Loyalty | −0.002 | 0.000 | −0.062 | 0,008 | 0,060 |
| Switching Cost*Image → Loyalty | −0.057 | 0.005 | 0.045 | 0,004 | 0,101 |
| Switching Cost*Satisfaction → Loyalty | 0.082 | 0.011 | −0.201 | 0,068 | 0,283 |
| Perceived value → Satisfaction | 0.216*** | 0.099 | 0.244 | 0,101 | 0,028 |

| | $R^2$ | $Q^2$ | $R^2$ | $Q^2$ |
|---|---|---|---|---|
| Airport Service Quality | 0.022 | 0.007 | 0.077 | 0,027 |
| Complaints | 0.175 | 0.105 | 0.003 | 0,001 |
| Expectation | 0.032 | 0.011 | 0.102 | 0,039 |
| Loyalty | 0.405 | 0.179 | 0.570 | 0,271 |
| Satisfaction | 0.693 | 0.411 | 0.771 | 0,497 |
| Perceived value | 0.296 | 0.146 | 0.468 | 0,242 |

| | CR | AVE | CR | AVE |
|---|---|---|---|---|
| Complaints | 0.885 | 0.658 | 0.730 | 0,484 |
| Expectation | 0.873 | 0.580 | 0.819 | 0,477 |
| Image | 0.906 | 0.657 | 0.938 | 0,752 |
| Loyalty | 0.867 | 0.568 | 0.870 | 0,575 |
| Satisfaction | 0.899 | 0.642 | 0.919 | 0,694 |
| Switching Cost | 0.900 | 0.647 | 0.912 | 0,678 |
| Perceived value | 0.854 | 0.551 | 0.870 | 0,573 |

| Total Effects on Loyalty: | Coefficients | Coefficients | $\|\Delta\|$ |
|---|---|---|---|
| Airport Service Quality → Loyalty | 0.060** | 0.220*** | 0,159** |
| Complaints → Loyalty | −0.189** | −0.048 | 0,141 |
| Expectation → Loyalty | 0.015 | 0.114** | 0,099** |
| Image → Loyalty | 0.270*** | 0.218*** | 0,052 |
| Satisfaction → Loyalty | 0.247** | 0.541*** | 0,294* |
| Switching Cost → Loyalty | 0.532*** | 0.539*** | 0,007 |
| Perceived value → Loyalty | 0.053* | 0.132** | 0,078 |

***$p < 0.01$, **$p < 0.05$, *$p < 0.10$ (reported for path coefficients only); $|\Delta|$- absolute differences between path coefficients of the two groups; CR- Composite reliability; AVE- Average variance extracted.

differentiated marketing and operational strategies aiming at strengthening the loyalty of the different customer segments.

Although this approach is not new to competitive business organizations, it has only recently started to be followed by organizations that typically did not have business activities focused on individual customers, such as airports. Whereas the overall airport attractiveness is dependent on several factors (including location, routes, scheduling, air ticket prices, etc.), airport managers are ever more concerned with a customer-oriented approach for achieving competitive advantage. In addition, airports are no longer seen merely as transport infrastructures and are now regarded as instruments of regional development not only for the transportation industry but also for the tourism industry. In this context, this study brings several theoretical and practical contributions to airport management along with tourism management.

According to the results, the following more relevant theoretical contributions are emphasized. First, the design of the conceptual model, which allowed the integration of several variables that characterize the airport service environment and the passenger-airport interaction. There is scarce empirical research on airport experience based on a customer-oriented perspective, and this study is among the few efforts with a comprehensive approach to passenger loyalty. Additionally, the inclusion of the switching costs effects on loyalty provides relevant empirical evidence to the debate on competition in MAR context, based on the passenger perspective.

Second, the findings confirm the importance of switching costs to passenger loyalty in MAR context. It also allows verifying the lack of interaction of this variable with the airport image, passenger satisfaction and with passengers' complaints. As such, these particular findings shed light on the nature of passenger experience in the airport, which is an ever more important element of the tourism industry (Spasojevic et al., 2017; Wattanacharoensil et al., 2017).

Third, the findings support the suitability of a multidimensional

**Table 6**
PLS results of multi-group analysis based on trip purpose.

| | Business | | Non -Business | | |
|---|---|---|---|---|---|
| Number of observations | 219 | | 114 | | |
| Path relationship: | Coefficients | $f^2$ | Coefficients | $f^2$ | \|Δ\| |
| Airport Service Quality → Satisfaction | 0.171** | 0.054 | 0.243*** | 0,112 | 0,072 |
| Airport Service Quality → Perceived value | 0.551*** | 0.450 | 0.664*** | 0,718 | 0,114 |
| Complaints → Loyalty | −0.138* | 0.022 | −0.067 | 0,009 | 0,071 |
| Expectation → Airport Service Quality | 0.097 | 0.009 | 0.318*** | 0,112 | 0,221* |
| Expectation → Satisfaction | 0.014 | 0.001 | 0.043 | 0,008 | 0,028 |
| Expectation → Perceived value | 0.127 | 0.240 | 0.014 | 0,000 | 0,113 |
| Image → Expectation | 0.185** | 0.035 | 0.248** | 0,065 | 0,063 |
| Image → Loyalty | 0.123 | 0.008 | 0.019 | 0,000 | 0,103 |
| Image → Satisfaction | 0.531*** | 0.440 | 0.504*** | 0,409 | 0,028 |
| Satisfaction → Complaints | −0.366*** | 0.155 | −0.239** | 0,060 | 0,127 |
| Satisfaction → Loyalty | 0.247** | 0.035 | 0.330** | 0,068 | 0,084 |
| Switching Cost → Loyalty | 0.544*** | 0.379 | 0.547*** | 0,603 | 0,002 |
| Switching Cost*Complaints → Loyalty | −0.016 | 0.000 | 0.069 | 0,010 | 0,085 |
| Switching Cost*Image → Loyalty | 0.043 | 0.000 | 0.109 | 0,023 | 0,066 |
| Switching Cost*Satisfaction → Loyalty | −0.106 | 0.002 | 0.229 | 0,112 | 0,336 |
| Perceived value → Satisfaction | 0.244*** | 0.112 | 0.209** | 0,084 | 0,035 |

| | $R^2$ | $Q^2$ | $R^2$ | $Q^2$ |
|---|---|---|---|---|
| Airport service quality | 0.009 | 0.003 | 0.101 | 0,034 |
| Complaints | 0.134 | 0.078 | 0.057 | 0,014 |
| Expectation | 0.034 | 0.014 | 0.061 | 0,018 |
| Loyalty | 0.401 | 0.173 | 0.582 | 0,297 |
| Satisfaction | 0.710 | 0.444 | 0.783 | 0,473 |
| Perceived value | 0.333 | 0.172 | 0.448 | 0,226 |

| | CR | AVE | CR | AVE |
|---|---|---|---|---|
| Complaints | 0.879 | 0.646 | 0.858 | 0,605 |
| Expectation | 0.875 | 0.583 | 0.801 | 0,449 |
| Image | 0.919 | 0.696 | 0.925 | 0,711 |
| Loyalty | 0.852 | 0.539 | 0.893 | 0,629 |
| Satisfaction | 0.912 | 0.674 | 0.908 | 0,663 |
| Switching cost | 0.909 | 0.668 | 0.903 | 0,655 |
| Perceived value | 0.866 | 0.570 | 0.870 | 0,576 |

| Total Effects on Loyalty: | Coefficients | Coefficient | \|Δ\| |
|---|---|---|---|
| Airport Service Quality - > Loyalty | 0.091** | 0.132** | 0,041 |
| Complaints - > Loyalty | −0.138* | −0.067 | 0,071 |
| Expectation - > Loyalty | 0.022 | 0.058 | 0,036 |
| Image - > Loyalty | 0.285*** | 0.208** | 0,077 |
| Satisfaction - > Loyalty | 0.297** | 0.347** | 0,049 |
| Switching Cost - > Loyalty | 0.544*** | 0.547*** | 0,002 |
| Perceived value - > Loyalty | 0.073** | 0.073** | 0,000 |

***$p < 0.01$, **$p < 0.05$, *$p < 0.10$ (reported for path coefficients only); |Δ|- absolute differences between path coefficients of the two groups; CR- Composite reliability; AVE- Average variance extracted.

context-specific scale for measuring service quality in the airport environment. This approach will allow testing of new hypotheses in the context of airport research and helps respond to current literature concerns (Ali et al., 2016; Bezerra & Gomes, 2016b; Wattanacharoensil et al., 2016, 2017).

Fourth, the importance of identifying passenger latent segments along with the predictive relevance of the research model analysed. This study contributes to this debate in testing for differences in perceptions and attitudes between specific groups of passengers based on their trip purpose and repeated experience in the airport. This segmentation revealed important differences concerning the airport service experience. The passenger segments identified may also explain some of the contradictory results in the literature that may not be considering sample heterogeneity. In effect, since passenger's perceptions and attitudes towards their experience in the airport can be significantly different based on their characteristics as a customer segment, general models of passenger perceptions and experience may potentially hide relevant information for airport managers and policy-makers. As such, this study may contribute to the debate on different consumptions rituals and patterns in the airport, and their importance of making the airport environment to be seen as a familiar and comfortable place, instead of be associated with emotional stress and anxiety (Huang et al., 2018).

This study also provides important managerial implications. The findings of this research could help airport managers in the design and implementation of a multidimensional performance measurement system (PMS) to monitor airport resources and services effectively, through the lens of tourism management. Such a tourism-oriented approach to the airport business can increase the potential of improving non-aeronautical revenues comparing to airports that are only managed as transport infrastructures (Fernández et al., 2018)

When looking at airports as tourism-oriented organizations, airport

managers should avoid assuming efficiency as the only component of airport performance and take into account other performance dimensions, in particular, the quality of services provided to passengers, and the airport image. This multidimensional PMS should help managers to define marketing and operational strategies to strengthen passenger loyalty to the airport, as well as to contribute to the improvement of the tourist destination's image. In addition, this PMS may improve the information flow with other partners of the tourism services chain and with institutional tourism stakeholders. As a result, airports could be more and more explored as a key element in the tourism experience.

In this perspective, airport managers should be able to identify differentiated areas of resources improvement that would meet the characteristics of the passenger segments in order to increase the value of the service and differentiate the airport from their competitors. As an example, the inclusion of business and cultural branding elements that represent the characteristics of the local and regional environment can attract the attention of the passengers and promote tourism destination. Since airports usually represent the last impression of the tourist destination, a pleasant airport experience can actively contribute to the image of the destination, by promoting not only the return of visitors but also their willingness to recommend the airport region as a tourism destination.

Despite the important theoretical and practical contributions to the knowledge in the context of transport and tourism industries, the specific results of this study should be interpreted in the context of Brazilian culture, and the characteristics of the particular MAR studied. Given the importance of the subject, similar research should be undertaken in other cultural and business contexts. Future research should also explore the expectations, needs, and specific behaviour patterns of these segments of passengers in their interaction with other stakeholders along the tourism service chain.

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## Appendix A. Descriptive statistics of the measurement items

| Measurement items | Mean | SD | Skew. | Kurt. |
|---|---|---|---|---|
| Expectation | | | | |
| EXP1 - I had high expectation about the airport quality | 4.61 | 1.34 | −0.077 | −0.053 |
| EXP2 - I expected the airport to fully meet my needs as a passenger | 5.20 | 1.43 | 0.032 | −0.640 |
| EXP3 - I expected no failure in the service provision | 5.23 | 1.67 | 0.097 | −0.876 |
| EXP4 - I expected the services to be speedy and efficient | 5.39 | 1.56 | 0.136 | −0.882 |
| EXP5 - I expected to feel comfortable and safe at the airport | 5.70 | 1.52 | 0.844 | −1.197 |
| Perceived value | | | | |
| VAL1 - Considering the overall airport quality, the airport fee is fair | 3.74 | 1.79 | −0.875 | 0.052 |
| VAL2 - Considering the airport fee, the airport services are very good | 3.62 | 1.67 | −0.793 | 0.144 |
| VAL3 - Considering the airport fee, the comfort is very good | 3.69 | 1.64 | −0.845 | −0.041 |
| VAL4 - Considering the quality of products/services, the prices in commercial facilities are fair | 2.39 | 1.54 | −0.205 | 0.883 |
| VAL5 - Considering the prices in commercial facilities, the quality of products/services is very good | 3.04 | 1.56 | −0.840 | 0.288 |
| Passenger satisfaction | | | | |
| SAT1 - Overall, I am very satisfied with the airport | 3.81 | 1.64 | −0.799 | 0.011 |
| SAT2 - The airport exceeds my expectations | 3.21 | 1.69 | −0.928 | 0.267 |
| SAT3 - The airport represents what I understand for an ideal airport | 2.94 | 1.61 | −0.543 | 0.502 |
| SAT4 - I feel I have made the right decision in choosing this airport | 4.10 | 1.47 | −0.080 | −0.273 |
| SAT5 - Overall, my experience with the airport is very pleasant | 4.13 | 1.52 | −0.462 | −0.116 |
| Image | | | | |
| IMG1 - The airport administration can be trusted | 4.06 | 1.38 | 0.277 | −0.229 |
| IMG2 - The airport administration is concerned with their customers | 3.96 | 1.42 | −0.057 | −0.081 |
| IMG3 - The airport administration has a social contribution for the society | 3.85 | 1.34 | 0.502 | −0.125 |
| IMG4 - The airport has a good image among their customers | 3.98 | 1.60 | −0.762 | −0.001 |
| IMG5 - The airport is modern and well prepared for the future | 3.31 | 1.69 | −0.876 | 0.210 |
| Complaints | | | | |
| COP1 - I have formally complained to the airport | 2.22 | 1.78 | 0.294 | 1.231 |
| COP2 - I have (or have had) intention to formally complain to the airport | 3.15 | 2.05 | −1.084 | 0.460 |
| COP3 - I have complained (or I am likely to complain) about the airport to family or friends | 3.43 | 2.11 | −1.278 | 0.285 |
| COP4 - Passengers that have complained to the airport are likely fair | 4.38 | 1.71 | −0.496 | −0.296 |
| COP5 - I do not believe that complaints are properly solved by the airport | 4.50 | 1.75 | −0.580 | −0.377 |
| Switching costs | | | | |
| SWC1 - For me, it would be more expensive using another airport in this city | 4.74 | 1.86 | −0.676 | −0.469 |
| SWC2 - It would demand more personal efforts using another airport in this city | 5.22 | 1.83 | −0.192 | −0.847 |
| SWC3 - It would take much time if I have decided for using another airport in this city | 5.33 | 1.85 | −0.010 | −0.988 |
| SWC4 - For me, it would be very inconvenient to use another airport in this city | 5.00 | 1.91 | −0.565 | −0.667 |
| SWC5 - For convenience, I feel practically obliged to use this airport for domestic flights from São Paulo | 4.89 | 2.06 | −0.794 | −0.679 |
| Loyalty | | | | |
| LOY1 - I will use this airport for my next flight departing from São Paulo | 5.29 | 1.54 | −0.387 | −0.564 |
| LOY2 - Even if another airport in the city offers a much cheaper fee, I prefer using this airport | 4.19 | 1.95 | −0.959 | −0.179 |
| LOY3 - Even if another airport in the city has an equivalent flight much cheaper, I prefer to use this airport | 3.56 | 1.98 | −1.073 | 0.195 |
| LOY4 - I will recommend this airport to my family and friends departing from São Paulo | 4.26 | 1.53 | −0.062 | −0.208 |
| LOY5 - I always prefer using this airport for domestic flights departing from São Paulo | 4.82 | 1.75 | −0.381 | −0.522 |
| Check-in | | | | |
| CHK1 - Wait time at check-in | 4.59 | 1.55 | −0.303 | −0.290 |
| CHK2 - Check-in process efficiency | 4.93 | 1.47 | −0.482 | −0.297 |
| CHK3 - Courtesy and helpfulness of check-in staff | 5.02 | 1.41 | −0.146 | −0.473 |
| Security | | | | |
| SEC1 - Wait-time at security checkpoints | 4.97 | 1.55 | −0.321 | −0.540 |

| | | | | |
|---|---|---|---|---|
| SEC2 - Thoroughness of security screening | 4.83 | 1.59 | −0.272 | −0.552 |
| SEC3 - Courtesy and helpfulness of security staff | 4.85 | 1.46 | −0.139 | −0.609 |
| SEC4 - Feeling of being safe and secure | 4.71 | 1.55 | −0.310 | −0.500 |
| Convenience | | | | |
| CON1 - Food facilities | 3.61 | 1.59 | −0.846 | −0.111 |
| CON2 - Courtesy and helpfulness of food facilities staff | 4.03 | 1.54 | −0.581 | −0.253 |
| CON3 - Stores | 3.99 | 1.50 | −0.423 | −0.210 |
| CON4 - Courtesy and helpfulness of stores staff | 4.38 | 1.37 | −0.065 | −0.323 |
| CON5 - Banks/ATM/Exchange | 4.09 | 1.54 | −0.611 | −0.161 |
| CON6 - Internet/Wi-Fi | 3.29 | 1.92 | −1.132 | 0.280 |
| CON7 - Leisure/entertainment activities | 2.85 | 1.61 | −0.624 | 0.515 |
| CON8 - Courtesy and helpfulness of airport staff (excluding check-in, security inspection, and commercial area) | 4.41 | 1.41 | −0.230 | −0.305 |
| Ambience | | | | |
| AMB1 - Cleanliness of airport facilities | 4.86 | 1.40 | −0.245 | −0.516 |
| AMB2 - Thermal comfort | 4.49 | 1.65 | −0.570 | −0.428 |
| AMB3 - Acoustic comfort | 4.39 | 1.69 | −0.741 | −0.410 |
| Basic facilities | | | | |
| BAS1 - Availability of washroom/toilets | 4.55 | 1.47 | −0.241 | −0.408 |
| BAS2 - Cleanliness of washroom/toilets | 4.31 | 1.68 | −0.659 | −0.357 |
| BAS3 - Departure lounge comfort | 4.12 | 1.51 | −0.542 | −0.157 |
| Mobility | | | | |
| MOB1 - Wayfinding | 4.84 | 1.65 | −0.508 | −0.579 |
| MOB2 - Flight information | 4.97 | 1.64 | −0.406 | −0.678 |
| MOB3 - Walking distance inside terminal | 4.30 | 1.65 | −0.525 | −0.409 |

Notes: SD – Standard deviation; Skew – Skewness; Kurt – Kurtosis.

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